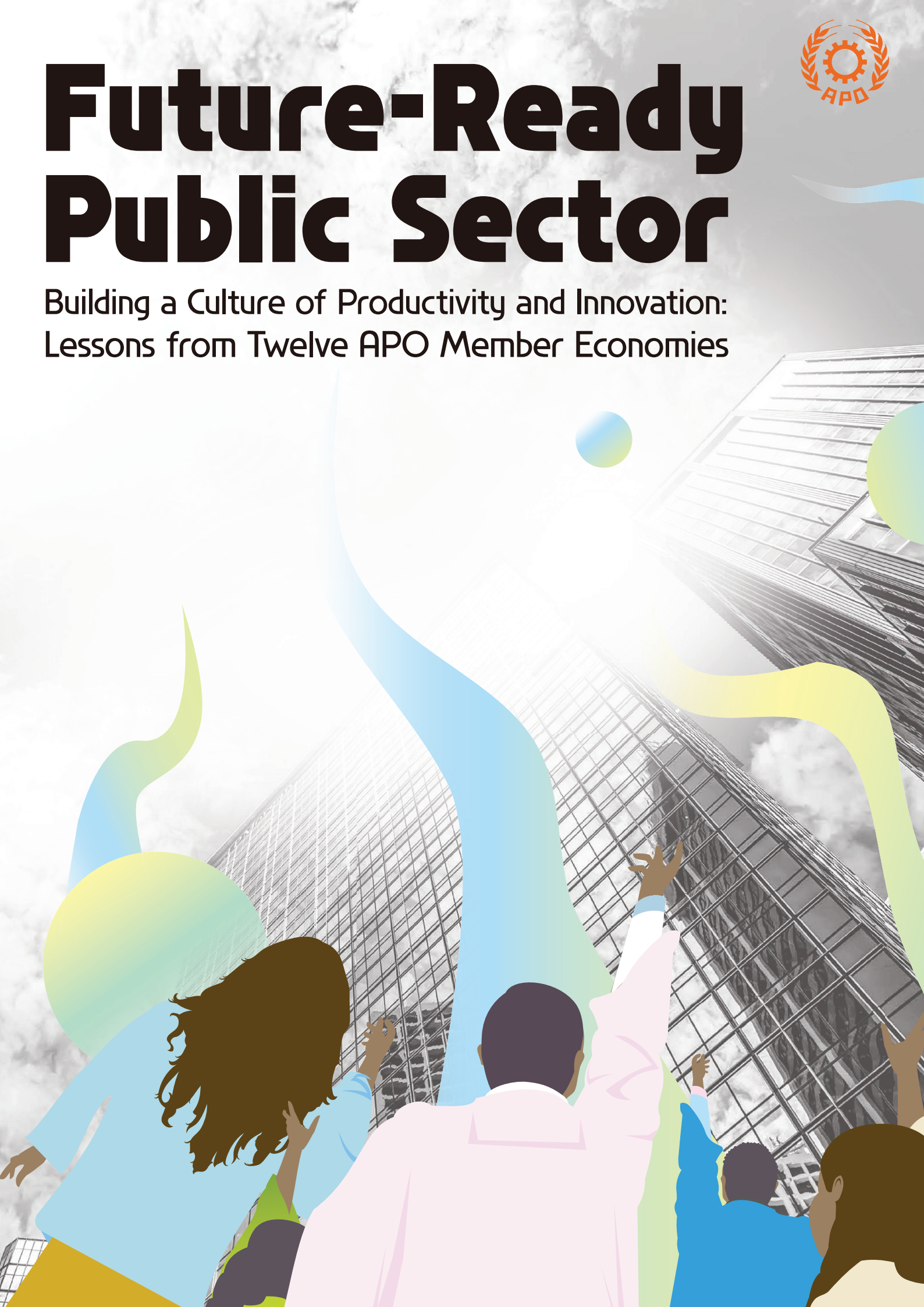
Future-Ready Public Sector

Building a Culture of Productivity and Innovation: Lessons from Twelve APO Member Economies



The Asian Productivity Organization (APO) is an intergovernmental organization that promotes productivity as a key enabler for socioeconomic development and organizational and enterprise growth. It promotes productivity improvement tools, techniques, and methodologies; supports the national productivity organizations of its members; conducts research on productivity trends; and disseminates productivity information, analyses, and data. The APO was established in 1961 and comprises 21 members.

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FUTURE-READY PUBLIC SECTOR
BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION: LESSONS FROM TWELVE APO MEMBER ECONOMIES

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Future-Ready Public Sector Building a Culture of Productivity and Innovation: Lessons from Twelve APO Member Economies

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FOREWORD

The Asian Productivity Organization (APO) is committed to advancing productivity and fostering innovation across its member economies as a pathway to sustainable and inclusive development. In an era characterized by rapid technological change, evolving citizen expectations, and increasingly complex public policy challenges, the role of the public sector has become more critical than ever. In addition to delivering efficient services, governments are expected to lead transformation through innovation, collaboration, and forward-looking governance. Importantly, these processes and reforms must go beyond isolated initiatives to become culturally embedded within the public sector, ensuring that productivity and innovation are sustained, institutionalized, and continuously strengthened over the long term.

Building a Culture of Productivity and Innovation in the Public Sector in APO Member Economies presents a comprehensive analysis of how 12 APO member economies are strengthening their public sector capabilities through innovation. It highlights practical experiences, emerging trends, and good practices that demonstrate how productivity improvements can be achieved through digital transformation, institutional reform, and citizen-centered approaches.

The findings of this report underscore that innovation in the public sector is no longer optional. Across diverse national contexts, there has been a clear shift from isolated initiatives toward more integrated, system-wide approaches. Strong leadership, coherent policy frameworks, digital infrastructure, and investment in human capital have emerged as critical enablers of successful innovation. Equally important is the growing recognition of citizens as active participants in shaping public services, thereby reinforcing accountability, transparency, and trust.

This report reflects the collective efforts of distinguished national experts across APO member economies. Their contributions provide valuable insights into both the opportunities and challenges of building innovation ecosystems within government. The lessons drawn from these experiences offer a practical roadmap for policymakers and public sector leaders seeking to institutionalize a culture of productivity and innovation.

The APO will continue to support its members in translating these insights into action through capacity building, knowledge sharing, and strategic partnerships. By working together, member economies can accelerate public sector transformation, enhance governance performance, and deliver greater value to their citizens.

The APO would like to express its sincere gratitude to Professor Jenny M. Lewis, chief expert of this project from the University of Melbourne, Australia, for her outstanding leadership, intellectual guidance, and dedication in delivering this comprehensive report. The APO would also like to extend its gratitude to the 12 national experts from Bangladesh, Cambodia, India, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Sri Lanka, Turkiye, and Vietnam for their invaluable contributions to this research project.

I hope this research will serve as a useful reference and source of inspiration for advancing innovation-driven public sector reengineering across the region.

Dr. Indra Pradana Singawinata
Secretary-General
Asian Productivity Organization
Tokyo

DRIVING PUBLIC SECTOR PRODUCTIVITY AND INNOVATION: EVIDENCE FROM APO MEMBER ECONOMIES

EXECUTIVE SUMMARY

This report presents the findings of the Asian Productivity Organization (APO) research project, *Building a Culture of Productivity and Innovation in the Public Sector in APO Member Economies*. The project examined how 12 APO member economies (i.e., Bangladesh, Cambodia, India, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Sri Lanka, Turkiye, and Vietnam) are developing public sector innovation to strengthen productivity, governance, and service outcomes. Collectively, the findings provide a roadmap for APO member economies seeking to strengthen public sector productivity and innovation capacity. By aligning leadership, governance, digital infrastructure, and citizen-centered approaches, APO member countries can shift from isolated initiatives toward sustained, system-wide transformation.

Innovation can be broadly defined as the introduction and implementation of new ideas, processes, services, or technologies that improve performance and citizen outcomes. This definition aligns with OECD and APO definitions of public sector innovation. Across the 12 member economies, the research project identified strong commonalities in innovation goals, methods, and enabling conditions. Among innovations, the most frequent are process and service innovations with a heavy emphasis on digital solutions. Indeed, of the 36 good-practice cases, 21 are process innovations and 32 rely significantly on digital transformation. Other good-practice cases highlight citizen engagement and governance reforms as drivers of performance improvement.

While national contexts vary, they also have much in common. Four dominant structural trends shape regional innovation ecosystems:

1. Digital transformation as the primary innovation paradigm, with governments modernizing procurement, land management, service delivery, and identity systems through integrated digital platforms.

2. Differences in centralization and coordination, ranging from highly centralized innovation authorities to fragmented or distributed arrangements.

3. Multi-actor ecosystems, where development partners, private technology firms, universities, and civil society increasingly shape innovation outcomes and contribute expertise, resources, and operational capacity.

4. Increasing citizen-centric service reforms, with some member economies integrating feedback loops and participatory tools into digital systems, while others focus on administrative efficiency and transparency.

Analysis of all 36 cases in 12 APO member economies revealed a consistent set of drivers underpinning successful innovation: strong political leadership, coherent policies and legal frameworks, shared digital infrastructure, datadriven governance, investment in human capital and digital skills, and cross-sector collaboration. Local empowerment, agile processes, and incentives for innovation further enhance system performance and reform sustainability. Public sector innovation is constrained by fragmented institutions, skills shortages, digital divides, risk-averse bureaucratic cultures, weak data governance, and heavy reliance on donor funding, all of which limit the scaling and sustainability of reforms.

This report concludes with recommendations for building a culture of productivity and innovation, emphasizing national vision and leadership, integrated governance arrangements, performance-based accountability, investment in human capital, interoperable digital systems, citizen-centered design, cross-sector partnerships, and decentralized and agile approaches that enable frontline experimentation and adaptation. High-level leadership provides strategic direction, alignment, and continuity, while coordinated governance structures supported by clear legal frameworks and interoperability standards ensure consistency and scalability. Data-driven accountability mechanisms, including indicators, dashboards, and open data, reinforce transparency and continuous learning.

Building innovation capacity depends on the types of innovations being introduced, as well as the fostering of organizational cultures that support experimentation and risk-taking. Digital infrastructure and citizen-centered approaches are essential for effective and inclusive reforms, while partnerships with academia, industry, and development agencies broaden expertise and enable tailored local solutions, providing a roadmap for systemic and sustainable innovation across APO member economies.

INTRODUCTION

Background and Rationale

The need for innovation in the public sector is widely recognized by politicians, public managers, and the public. Over the last two decades, public sector innovation has become a key focus of governments around the world, who face the task of solving increasingly challenging policy problems amid growing political and economic uncertainty. The pressure on governments to increase their productivity in response to shrinking budgets and expanding community expectations and obligations has led to greater focus on how the public sector manages change and innovation. This heightened focus has highlighted the need to understand how to build a culture of productivity and innovation in public sector environments (Lewis et al., 2017).

Persistent and emerging societal problems and increasingly complicated public demands are now being dealt with through recourse to many different innovative public sector approaches. The challenges facing governments include social inequality, environmental challenges related to climate change and pollution, the need for greater citizen engagement, and growing pressure on tight public sector budgets to deliver health, education, and welfare services. In response, there has been a growth in public sector innovations, including the development of IT and digital solutions, which are making services more accessible to citizens and creating a more participatory approach to generating solutions. Alongside these innovations, there has been an increase in new organizations and projects (particularly in relation to innovation labs) and the redesign of numerous services and programs.

Governments are pursuing innovations to foster more efficient, higher-value, citizen-centric delivery of public services and improve productivity. Following World War II, private and public institutions began competing and collaborating in new fields of "science-based innovation" (Bruland & Mowery, 2005). Innovation has continued to expand since then, with many nations now regarding innovation as a major source of performance improvement and the means of supporting national prosperity (Ramstad, 2009). The meaning of innovation has expanded beyond an initially narrow focus on science and technology, to include generating solutions to socioeconomic challenges (Edler & Fagerberg, 2017).

In line with these trends, many national governments have placed greater emphasis on innovation, although the term has been used to mean many different things. Some policies are specifically designed to influence innovation, while others have a significant impact on innovation despite being directed at other purposes (Edler & Fagerberg, 2017). Governments have come to play a more encompassing role in innovation policy, supporting coordination and building interaction capabilities between different (public and private) actors (Edler & Fagerberg, 2017). Additionally, the recognition that both the public and private sectors need to be involved has directed attention to the need for governments and public service organizations to become more innovative (Lewis et al., 2017; Lewis, 2021). In short, it is widely recognized that governments need to focus on public sector innovation, that is, on building a productivity and innovation culture in the public sector.

This brief background highlights the need to define "innovation." Simply put, innovation is the introduction of something new. It occurs when invention is applied in practice to improve or refine existing products, services, or processes. The OECD defines public sector innovation as "implementing something novel to a context in order to achieve impact." It involves creating new and better means to deliver public value, shifting from traditional bureaucracy to potentially more agile, experimental approaches. Innovation encompasses new services, processes, and methods, focusing on both internal efficiency and external societal outcomes (OECD, 1997).

Following the OECD's definition, the Asian Productivity Organization (APO, 2018) defines public sector innovation as the adoption of new ideas, processes, or technologies to enhance productivity, service quality, and citizen satisfaction. Public sector innovation focuses on creating public value through collaborative, citizen-centered, and transparent approaches, often driven by innovative leadership and digital transformation (e-government). The APO definition is similar to that of the OECD, which focuses on new ideas and delivering public value and efficiency. However, the APO definition focuses less on experimentation and more on digital transformation and transparency, while highlighting productivity, service quality, and citizen satisfaction as important outcomes.

As this research project focused on the cultivation of a culture of productivity and innovation in the public sector, a system-oriented approach to understanding innovation was adopted. The national innovation system approach emerged in the 1980s and early 1990s (Freeman, 1995; Lundvall, 1992) and was adopted by the OECD in the 1990s (OECD, 1997). This approach can be defined as "an open, evolving and complex system that encompasses relationships between organizations, institutions, and socioeconomic structures which determine the rate and direction of innovation and competence-building emanating from processes of science-based and experience-based learning" (Chaminade et al., 2018, p. 2). Employing an innovation system approach requires considering many different types of innovation, various organizations and how they are interconnected, and broader political, economic, and social structures, as these shape innovation cultures and innovation capacity.

This research project examined innovative practices, processes, and new organizational structures intended to foster public sector productivity and improve public service delivery in APO member economies. Using case studies from each member economy and comparative analysis to synthesize the results, this report presents numerous good-practice examples of innovation programs that can be adapted and transferred to help APO member economies establish better, smarter governance. The results of this project provide key insights into the contextual factors that support public sector innovations.

In their systematic review of the scientific literature on public sector innovation, de Vries et al. (2016) found that public sector innovation can be classified into several types as follows:

1. Process innovations, primarily internal administrative and technological processes (almost half of the types of public sector innovation mentioned in the literature can be classified as process innovations);

2. Product or service innovations (the next most frequently mentioned type of public sector innovation in the literature);

3. Governance innovations, which occur in policy, governance, skills development, and organizational structures; and

4. Conceptual innovations, which reframe the meaning of innovation.

While the first three types cover processes, products and services, and governance innovations, the fourth category concerns how governments define innovation. For example, Lewis and Mikolajczak (2023) analyzed national policy documents to examine how the Australian government has defined innovation over the past four decades. Analysis revealed three different meanings of innovation: innovation as business, innovation as research and development (R&D), and innovation as public sector culture. They found that the public sector innovations that were introduced varied in line with the dominant definition of innovation at the time, demonstrating the importance of broader contextual factors for innovation cultures.

Each of the four types of public sector innovation identified by de Vries et al. (2016) is important to building a culture of productivity and innovation. The case studies from member economies included in this report evidence the introduction of these different types of innovation, particularly process and service innovations.

Research Framework and Methods

Objective

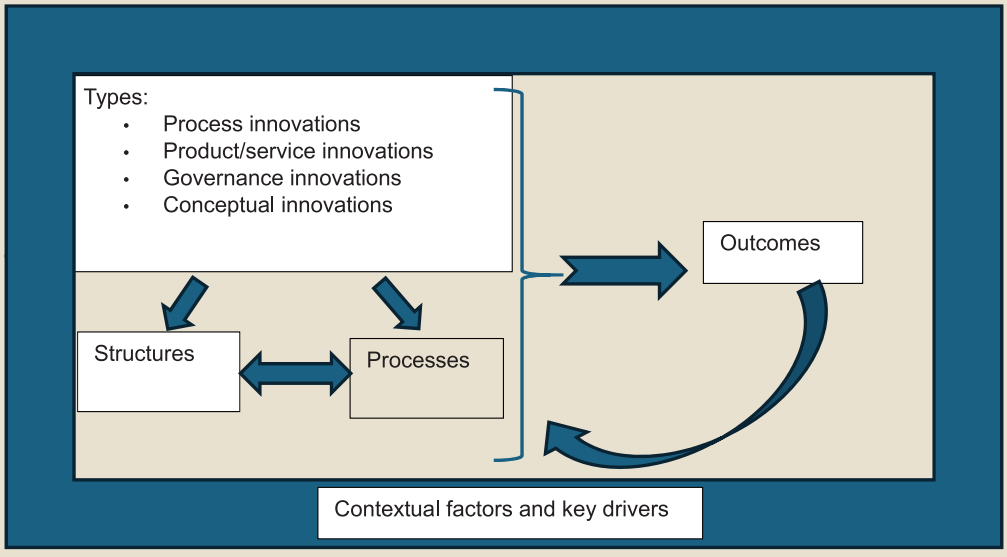
This research project aimed to improve the productivity and innovation culture of public sector environments. Accordingly, the project examined how innovation reforms in 12 APO member economies have affected the productivity and performance of public sector organizations, including the achievement of better, smarter governance.

Public Sector Innovation Framework

A public sector innovation framework was developed to guide the collection of information on innovation case studies from each member economy. The framework links different types of innovation to structures, processes, and outcomes. Figure 1 depicts this framework, showing how types of innovation can be applied through structures (resources and organizations) and processes

FIGURE 1

PUBLIC SECTOR INNOVATION FRAMEWORK.



Source: Author's original diagram based on de Vries et al. (2016), Lewis et al. (2017), and Lewis (2021).

(activities) within a particular setting (national and international), where contextual factors and key drivers shape the production of innovation outcomes. Innovation outcomes feed into future innovation cases. Situated in different environments, the good-practice cases evidence the importance of contextual factors and key drivers in innovation systems, enabling nuanced learning.

Research Questions

This project addressed the following research questions:

1. What innovations (i.e., process, product, service, policy, governance, organizational structure, conceptual) have been introduced in public services in member economies?

2. Which of these innovations demonstrate improvements[a] in productivity and innovation structures (resources and organization), processes (activities), and outcomes (results) for the public sector (e.g., quality, effectiveness, efficiency)?

3. What are the best three examples of improvements in productivity and innovation structures (resources and organization), processes (activities), and outcomes (results) for each APO member economy?

4. Are specific types of innovations (i.e., process, product, service, policy, governance, skills development, organizational structure, conceptual) more frequently associated with improved productivity and innovation?

5. What contextual factors (i.e., economic, geographic, political, social) are associated with improved productivity and innovation?

6. What are the key drivers of improvements for public sector innovations in APO member economies?

7. What is recommended to support building a culture of productivity and innovation in the public sectors of APO member economies?

[a]*Improvements in productivity and innovation are linked to better, smarter governance. There should be a demonstrable improvement in quality, effectiveness, efficiency, or other desired results, as specified by the aims of the innovations.*

Research Methods

This research project employed a variety of methods. The following list clarifies the methods used to answer the seven research questions. Although the policy focus was generally at the national level, examples at regional and municipal levels are also included in the National Experts' reports.

1a. Policy search and review (relevant documents and websites of APO members).

1b. Brief review of the relevant literature to decide which examples to include.

2a. Policy review and analysis (relevant documents and websites of APO members).

2b. Brief review of the relevant literature to decide which examples to include.

3a. Based on the analysis results of Questions 1 and 2, three examples of improved productivity and innovation outcomes were identified for each APO member.

3b. Collection of detailed information on innovation types (Question 4) and context (Question 5).

3c. To obtain further details, one to two interviews were conducted with people involved in creating or delivering the selected innovations.

4a. Policy analysis and comparison across cases within each APO member economy.

5a. Policy analysis and comparison across cases within each APO member economy.

6a. Synthesis of comparison across APO members (Questions 1–5).

6b. Literature review as needed (conducted by Chief Expert).

7a. Synthesis of comparison across APO members.

7b. Literature review as needed (conducted by Chief Expert).

National Reports

Each National Expert produced a report aligned with the questions and methods outlined above. Each National Expert Report provides background information on the innovation context in the member economy; an analysis of innovation results and related outcomes; a description of three good-practice cases from the member economy; an analysis of the innovation types and contextual factors for each good-practice case; a list of key drivers of improvement; and key recommendations drawn from the analysis.

Background Information of the 12 Member Economies

This section provides a summary of the national contexts for public sector innovation in each of the 12 member economies involved in this project:

1. Bangladesh
2. Cambodia
3. India
4. Lao PDR
5. Malaysia
6. Mongolia
7. Nepal
8. Pakistan

9. The Philippines

10. Sri Lanka

11. Turkiye

12. Vietnam

For more detailed information on the national contexts for each member economy included in this project, please refer to the National Expert reports in the appendices.

Contextual Summaries

Bangladesh The national government defines innovation and promotes this definition through innovation policy, digital policy, and multiple programs. At the subnational level, innovation is focused on service delivery that reduces time and/or costs for citizens and can be sustained locally. Innovation policy first appeared in 2002. The Prime Minister's Office is the key policy agency, and the Agency to Innovate (a2i) is the whole-of-government delivery agency for public sector innovation. National-level ministries and divisions and local governments implement innovation programs. International development partners provide technical assistance, financing, and capacity for pilot projects. Core government departments and agencies, public sector innovation partners (e.g., government, donors, universities, think tanks, and consultants), and key individuals in government agencies all support an innovation culture.

Cambodia The royal government defines innovation through digital transformation and administrative efficiency. Innovation policies appear at the national level and are translated into operational plans through three key departments focusing on digital infrastructure, government, and development; telecommunications to support digital government; and administrative reform (i.e., restructuring and human resource modernization). Innovation is led nationally but implemented at the subnational level. As there are no dedicated departments of innovation, the innovation agenda is driven by focused units and partnerships. High-level political leadership, development partners, and private-sector technology firms play key roles in supporting an innovation culture.

India The Innovation Mission is the Indian government's flagship innovation initiative. India's Science, Technology, and Innovation Policy was initiated in 2013. Innovation policies appear at both national and state government levels. National policy sets the vision, mission, funding, and frameworks, while state governments focus on local and sectoral priorities. A government policy think tank provides direction and strategy, and the Office of the Principal Scientific Advisor to the Government of India is responsible for policy on science, technology, and innovation. Multiple national R&D labs also drive innovation. Decentralization is important, with local approaches to problem solving generating innovation, along with migrant family businesses and community sector innovation. Central government ministries, professional and industry-based associations, private sector technology, and mobility companies play key roles.

Lao PDR Innovation in the public sector is not limited to a single definition, document, or ministry, but distributed across strategic documents and legal frameworks at the national level. Important frameworks include those related to the digital economy strategy; the National Governance and Public Administration Reform (NGPAR); and an inclusive development program intended to modernize service delivery, sectoral ICT and e-government strategies, and legislation related to digital transformation. There are some district and local-level coordination initiatives to support

innovation. Innovation is supported by strong political commitment to modernization and ASEAN integration, continuing support from development partners, and a high rate of mobile and internet penetration. The Ministry of Technology and Communications coordinates the innovation ecosystem with key collaborators, namely, development partners, private ICT firms, and civil society.

Malaysia The Reform of Bureaucratic Burdens of 2024 institutionalized public sector innovation in Malaysia. This reform is aligned with Malaysia's digital economy blueprint and the National Digital Department under the Ministry of Digital. Innovation policies are developed at the national level and focus on digital transformation, service modernization, and organizational reform and human capital development in the civil service. At the subnational level, local governments are responsible for implementing the reforms to improve processes, enhance service accessibility, and reduce administrative burdens. The key actors are national government departments and local authorities, private sector and industry bodies, academia and research institutions, and civil society and citizens.

Mongolia Public sector innovation policy is grounded in the State Policy on Innovation (2018–2030) and the National Program on Digital Transformation (2023–2030). Mongolia's public sector innovation ecosystem is guided by these two documents, and the Ministry of Digital Development and Communications leads national coordination. E-Mongolia Academy is the main implementation agency, and there are one-stop service centers at the local level. The key actors are the prime minister's office/cabinet, national ministries, digital implementation agencies, regulatory bodies, local governments, research and academia, and development partners. An innovation culture has been cultivated by a high mobile penetration rate, political commitment that elevated digital transformation as a cross-ministerial priority, and digital literacy training delivered by the National Academy of Governance.

Nepal Public sector innovation policy in Nepal is not explicit but operationalized through periodic plans that emphasize public sector innovation; the National Science, Technology, and Innovation Policy; and the Digital Nepal Framework. Public sector innovation is not assigned to a particular ministry; rather, the Office of the Prime Minister and Council of Ministers oversee governmental management, good governance, and administrative reforms. Multiple ministries and agencies contribute to and are the key actors in public sector innovation. However, the overall system is fragmented and lacks a coordinating entity at the national level. Nevertheless, provincial and local governments have implemented significant innovations, including local digital governance platforms and service delivery tools.

Pakistan Innovation is embedded in multiple policies, including those related to AI, digital policy, economic transformation, and the creative economy. Public sector innovation is supported at the national level by several initiatives to establish technology parks and innovation hubs in certain areas, industry clusters for R&D and technology commercialization, an agritech initiative providing digital services, and a digital authority to drive digital initiatives and reforms. Some provincial governments have initiated strategies aligned with national objectives but adapted to local contexts. Additionally, some ministries have innovation units. The key actors are government agencies, academic and research institutions, development partners and international organizations, and the private sector (i.e., technology firms and startups).

The Philippines The Philippine Innovation Act (2019) defines innovation and stipulates the promotion of an innovation culture. The National Innovation Council is the leading body; it is chaired by the President and composed of cabinet-level officials. It leads the development of the

National Innovation Agenda and Strategy Document, which aligns national innovation efforts. Another critical framework is the Harmonized National R&D Agenda. The Department of Science and Technology embraces a systemic definition of innovation. The scientific community, academia, and the private sector are well represented in innovation discussions and important innovation councils in the Philippines.

Sri Lanka In Sri Lanka, the National Innovation Agency defines different types of innovation and has developed a public sector innovation value chain. The National Digital Economy Strategy plays an important role, and the National Digital Government Policy provides critical support for public sector innovation. While there are no innovation ministries, the Citra Lab, established in 2018, has a mandate to inform national policy and spur grassroots innovation. Apart from national-level strategies and innovation and digital technology initiatives, the nation's university system provides input, as do citizen-led initiatives and development partners. At the core of Sri Lanka's public sector innovation is the Information and Communication Technology Agency and its partners, who spearheaded the development of digital infrastructure. Other key actors include the private sector and its resources, as well as citizens.

Turkiye Public sector innovation is explicitly reflected in Turkiye's national policy documents, including five-year development plans as well as AI strategy, e-government strategy, digital transformation, smart city development, and national cybersecurity plans. Digitalization, efficiency, and sustainability are key axes. National-level policies focus on digital transformation, while local authorities operationalize innovation through smart city initiatives, e-services, and citizen-oriented service design. There are multiple innovation projects at the national level with strong connections to R&D and innovation laboratories established by municipalities. Productivity project awards were established in 2014 to highlight successful public- and private-sector innovation projects.

Vietnam Rather than one public sector innovation policy, several key national strategies define public sector innovation in Vietnam, including the National Digital Transformation Program; Science, Technology, and Innovation Strategy; and a resolution on streamlining the political-administrative apparatus. Three key trends are shaping the public sector: digital transformation and e-government expansion; process and organizational innovation via simplification of administrative procedures, performance measurement, and interagency coordination; and human capital in terms of digital skills among civil servants.

Good-Practice Cases

This section presents one-page summaries of each of the 12 member economies included in this project. For each member economy, there is a one-paragraph summary of each of the three nominated good-practice innovations. This is followed by a table outlining each case's innovation and the primary goal, main success factors, and key impacts of that innovation.

Further details on each of these innovation cases can be found in the National Expert reports provided in the appendices.

Bangladesh

The electronic Government Procurement (e-GP) system has transformed Bangladesh's public procurement from paper-based processes to a competitive, transparent, and digital platform. The e-GP platform was inaugurated in 2011 to secure more transparency, accountability, and

competitiveness in the bidding process. Efforts to establish the e-GP system have shifted the entire procurement and contract management process online. As part of a holistic reform of the country's procurement system, the portal has cut costs; increased accessibility, efficiency, and transparency; and improved the ease of doing business in the public sector.

Electronic mutation (e-Mutation) is widely regarded as a major driver of improvements in administrative structures, work processes, and service outcomes in land management. Through this online system, individuals can apply for and process land mutation (i.e., registration of change of ownership) and related land services (e.g., Porcha or Khatiyan delivery, fee payment, ledgers, maps). Bangladesh's e-Mutation is a practical example of digital public service innovation that reduces citizen transaction costs, increases transparency, and nudges land administration toward data-driven management.

Union Digital Centers (UDCs) act as local one-stop public service hubs. Built under the a2i/Digital Bangladesh agenda, UDCs reshape institutional roles, standardize and digitize service processes, and produce measurable gains in access, speed, transparency and local economic opportunities. They provide a one-stop service via locally anchored access points, standardize and digitize workflows, reduce the opportunity for discretion in face-to-face interaction, and make all (electronic) transactions auditable. UDCs have expanded access to services for rural citizens. Users report higher satisfaction rates and perceive greater responsiveness and lower corruption.

TABLE 1

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN BANGLADESH.

	e-GP	e-Mutation	UDCs
Innovation	Digital process-enabled public procurement system	Digital records and workflows	Digital access points for service delivery
Primary goal	Make public procurement transparent, faster, competitive, and less corrupt	Secure land titleship or mutation, and reduce disputes and rent-seeking	Bring government and basic digital services to rural citizens, and increase inclusion and digital literacy
Main success factors	Legal and policy mandate, political buy-in, interoperable ICT platform, supplier onboarding and training, and integration with finance systems	Accurate data digitization, legal recognition of digital records, local staff training, and linkage with survey and revenue systems	Sustainable model, local entrepreneurs, government service fusion, connectivity, and local awareness
Impacts	• Over 1.5 million tenders processed • Procurement exceeds USD70 billion • Bids per tender increased from 2.5 to 6.2 • Procurement time reduced from 51 days to 29 days • Transaction costs reduced by 12–15% for bidders and procuring entities	• Over 3.1 million e-Mutations processed • 75% of cases completed within 45 days • 30% reduction in new land disputes • More than 78% of applicants satisfied • More than 70% of upazilas fully equipped	• More than 5,000 UDCs established across Bangladesh • Over 700 million citizen visits since its inception • USD2.1 billion in annual savings in terms of time, costs, and visits • 50% of services reached women • More than 1,200 women operators • UDCs provided ICT training to over 2 million citizens

Source: Author's compilation based on the National Expert Report, Bangladesh.
Note: e-GP, electronic Government Procurement; e-Mutation, electronic mutation; UDCs, Union Digital Centers.

Cambodia

Cambodia's e-government platform has consolidated numerous service points (e.g., permits, licenses, and registration) into a single digital entry point. The most significant result is the reduction in the time required for crucial procedures. For example, the time required for business registration, which previously took months and involved multiple physical submissions across various ministries, has been reduced to weeks, or even a few days. The platform has enhanced national productivity by reducing the administrative burden on the private sector. This innovation has improved internal productivity (i.e., staff time reallocation) and external productivity (i.e., private-sector time savings), demonstrating a direct link between process digitization and economic efficiency.

The Digital Land Management System leverages Geographic Information Systems (GIS) and digital record-keeping to streamline the highly complex process of land titling. Digitization reduces human discretion in verification and issuance processes. The system provides secure, tamper-proof digital records of land ownership, thereby minimizing the role of manual intermediaries, who were historically sources of corruption or error. The transparent, sequential tracking of applications has enhanced public confidence in the legal integrity of land titles. The time required for official land surveying, verification, and title issuance has been significantly reduced compared to manual, paper-based processes. Digital records also reduce the time and cost associated with resolving land disputes.

Citizen Feedback Mechanisms, which often include hotlines, online portals, and mobile apps, have introduced a formal, standardized channel for public oversight and interaction. The key result is a measurable increase in accountability. Ministries and subnational administrations are now formally tracked in terms of their resolution rates and response times. Public data, often displayed on dashboards, provide evidence of government responsiveness. The system introduces a level of transparency that deters informal payments and reinforces the public trust necessary for sustained institutional legitimacy. Resolution rates frequently exceed 80% in targeted pilot areas.

TABLE 2

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN CAMBODIA.

	e-Government Platform	Digital Land Management System	Citizen Feedback Mechanisms
Innovation	Digital process integration	Digitization of property titles	Channels for citizen feedback
Primary goal	Improved efficiency and convenience, and streamlining of services	Improved transparency and security, and the protection of property rights	Improved responsiveness, trust, and service quality
Main success factors	Political will and commitment to data interoperability; strong centralized authority	Clear legal mandate and integration of satellite technology; economic diversification rate	Accessibility (e.g., mobile channels) and institutional commitment to resolution; high digital adoption rate
Impacts	60% reduction in the time required for business registration and major permit applications	2.5 million secure, digitized land titles issued since system launch	85% complaint resolution rate recorded across participating subnational administrations within the first 48 h

Source: Author's compilation based on the National Expert Report, Cambodia.

India

Under the e-governance sector, the Common Service Centers (CSCs) scheme has transformed public service delivery by creating a widespread network of digital access points in villages and towns across India. By integrating multiple government departments under a unified organizational framework, CSCs provide a structured platform for delivering services such as certificates, pension schemes, utility payments, and digital financial services. More than 400 services are being delivered by the CSC platform. Multiple engagement models have emerged, with actors at the central, state, and industry levels using CSCs to reach beneficiaries.

Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0) focuses on skill development through a national framework that connects training partners, industries, and assessment agencies. This program standardizes skill training, assessment, and certification processes, with an emphasis on competency-based learning. PMKVY 4.0 improves employability among the youth by streamlining training delivery and ensuring measurable outcomes, addresses sector-specific skill gaps, and fosters a sustainable ecosystem involving both public institutions and private industry participation.

The eSanjeevani telemedicine platform has introduced a digital infrastructure that links hospitals, doctors, and patients across the country, with particular benefits for rural and underserved regions. Through remote consultations, e-prescriptions, and real-time health monitoring, the platform reduces patient travel, eases hospital workloads, and improves healthcare efficiency. The eSanjeevani platform bridges critical gaps in the country's healthcare system. It has revolutionized primary healthcare in India by bringing health services to people in rural areas and remote communities. It has emerged as a catalyst for fostering a thriving digital health ecosystem across the country. The platform is producing tangible improvements in healthcare access, service quality, and public health outcomes.

TABLE 3

SUMMARY OF THREE INNOVATIONS IN INDIA.

	CSCs	PMKVY 4.0	eSanjeevani
Innovation	Digital access points integrating multi-department citizen services	Competency-based national skilling framework with standardized training and assessment	National telemedicine system integrating primary care, specialists, and digital health records
Primary goal	Enhance last-mile service delivery, inclusion, and digital access	Improve employability through quality skill training, certification, and industry linkages	Provide accessible, affordable, and equitable healthcare, especially for rural areas
Main success factors	Strong digital India framework, delivery model based on village-level entrepreneurs, and service convergence	Industry-linked curricula, standardized assessments, real-time monitoring, and outcome-based funding	Scalable platform, hub-and-spoke model, integration with Ayushman Bharat Digital Mission, and strong central leadership
Impacts	• Establishment of 589,000 CSCs • Over 480 million monthly transactions • Over 1.2 million rural jobs • More than 400 integrated services	• Over 2 million candidates trained and certified • Improved employability • Expansion of vocational training ecosystem	• Over 344 million teleconsultations • Reduced hospital load • Improved rural specialist access

Source: Author's compilation based on the National Expert Report, India.
Note: CSCs, Common Service Centers; PMKVY 4.0, Pradhan Mantri Kaushal Vikas Yojana 4.0.

Lao PDR

Launched in August 2023 by the Digital Government Center (DGC) under the Ministry of Technology and Communications (MTC), the Gov-X platform is Lao PDR's first nationwide digital one-stop platform integrating diverse public services. Prior to Gov-X, citizens and businesses accessed public services through fragmented portals and physical offices, resulting in duplication, time delays, and opportunities for administrative discretion. Gov-X introduced a unified digital gateway connecting ministries through shared Application Programming Interfaces (APIs) and a single sign-on authentication system. It has digitized several key services under one application, including digital driving licenses, business registration, social welfare verification, and education access via the Khangpanya e-learning platform.

The Smart One Door Service Center (Smart ODSC) and Public Sector Innovation Facility (PSIF) are interlinked public sector innovations. They form the operational backbone of Lao PDR's decentralization and administrative modernization reforms under the NGPAR framework. The Smart ODSC model simplifies government–citizen interaction by consolidating multiple administrative functions, civil registration, business licensing, taxation, construction permits, and social services into a single window. PSIF is a structured funding mechanism for local innovation. It supports collaborative projects between district administrations, civil society organizations (CSOs), and the private sector to test and scale novel solutions addressing service delivery gaps.

The Service User Feedback Survey (SUFS) was introduced in 2019 under the Governance for Inclusive Development Programme (GIDP). It systematically captures citizens' experiences with public service delivery and integrates findings into local and national planning and budgeting processes. Before SUFS, Lao PDR lacked an institutionalized mechanism to measure user satisfaction or performance beyond administrative outputs. Service performance was evaluated using compliance indicators (e.g., submitted reports) rather than citizen outcomes. SUFS has addressed this gap by creating a structured, evidence-based feedback loop between service users, district administrations, and central ministries.

TABLE 4

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN LAO PDR.

	Gov-X	Smart ODSCs and PSIF	SUFS
Innovation	Digital process integration-platform for one-stop public services	ODSCs for multiple administrative functions and funding mechanisms for local innovation projects (PSIF)	Survey tool to regularly capture citizen feedback and integrate results into planning
Primary goal	Improve efficiency, transparency, and accessibility of core public services via one digital gateway	Simplify and standardize local service delivery, strengthen decentralization, and support local experimentation	Institutionalize citizen voices to improve service quality, accountability, and evidence-based planning
Main success factors	Strong political leadership, dedicated digital government institutions, and emerging interoperable data infrastructure	Policy alignment with decentralization reforms, local ownership, and multi-stakeholder collaboration through PSIF	High-level endorsement by relevant ministries, participatory design, and a direct link between survey data and planning/budget decisions

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	Gov-X	Smart ODSCs and PSIF	SUFS
Impacts	• Simplified access to multiple services (e.g., digital licenses, business registration, welfare verification, and education content), reducing reliance on in-person visits in urban areas	• 44 ODSCs established nationwide, including Smart ODSC pilots with digital tracking • 42 PSIF projects (21,710 direct beneficiaries, 637,176 indirect beneficiaries) • Up to 30% reduction in repeat visits	• Over 2,800 service users surveyed • Increased satisfaction with education services (71% to 83%) and civil registration (65% to 79%) • Findings have been integrated into district socioeconomic plans

Source: Author's compilation based on the National Expert Report, Lao PDR.
Note: ODSC, One Door Service Center; PSIF, Public Sector Innovation Facility; SUFS, Service User Feedback Survey.

Malaysia

The Kulai Fast Lane (KFL) represents a transformation in local government service delivery for accelerating industrial development approvals. The initiative addresses long-standing inefficiencies, introducing an agile, time-bound development pathway that has shifted local regulation from a compliance-driven to an outcome-oriented model. KFL represents front-end coordination that improves submission quality, reduces the need for reworking, and enables the parallel processing of planning, infrastructure, earthworks, and building approvals, significantly increasing administrative efficiency and integrated decision-making. KFL embeds facilitation, transparency, and interagency coordination into routine operations, operationalizing agile regulatory principles under the Reformasi Karenah Birokrasi agenda.

The Express Construction Permit (E10) System is a significant local-level regulatory innovation. It was introduced by the Kulim Municipal Council to accelerate industrial construction and restore investor confidence amid the economic disruption of the COVID-19 period. Facing prolonged permit timelines, stalled investments, and underutilized industrial land, Kulim required a structural response to revive industrial activity and competitiveness. The E10 model was designed to help qualifying industrial projects secure construction permits and commence production within a targeted timeframe of 10 months. E10 represents a major advance in regulatory modernization and institutional agility.

Malaysia's end-to-end Employment Pass (EP) reform is an innovation in human capital governance, digital transformation, and regulatory modernization. Prior to reform, expatriate approval was fragmented across multiple agencies, characterized by siloed systems, manual documentation, inconsistent compliance requirements, and delays. These inefficiencies slowed talent recruitment, increased administrative burden on employers, and weakened Malaysia's competitiveness for high-skilled global talent. End-to-end EP reform uses an integrated, technology-enabled workflow that connects multiple agencies in a single operational ecosystem. By streamlining processes and automating compliance, the reform modernizes expatriate management and exemplifies a shift toward transparent, customer-centric, and digitally enabled public administration.

TABLE 5

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN MALAYSIA.

	KFL	Express Construction Permit System	End-to-End EP Reform
Innovation	Integrated development approvals as a catalyst for industrial productivity	Accelerate the industrial construction permit process	Digital single-window regulatory reform
Primary goal	Faster approvals and investment readiness	Faster construction and industrial revival	Faster expatriate approvals and improved ease of doing business
Main success factors	Leadership commitment and vision, whole-of-government collaboration, process integration and early technical alignment, regulatory flexibility and facilitation culture, institutional capability and digital readiness, and stakeholder confidence and value proposition	Leadership and strategic clarity, agile regulation and whole-of-government collaboration, digital enablement, facilitation and user focus, external pressure, monitoring and accountability, and stakeholder engagement	Strong alignment with national policy mandates, single-window integration, regulatory and documentation standardization, digital enablement, data sharing and connectivity, stakeholder engagement, and whole-of-government approach
Impacts	• Time savings of 8–12 months	• Cycle cut from 30–44 months to 10–12 months	• Reduced delays • Faster talent deployment

Source: Author's compilation based on the National Expert Report, Malaysia.
Note: EP, Employment Pass; KFL, Kulai Fast Lane.

Mongolia

The E-Mongolia platform, operated by the E-Mongolia Academy, integrates over 1,200 public services from 86 agencies through a single web and mobile gateway. Its interoperability layer links core registries, including citizen identification, property, social insurance, and taxation, via secure APIs hosted at the National Data Center. This innovative platform digitizes forms and reengineers the bureaucratic architecture of service delivery, creating straight-through digital workflows. The average processing time for routine services has decreased, while administrative cost savings have increased. Beyond efficiency, E-Mongolia has institutionalized real-time transparency: every transaction leaves a traceable audit trail, dashboards display daily usage statistics, and agencies are ranked in terms of responsiveness.

The 11-11 Citizens' Call Center was established in 2012 to provide a direct, accessible communication channel between citizens and the Government of Mongolia. The initiative responded to two intertwined challenges, namely, widespread dissatisfaction with bureaucratic responsiveness and the absence of a systematic feedback mechanism for citizen petitions. Specifically, the 11-11 Citizens' Call Center initiative introduced a unified hotline, online platform, and mobile app, creating a single national entry point for all complaints, inquiries, and suggestions. Every submission receives a unique identification code and is automatically routed to the appropriate ministry, agency, or local office. The initiative aligned domestic reform with international standards of participatory governance and open data.

Ulaanbaatar One-Stop Service Centers (OSSCs) were launched by the Ulaanbaatar City Governor's Office to address growing frustration over fragmented municipal services amid rapid population growth in Ulaanbaatar. Prior to the introduction of the OSSCs, citizens needed to visit multiple institutions scattered across districts to renew their citizen identification, pay taxes, or secure land certificates. The OSSC program's objective was to consolidate national and municipal service desks into co-located physical centers where citizens could complete most procedures in a single visit. It represents a shift from departmental silos toward citizen-centric design, aligning with the government's "Digital Nation" vision and E-Mongolia's digital expansion.

TABLE 6

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN MONGOLIA.

	E-Mongolia	11-11 Citizens' Call Center	OSSCs
Innovation	Digital process integration	Accountability and citizen feedback	Physical co-location and front-end integration
Primary goal	Efficiency and transparency	Responsiveness and trust	Accessibility and convenience
Main success factors	Political commitment, dedicated institution, legal framework and data interoperability, infrastructure expansion, and citizen inclusion	Political and institutional support, accessibility and equity, technological infrastructure, transparency and open data, professional capacity, and integration with policy processes	Political and institutional support, interagency agreements, citizen-centric design, technology and data linkages, performance monitoring, and public–private co-location
Impacts	• 1.7 million accounts as of December 2024 • 31.7 million completed transactions since launch • 1,172 online services from 62 agencies • USD77 million in citizen cost savings • Typical certificate issuance reduced from 5 working days to 5 min	• Over 600,000 citizens have used the center since its launch • Average annual growth rate of contact volume approximately 22% • Resolution rate has exceeded 90% for six consecutive years • Over 2,000 cases led to policy or administrative corrections	• Approximately 1 million annual transactions • Average waiting time reduced by 61% • 91% citizen satisfaction rate

Source: Author's compilation based on the National Expert Report, Mongolia.
Note: OSSCs, One-Stop Service Centers.

Nepal

The Company Administration Management Information System (CAMIS) is part of Nepal's commitment to digital governance and public service modernization. The initiative has addressed long-standing inefficiencies in the manual company registration process created by paper-based submissions requiring in-person interactions and multiple approval layers. CAMIS is a faceless and paperless model that streamlines company registration processes. It allows online name reservation, the electronic submission of documents of incorporation, digital payment of fees, and real-time tracking of application status. Since its launch, more than 300,000 company registrations

and 34,000 name reservations have been processed, and processing time has been significantly shortened. CAMIS has greatly improved crowd management and enhanced coordination between government agencies.

Nepal's National Identity (NID) System was established to create a unified, secure, and efficient digital identity framework for all citizens. It introduced a centralized biometric database that links citizens to multiple public services through a unique digital identifier. The NID System consolidates responsibilities previously dispersed across agencies handling voter registration, citizenship records, and civil status documentation. The integration of biometric features such as fingerprint and iris data has improved data accuracy, minimized identity fraud, and provided a technical foundation for interoperable e-governance systems. The system has increased enrollment and enhanced inclusion by formally recognizing previously undocumented citizens, especially those in remote and marginalized areas. It has also improved fiscal governance by reducing duplicate records in government payrolls and beneficiary databases.

Another innovation is the introduction of administrative federalism. The Constitution of Nepal (2015) restructured the administrative system from a unitary system into a three-tier federal system comprising 1 federal government, 7 provincial governments, and 753 local governments (Nepal Gazette, 2015). This reorganization was explicitly intended to devolve decision-making and resources closer to citizens, thereby improving the responsiveness, accountability, and effectiveness of public service delivery. This governance innovation restructured state functions and created new administrative units for service delivery, procedurally devolving fiscal and functional authority to the federal units to strengthen proximity between the state and the public. Emphasis is placed on making decisions as close to citizens as possible. Local governments have experienced improvements in planning, budgeting, and project implementation, and enhanced citizen engagement and accessibility through digital means.

TABLE 7

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN NEPAL.

	Company Administration Management Information System	National Identity System	Administrative Federalism
Innovation	Digital process and service automation	Foundational digital identity system	Governance reorganization for devolution
Primary goal	Faster, transparent, and paperless company registration	Secure and unified citizen identification for service delivery	Decentralized, responsive, and accountable governance
Main success factors	Strong Office of the Company Registrar leadership, legal backing for digital transactions, and user-centered design	Constitutional mandate, centralized coordination, and biometric technology	Constitutional reform, enabling legislation, and capacity-building programs

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	Company Administration Management Information System	National Identity System	Administrative Federalism
Impacts	• Over 300,000 company registrations • Approximately 34,000 name reservations • 80% of transactions now require only one approval	• 15 million enrolled citizens • Fraudulent claims eliminated • Annual government savings of NPR4 billion • Over 2,000 cases resulting in policy or administrative corrections	• 753 local governments operational • Local government improvements in planning, budgeting, and implementation • Improved efficiency where responsibilities are clearly devolved and capacity strengthened

Source: Author's compilation based on the National Expert Report, Nepal.

Pakistan

The Raast instant payment system enables real-time peer-to-peer transfers and instant digital payments. The system was designed to create secure and fast digital transactions for all Pakistani individuals, enterprises, and official organizations. It has been a pivotal driver of financial inclusion, helping reduce reliance on cash and enabling smoother digital transactions. The Raast identification (ID) system functions as an easy-to-use identifier through which users access payments using their linked mobile number. As this new payment method uses a modern identification system, users no longer need to manage or transmit complicated bank account numbers or International Bank Account Numbers. Users who register their Raast ID can easily send and receive funds via their mobile number without requiring additional payment information.

The Pakistan Citizen Portal (PCP) is a national e-governance platform developed to provide citizens with a unified interface to register grievances, seek information, and provide feedback about public services. Launched in 2018, the portal links citizens to federal, provincial, and local government departments, offering real-time tracking, escalation mechanisms, and performance dashboards for public officials. Traditional complaint handling in Pakistan was fragmented, paper-intensive, and slow. The PCP was designed to streamline the process, increase transparency, and use citizen feedback as a lever for improving public services and official accountability.

The Ehsaas social protection program utilizes biometric verification and digital platforms for efficient welfare distribution and cash transfers to vulnerable populations. The Ehsaas Program was built on the platform created by the National Database and Registration Authority (NADRA), Pakistan's premier organization responsible for citizen registration, identity management, and database services. NADRA is the backbone of Pakistan's digital identity infrastructure. Its core mission is to maintain a secure, accurate, and accessible citizen identity system, enabling the efficient delivery of public services, social protection programs, and e-governance initiatives. NADRA has supported an advanced digital identity ecosystem in Pakistan. The outcome is a

dramatic reduction in identity fraud (reported at up to 70%). NADRA supports the Ehsaas Program, as well as many other services that have been built on it.

TABLE 8

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN PAKISTAN.

	Raast	Pakistan Citizen Portal	Ehsaas Program
Innovation	Real-time, interoperable payment rails	Real-time citizen feedback system	AI-driven targeting and biometric delivery
Primary goal	Financial inclusion and instant payments	Grievance redressal and accountability	Social protection and poverty alleviation
Main success factors	National infrastructure for innovation and national innovation policies, and the NADRA platform	National commitment to improving citizen satisfaction	National infrastructure for innovation and national innovation policies, NADRA platform, and focus on social protection
Impacts	• Instant, free, and secure transactions combined with high interoperability across all financial institutions • Over 892 million transactions processed	• Government mobile app for citizens to connect with government, raise issues, and make suggestions • Over 892 million transactions processed	• Increase in household income levels post-implementation • Over PKR450 billion disbursed to 15 million households

Source: Author's compilation based on the National Expert Report, Pakistan.
Note: NADRA, National Database and Registration Authority.

The Philippines

The Socio-Economic Research and Data Analytics Centers (SERDACs) are designed to address critical gaps in research, analysis, and policy development for the agriculture, aquatic, and natural resources (AANR) sector. Embedded within major universities and supported by national and regional consortia, these centers harness advanced analytics tools, digital and physical infrastructure, and expert-led training to cultivate a robust, data-driven environment for research and decision-making. As responsive, multilevel hubs with collaborative networks, SERDACs foster interdisciplinary learning, support government agencies and local planners, and promote mainstream evidence-informed solutions for sustainable development. SERDACs are redefining how research capacity, policy relevance, and sectoral innovation are achieved in the Philippine context.

The Socio-Economics Research and Data Analytics Laboratory (SERDAL) at the University of the Philippines Los Baños was conceived as a complementary institutional innovation to the SERDACs, as data-driven decision-making is gaining more traction in agricultural and natural resource development. SERDAL utilizes applied economics and management research infrastructure, expert-led analytics, and targeted training to address complex socioeconomic challenges in the AANR sector. By combining state-of-the-art facilities with a network of specialists and collaborators, SERDAL serves as a hub for commodity analytics research for policy analysis. It is also considered a model for how academic institutions can catalyze AANR development at regional and national scales.

The Development Innovations and Policy Laboratory (DIP Lab) at the University of the Philippines Los Baños is a pioneering policy laboratory dedicated to transforming how research drives public decision-making in the AANR sector. By establishing both a physical and digital hub that integrates advanced policy data tools, multilevel collaborations, and comprehensive capacity-building, DIP Lab reimagines the process of bridging research with policy action. DIP Lab leverages inclusive partnerships, interactive learning platforms, and evidence-driven advocacy to create a replicable model for innovative, adaptive, and participatory policymaking in the Philippines. It is designed to turn robust research evidence into actionable solutions, amplifying its impact across public policy, government R&D, education, and extension services.

TABLE 9

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN THE PHILIPPINES.

	Socio-Economic Research and Data Analytics Centers	Socio-Economics Research and Data Analytics Laboratory	Development Innovations and Policy Laboratory
Innovation	Decentralized data analytics capacity building and research coordination	Socioeconomic and management-focused capacity building and research coordination	Policy analytics and advocacy capacity building and research coordination
Primary goal	Enhanced capacities and locally relevant data analytics practice	Enhanced capacities in socioeconomic and management research	Enhanced capacities in policy analysis and research
Main success factors	Strong public institution support, sustained funding support, geographic reach, and stakeholder buy-in with regional consortia	Strong public institution support, sustained funding support, credibility in agricultural and applied economics, and strategic alignment of organizational research priorities	Strong public institution support, sustained funding support, niche expertise area, stakeholder buy-in, and strong network within and around the policy innovation system
Impacts	• 2,222 researchers trained • 450 clients provided with technical advice services	• 344 researchers trained • Seven working papers on commodity specific analytics • One website/portal	• 470 researchers trained • One policy data portal • Seven policy briefs • 17 infographics • One podcast program • Six policy advocacies supported • 11 agencies served for technical advice to 15 million households

Source: Author's compilation based on the National Expert Report, Philippines.

Sri Lanka

The Sri Lankan government's authorized e-GP platform, the Procurement Management Information System, aims to digitize, standardize, and make more transparent the procurement lifecycle in all public institutions. It addresses inefficiencies in the manual procurement regime (e.g., high transaction costs, information asymmetries, anti-competitive practices, and corruption risks) that have traditionally undermined public value and fiscal discipline in Sri Lanka's procurement function. The system enables end-to-end digital management, including vendor and procuring

entity registration, categorization of goods and services, e-learning for users, bid authoring and publication, bid submission and clarifications, automated and manual bid evaluation, procurement planning, activity tracking, document preparation, and technical specifications.

The State Land Information Management System (e-SLIMS) was created using IT to improve the effectiveness of state land administration. This system is used to input data related to state lands at the level of the Divisional Secretariat. Additionally, it facilitates the processes involved in issuing documents connected to land distribution, collecting revenue, tracking actions on distributed lands, and managing supervision activities through the system. The initiative was launched in 2013 with 40 Divisional Secretariats in the Western Province. By the end of 2017, e-SLIMS had expanded to operate across 332 Divisional Secretariats nationwide. It supports the implementation of essential state land management duties as regulated by applicable laws, directives, and communications, allowing multiple activities to be performed smoothly, precisely, and effectively.

The National Productivity Awards is a government-initiated national competition in Sri Lanka that evaluates organizational performance. The competition is divided into three sectors: the public sector, school sector, and manufacturing and service sector. It aims to encourage the adoption of good practices with a goal of ensuring quality, productivity, and efficiency; enhance national development through harmonizing organizational practices; and identify, recognize, and reward outstanding institutions at the national level. The competition is managed by the National Productivity Secretariat and involves training the judging panel, registration of applicants, submission of documents, initial screening, on-site judging, and finalizing of the findings. It moved to an integrated online system to improve efficiency, reduce paperwork, and increase transparency.

TABLE 10

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN SRI LANKA.

	Procurement Management Information System	e-SLIMS	NPA
Innovation	e-GP platform	Digital e-SLIMSs	Transfer of the NPA for organizational performance to an online system
Primary goal	Efficiency and transparency	Transparency and trust	Efficiency and the reduction of bias
Main success factors	Bureaucratic leadership and training	Merger with the Integrated Treasury Information System (ITMIS), and demand for transparency	Leadership, consistency, and organizational orientation
Impacts	• Reduced service time by approximately nine months	• Enhanced the transparency of and trust in public procurement	• Improved the efficiency of the NPA process • Reduced paper usage

Source: Author's compilation based on the National Expert Report, Sri Lanka.
Note: e-GP, electronic Government Procurement; e-SLIMS, State Land Information Management System; NPA, National Productivity Awards.

Turkiye

Developed by the Ministry of Culture and Tourism of the Republic of Turkiye, the Museum National Information System (MUES) aims to deliver digital transformation in the field of cultural heritage by modernizing institutional operations, improving service quality, enhancing process efficiency, and making performance traceable. In response to pressures related to combating illicit

trafficking, MUES emerged as a strategic imperative to protect over 2 million cultural assets through transparency in public financial management. Its scope covers museology, private museum and collector management, prevention of illicit trafficking, and restoration and conservation services. Integrated modules include Inventory, Laboratory, Commission, Anti-Smuggling, Private Museum & Collector, and Museum Information Systems.

The Traffic Safety Analysis Platform was developed under the Smart Transportation component of the 2020–2023 National Smart Cities Strategy and Action Plan. The project's core objective is to increase smart city technical capacity, contribute to the transformation processes of local administrations, and expand the use of data-driven decision support systems. The project's main purpose is to establish decision support mechanisms to improve traffic safety to reduce loss of life and damage to property, identify security vulnerabilities, and contribute to the implementation of effective measures. It also aims to support the proper planning of investments and ensure the efficient use of public resources.

The National Screening Mammography Reporting System (MM Screening) Project aims to improve the early diagnosis of breast cancer, improve treatment success, and reduce mortality rates, as well as enhance the effectiveness of health services. AI-supported prioritization systems can detect suspicious findings in a shorter time. National screening services have been standardized, processes have been accelerated through an AI-supported reporting infrastructure, and the reliability of results has been improved. The project covers reporting and management through a central platform. All processes are optimized through an AI-supported prioritization system. The time from application to treatment is shorter, and the workload of health personnel is more balanced.

TABLE 11

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN TURKIYE.

	Museum National Information System	Traffic Safety Analysis Platform	National Screening Mammography Reporting System Project
Innovation	National digital registry and analytics platform for cultural heritage	Smart city-oriented innovation based on big-data analytics for traffic safety	AI-supported national screening and reporting for breast cancer detection
Primary goal	Digitize and standardize the management of cultural assets, ensure traceability, and combat illicit trafficking	Reduce traffic accidents and congestion by identifying accident black spots	Improve early diagnosis of breast cancer, standardize screening workflows, and increase the accuracy and speed of reporting
Main success factors	Strong legal and procedural framework, modular architecture, 100% domestic technology, and integration with presidential digital systems	Centralized accident and traffic database, advanced analytical algorithms, and effective coordination between central government and local administrations	AI-supported diagnostic algorithms, standardized clinical protocols, strong data security and governance, and comprehensive training and support for health professionals

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	Museum National Information System	Traffic Safety Analysis Platform	National Screening Mammography Reporting System Project
Impacts	• Over 2 million cultural assets targeted for digitization • Standardization of 140 business processes in cultural heritage management • Time required for analysis reduced from months to days	• Systematic identification of accident black spots • Targeted interventions for infrastructure and enforcement • Improved traffic safety and operational efficiency • Environmental benefits through reduced congestion	• Over 1.5 million mammograms triaged with around 87% AI accuracy • Reporting times accelerated • Prioritization of high-risk cases improved • National coverage of screening services strengthened

Source: Author's compilation based on the National Expert Report, Turkiye.

Vietnam

Da Nang City has consistently ranked among the top provinces in administrative reform and digital transformation in Vietnam. The city's innovation journey began in the early 2010s with the adoption of e-government systems and has since evolved into a comprehensive smart city model integrating governance, economy, and society. The Da Nang Smart City Platform consolidates over 160 digital applications, covering urban management, healthcare, education, transportation, and public feedback. A Citizen Feedback and Participation app allows residents to submit opinions, complaints, or policy suggestions directly to local authorities. The City Data Center integrates data from multiple departments and supports evidence-based policymaking. The city invests heavily in digital literacy and innovation training for public officials via partnerships with universities and tech firms.

Ho Chi Minh City has positioned innovation as a core strategy to improve public management efficiency and citizen well-being. The Smart City Framework has four key pillars: shared data centers, open data, urban simulation systems, and information security. This initiative aims to modernize urban governance through data-driven decision-making. The city established an Intelligent Operations Center integrating data from transport, health, education, and public safety. It processes inputs from over 1,500 cameras across various departments. The Smart Citizen mobile app connects residents with government services, utilities, and feedback channels. Digital tools have been integrated into public schools and hospitals to streamline operations and enhance citizen satisfaction. The One Hospital–One App initiative provides patients with online booking and record-tracking services.

Quang Ninh Province is widely regarded as a national leader in institutional reform and governance innovation. Its reform model emphasizes organizational restructuring, interagency integration, and partnerships with the private sector. Quang Ninh established a centralized Public Administration Service Center, unifying administrative services from multiple departments into one digital and physical interface. The province has leveraged private sector expertise and investment to develop e-government platforms and infrastructure projects, ensuring financial sustainability and technological quality. A rigorous performance evaluation system links departmental outcomes with

leadership accountability. Transparency in performance appraisal has increased motivation and trust among civil servants.

TABLE 12

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN VIETNAM.

	Da Nang City	Ho Chi Minh City	Quang Ninh Province
Innovation	Smart city, digital platforms, and data integration	Data-driven urban management, IOC, and smart citizen services	Institutional reform, PASC, and public–private collaboration
Primary goal	Efficiency, transparency, and citizen engagement	Urban service efficiency, congestion management, and responsiveness	Administrative simplification, competitiveness, and transparency
Main success factors	Strong digital governance vision, integrated platforms, and citizen participation	Data integration, central IOC, smart city architecture, and sectoral innovation in health and education	Institutional restructuring, leadership accountability, and public–private collaboration
Impacts	• Over 160 smart apps • High Digital Transformation Index ranking • Fast public-feedback resolution (70% within a week)	• Over 1,500 camera inputs to IOC • Improved service satisfaction • Expanded digital service uptake	• 90.61% satisfaction rate • Top Public Administration Reform Index and Provincial Competitiveness Index scores nationwide • National model for PASC

Source: Author's compilation based on the National Expert Report, Vietnam.
Note: IOC, Intelligent Operations Center; PASC, Public Administration Service Center.

BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF BANGLADESH

EXECUTIVE SUMMARY

Building a culture of productivity and innovation in the public sector of Bangladesh is essential for sustaining socioeconomic transformation, improving service delivery, and realizing the country's long-term development visions, including Smart Bangladesh Vision 2041 (Pal & Sarker, 2023), the Bangladesh Delta Plan 2100 (General Economics Division, 2018), and the Bangladesh National Productivity Master Plan 2021–2030 (Asian Productivity Organization, 2019). The Government of Bangladesh has undertaken some significant reform initiatives aimed at modernizing public sector institutions, digitizing administrative processes, and fostering a result-oriented innovation culture. These initiatives have focused on incorporating innovation into governance, improving transparency, and bringing service delivery to the doorstep of service seekers. This report examines three critical public sector innovations in Bangladesh: public procurement; land management modernization; and innovations under the Access to Information (a2i) program, subsequently rebranded as the Aspire to Innovate program and later institutionalized through the establishment of the Agency to Innovate. This report emphasizes that electronic Government Procurement (e-GP), digital land record systems (e-Mutation), and a2i-driven citizen-centric service delivery through the establishment of Union Digital Centers (UDCs) have enhanced efficiency, lowered corruption, and improved citizen trust in public institutions. Nevertheless, ongoing challenges include bureaucratic silos, uneven adoption across ministries, capacity gaps, and resistance to digital transitions. Analysis of contextual factors and best practice cases reveals that key success factors include strong political leadership, ICT infrastructure, and citizen engagement mechanisms. These efforts include the expansion of e-government platforms, performance-based planning frameworks, capacity-building programs, and the integration of innovation-facing initiatives, such as a2i's service redesign model, digital service portals, and data-driven decision-making tools. These reforms have contributed to greater transparency, reduced bureaucratic delays, and improved stakeholder access to public services. However, building a sustained culture of productivity and innovation requires more than the adoption of digital tools and techniques. It requires institutionalizing a mindset of continuous improvement, enhancing civil service competencies, strengthening interagency coordination, and embedding accountability mechanisms. Key drivers of improved productivity include visionary leadership, strong commitment, policy coherence, simplified procedures, incentive provisions, human resource development, and organizational learning practices. The alignment of policies such as the ICT Policy, Public Administration Reform Initiatives, and Productivity Strategies has enabled a more unified direction for innovation within government institutions. Moving forward, the public sector must strengthen its focus on process optimization, data governance, evidence-based policymaking, and citizen-centric service design. Moreover, embracing emerging technologies, nurturing collaborative innovation ecosystems, and fostering partnerships with academia and the vibrant private sector are essential to improving productivity. Ultimately, a culture of productivity and innovation will support high-quality

governance, accelerate national competitiveness, and ensure that the public sector can effectively tackle socioeconomic challenges. This report concludes by proposing some short-, medium-, and long-term recommendations for reforms, including institutionalized innovation labs (iLabs), interministerial coordination, capacity building, and the utilization of frontier technologies such as artificial intelligence and blockchain. To become a developed country, it is imperative that Bangladesh build a culture of innovation in public procurement, land administration, and service delivery.

BACKGROUND

Building a culture of productivity and innovation in the public sector of Bangladesh is a long-cherished desire of both the government and people from all walks of life. The need for such a culture is recognized by political actors, policymakers, public servants, Civil Society Organizations (CSOs), NGOs, development partners, and the general public. National government actors (i.e., policy/central agencies) define public sector innovation as an intentional, outcome-focused change in services, processes, institutions, or policies that uses new technologies, models, or rules to make government more citizen-centric, efficient, transparent, and scalable. This language is used across Digital Bangladesh, the National Innovation and Intellectual Property Policy issued in 2018, and government programs that promote measurable impact and scaling (ICT Division, 2019). At the sub-national/local levels (i.e., district, upazila, union level), the definition becomes pragmatic and service-centered, with innovation defined as a new way to deliver or access basic services (e.g., simplified procedures, last-mile access points like Union Digital Centers (UDCs), local business models, mobile/ICT tools) that reduce the time and costs for citizens and can be sustained locally. Local actors emphasize business models, staff capacity, and community outreach (Saleheen, 2015).

A review of policy documents and national plans shows that innovation policy first appeared in Bangladesh's National ICT Policy 2002 (Ministry of Science and Information & Communication Technology, 2002). As a part of the Digital Bangladesh or e-government agenda, the policy was later revised and reissued as the National ICT Policy 2009 (Ministry of Science and Information & Communication Technology, 2009). Public sector innovation goals are embedded in the National Innovation and Intellectual Property Policy 2018 (Ministry of Industries, 2018); National ICT Policy 2018 (ICT Division, 2018); Eighth Five Year Plan (July 2020–June 2025) (General Economics Division, 2020a); Ninth Five Year Plan (July 2025–June 2030); Bangladesh Delta Plan 2100 (General Economics Division, 2018); and Bangladesh National Productivity Master Plan 2021–2030 (Asian Productivity Organization, 2019). Almost all ministries, divisions, and departments include public sector innovation goals in their plans, with linkages to Digital Bangladesh, Vision 2021, and Vision 2041 (Ministry of Industries, 2018).

The Prime Minister's Office (PMO) and Cabinet Division play a key role in piloting and implementing innovation policy and plans in Bangladesh. The Access to Information (a2i) initiative, recently rebranded as Agency to Innovate, is the principal whole-of-government delivery intermediary for public service innovation. It was established under the PMO/Cabinet Division to enable cross-ministry pilots and scale.

Line ministries and regulatory divisions, departments, and units play a significant role in implementing the Digital Bangladesh or e-government agenda. Ministries publish sectoral e-service roadmaps on matters pertaining to education, health, land, and local government, among others.

For procurement innovation, the Central Procurement Technical Unit (CPTU), now the Bangladesh Public Procurement Authority (BPPA) under the Implementation Monitoring and Evaluation Department (IMED), and Ministry of Planning (MoP) implement e-GP using procurement law, rules, and guidelines. The Local Government Engineering Department (LGED) supports rollout through local government institutions (LGIs). LGIs and establishments like union parishads, upazila administrations, and district administrations implement UDCs and local pilots using centrally issued standards and local administrative orders (ICT Division, 2019).

In Bangladesh, a2i is the main national innovation intermediary that incubates, pilots, and scales citizen-centric public service innovations and runs innovation labs (iLabs). It operates with Cabinet Division/ICT Division support and international partners. The Governance Innovation Unit (GIU) is a specialized unit linked to the PMO that focuses on governance reforms and innovation. It promotes experimentation in governance. As part of a major process innovation, the CPTU (now BPPA) designed and now operates the e-GP platform. Additionally, various sectoral innovation cells and project-level labs are dedicated to public sector innovation. In this respect, various ministries and donor-supported projects operate embedded innovation teams (e.g., health ICT cells and land digitization teams), provide funding, and run competitions (e.g., through innovation funds) to support local ideas. In fact, a2i's iLab was explicitly designed to fulfill this function. At the sub-national level, there are fewer formal iLabs. Nevertheless, innovation occurs through UDC networks, local government ICT cells, and pilot projects supported by district administrations or LGED with central technical assistance (Saleheen, 2015).

The key actors (individuals and organizations) in Bangladesh's national innovation system for the public sector can be classified into three categories.

1. Core government actors:
   a. PMO and Cabinet Division: Political leadership, cross-cutting coordination and scale-up decisions, and host/endorse a2i.
   b. a2i: The main innovation intermediary responsible for designing, piloting, and scaling citizen-centric services; runs iLab; and provides programmatic support for UDCs and service redesign.
   c. Department of ICT, Ministry of Posts, Telecommunications and Information Technology: Provide policy or technical leadership on ICT infrastructure and e-government architecture.
   d. CPTU (now BPPA) under IMED, MoP: Procurement policy and operator of e-GP.
   e. LGIs (union parishads, LGED, upazila/district administrations): Implement UDCs, local pilot projects, and frontline delivery models.
   f. Bangladesh Computer Council: Leads and supports activities related to ICT; formulates ICT policies, strategies, and plans; promotes ICT; and provides advisory services.

2. Public sector innovation support and partners:
   a. GIU: Responsible for governance reform and innovation promotion.
   b. Donors and international partners: Entities like UNDP, WB, Department for International Development, UK (Behavioural Insights [BI] Team partnership), and the United States Agency for International Development (USAID), among others, provide finance and advice for a2i and sector projects.
   c. Universities, research centers, think-tanks, and consultants: Provide evaluation, evidence, and design support (e.g., Bangladesh Rural Advancement Committee [BRAC] University research, Bangladesh Civil Service Academy materials).

d. Private sector and social entrepreneurs: Includes UDC operators, IT firms, fin techs (bKash/Nagad) and local entrepreneurs who deliver services and innovate business models.

3. Individual actors:
   a. Typical individual actors include: Policy champions (e.g., senior advisers in PMO and Cabinet Division), a2i project directors, procuring officials at CPTU (now BPPA), Assistant Commissioners (ACs; Land), Upazila Nirbahi Officers, Additional Deputy Commissioners (Education and ICT), Additional Deputy Commissioners (Development and Human Resource Management), Deputy Commissioners (DCs), District ICT Officers, union parishad members (including the chairman and secretary), and local UDC entrepreneurs/operators.

Bangladesh has a clear policy vision and direction to transform Bangladesh into a digital country, namely, the Digital Bangladesh Political Commitment (Vision 2021 → Vision 2041) (General Economics Division, 2020b). Strong political framing since 2009 has created a sustained mandate for ICT in government, raising resources and cross-ministerial coordination for digital initiatives (e.g., UDCs and e-services) (ICT Division, 2019). In this respect, institutional intermediaries and donor partnerships have played a significant role in framing Digital Bangladesh. Alongside a2i, which was initially supported by the UNDP, GIU and donor-backed projects (e.g., WB and UNDP) have provided technical assistance, financing, and capacity for pilots (e.g., e-GP, UDCs, and e-Mutation pilots) (WB Group, 2023). Across Bangladesh, there exists a network of UDCs/local access points. Physical last-mile infrastructure (UDCs in thousands of unions) provides channels to test and scale frontline innovations (Khatun, 2020).

However, various hindering factors are impeding public sector innovation in Bangladesh. Gaps in capacity and human resources are the main hindering factors. Uneven ICT and managerial capacity across ministries and local government slows the adoption and sustainable operation of existing public sector innovation (Cabinet Division, 2023). Other hindering factors include fragmentation and interoperability gaps. Siloed systems, weak data standards, and poor legal recognition have stymied scaling across agencies, although recent policy moves have sought to address this (Ministry of Industries, 2018). Meanwhile, the sustainability of local business models in UDCs remains a challenge. Without clear funding or subsidy models and reliable connectivity, UDCs and pilot programs face revenue or maintenance problems.

Bangladesh's public sector exhibits a mixed culture of productivity and innovation, characterized by both ambitious government-led initiatives and significant systemic challenges. While the Digital Bangladesh and Smart Bangladesh visions have spurred extensive digitalization and introduced innovative tools, ingrained bureaucratic inefficiencies, low accountability, and Bangladesh's colonial legacy frequently hinder progress.

ANALYSIS OF THE RESULTS OF INNOVATIONS AND THEIR LINK TO OUTCOMES

Three Innovations

Public Procurement

Public procurement is one of the most significant areas of government expenditure in Bangladesh, accounting for almost 70% of the Annual Development Programme (WB, 2024). Traditionally, procurement processes were blamed for inefficiency, poor competition, uncertainty, and considerable opportunities for corruption. In response, in 2011, the CPTU introduced the electronic

Government Procurement (e-GP) System with the help of the WB. Today, e-GP covers all government procuring entities (PEs) and is mandatory for all development projects under the Annual Development Programme. More than 1.5 million tenders had been processed through e-GP by 2023, resulting in significant savings in terms of transaction costs and time (Transparency International Bangladesh [TIB], 2023; WB, 2024). Key characteristics of public procurement in Bangladesh are: (a) online end-to-end tendering and bidding; (b) openness of bidder participation, with all information available for public access; (c) greater competition among contractors (TIB, 2023); and (d) linkage with the Ministry of Finance for financial management systems. Public procurement successes have been accompanied by some challenges, including the low technical capacity of small contractors, occasional system crashes, and resistance to change by some agencies.

Land Management

Land management is one of the most contentious aspects of governance in Bangladesh. Land disputes are responsible for over 80% of all civil disputes, attributed to overlapping claims of ownership, inadequate record keeping, and mutation and registration corruption (Ministry of Land [MoL], 2021). In response, the government has implemented several reform initiatives, including the following:

1. Digitization of land records: Through the MoL, millions of land records have been digitized and placed in centralized databases.

2. e-Mutation (online transfer of land ownership): Implemented to restrict direct interaction and bribe opportunities, e-Mutation has already processed over 3 million applications (BI Team, 2020).

3. Geographic Information System (GIS) and blockchain pilots: Pilot projects using blockchain-based security to protect records and GIS-based mapping initiatives have been conducted in regions like Tangail (Rahman, 2023).

4. Land service centers: The government has also set up land service centers with computerized kiosks, increasing access for citizens.

a2i-Driven Innovations

The a2i program, initiated under the PMO, is the flagship of government-led innovation. Funded by UNDP and USAID, a2i rolled out the UDC model, that is, the establishment of one-stop centers in every union parishad (i.e., lowest administrative level in Bangladesh). Over 5,000 UDCs now provide online services, including birth and death registration, mobile banking, job applications, and citizen certificates (UNDP, 2019). Other significant a2i initiatives include: (a) Service Innovation Fund (SIF), which invests in pilot initiatives within ministries to scale up innovative solutions; (b) MyGov platform, establishing one digital platform for citizen feedback, grievance redressal, and service tracking; (c) Digital Service Accelerator, a prototyping lab for rapid testing of government services; and (d) Skills for Employment Lab, which focuses on youth development for new-generation digital jobs. The combined impact of a2i-driven innovations is noteworthy. Indeed, a2i reports that over 200 services have been digitized, reducing the cost of citizen services by over USD2 billion annually (UNDP, 2019). Although Bangladesh has made great strides in establishing digital, open systems to fulfill these functions, institutional silos, uneven ICT infrastructure, and bureaucratic inertia continue to prevent these initiatives from reaching their maximum potential.

Ongoing Issues

Issues in Public Procurement

Although e-GP has ensured transparency, effectiveness, and efficiency in public procurement, several issues remain:

1. Capacity gaps: A significant number of small contractors, as well as local-level PEs, lack the digital literacy and technical capability necessary to utilize e-GP to its best potential (WB, 2024). Training has been provided, but remains insufficient, particularly beyond major towns.

2. Systemic resistance: Various government officials and interest groups who have profited from rent-seeking under traditional paper-based systems have opposed the move toward e-GP.

3. System reliability and coverage: Network failure, server overload, and rural connectivity limitations can undermine the efficiency of e-GP (TIB, 2023). Additionally, while all central agencies have migrated to e-GP, small municipalities and grassroots initiatives lag behind.

4. Market concentration: Despite more transparency, tenders still go to the same few big contractors, with negligible small and medium-sized enterprise (SME) participation (TIB, 2023).

Issues in Land Management

Land reform is the most socially and politically sensitive issue in Bangladesh. Despite efforts toward digitalization, several barriers continue to impact land management:

1. Data fragmentation: Land records are dispersed among different agencies (e.g., sub-registrar offices, land offices, survey directorates), resulting in duplication and inconsistencies. Although legacy records are being gradually incorporated into digital platforms, there are significant mismatches.

2. Corruption and rent-seeking: Even post-e-Mutation, local land officials insist on informal payments to expedite services (Rahman, 2023). Discretionary power within land offices remains high.

3. Legal and institutional gaps: Ancient land laws and contradictory mandates between ministries have impeded the implementation of reforms. In some cases, the validity of digital documents remains questionable in courts.

4. Uneven accessibility to citizens: Most rural citizens are ignorant of digital systems or have no internet access. A low level of digital literacy is restricting adoption.

Issues in a2i-Driven Innovations

The a2i program has been a global model for citizen-centric service delivery. However, sustainability and scaling remain a challenge. Key issues include the following:

1. Dependence on donor support: Much of a2i's success was funded by UNDP, USAID, and the WB. Long-term domestic funding mechanisms have yet to be secured.

2. Uneven uptake across ministries: Some ministries have enthusiastically adopted service iLabs, while others remain resistant. Lack of interministerial coordination reduces the potential for scaling successful pilots.

3. UDC sustainability: A number of UDCs are plagued by staffing deficiencies, unsustainable financing, and inconsistent service quality. Rural areas tend to have weaker internet connectivity, decreasing UDC efficiency.

4. Capacity and mindset barriers: Civil servants have traditionally viewed innovation as an "add-on project" rather than part of their core organizational work culture (UNDP, 2019). Moreover, there is still strong resistance in traditional bureaucratic cultures.

Steps Taken to Solve Issues

Solutions Adopted in Public Procurement

1. e-GP rollout: Under IMED, the CPTU (now BPPA) made e-GP mandatory for all development projects since 2011. Over 1.5 million tenders had been electronically processed by 2023, with improved fair competition and record traceability (WB, 2024).

2. Capacity-building programs: Training for procuring entity officials, contractors, and bidders has been scaled up with WB support. Online tutorials, call centers, and user manuals are in place to facilitate adoption.

3. Integration with financial management systems: e-GP has incorporated the Integrated Budget and Accounting System (iBAS++) for real-time financial monitoring of procurement expenditure.

4. Policy and legal frameworks: e-GP adoption was legally mandated by the Amended Public Procurement Act (PPA), 2006 (BPPA, 2026) and Public Procurement Rules (PPR), 2008 (CPTU, 2008). The CPTU (now BPPA) was mandated to monitor compliance and impose penalties for malpractice.

Solutions Adopted in Land Management

1. Digital land records and Department of Land Records and Survey (DoLRS) initiatives: Over 45 million land records have been scanned and placed in digital repositories. Citizens can now authenticate land ownership through online media, reducing the use of intermediaries.

2. e-Mutation (online transfer of land ownership): More than 3 million online applications have been processed since the nationwide rollout of the e-Mutation system (BI Team, 2020). Citizens receive short message service (SMS) notifications on mutation status, increasing transparency.

3. One-stop shops and service centers: Digital Land Service Centers have been established in many upazilas to provide online services with on-ground facilitation. Mobile apps and call centers support these centers to increase outreach.

4. Policy and legal reforms: The Registration Act and Land Management Manual have been amended to include legal certification for digital records. New guidelines require digital verification of records before registration.

Solutions Adopted in a2i-Driven Innovations

1. UDCs: More than 5,000 UDCs are now operational in all unions. They offer over 200 public and private services, including birth registration and mobile banking (UNDP, 2019). UDCs are run by entrepreneurs, normally women, thereby realizing community-level ownership.

2. SIF: Provides seed funds for ministries for piloting service innovations, with successful pilots scaled across the country. Examples include electronic driving licenses, online university registrations, and electronic agriculture advice systems.

3. MyGov website: A citizen complaint and feedback redress system for 100+ services. Citizens are able to both submit complaints and track the settlement status online.

4. Digital Service Accelerator: A dedicated a2i team for supporting ministries to redesign and digitalize services. This team applies design thinking and rapid prototyping methodologies.

5. Training for government workers: Training provided to the civil service includes courses on innovation, ICT, and citizen-centered service delivery. Innovation is incorporated into government administration training by a2i through involvement with the Bangladesh Public Administration Training Centre (BPATC).

Innovation Outcomes

Outcomes of e-GP (Public Procurement)

The e-GP system has emerged as a procurement reform anchor in the public procurement domain to enhance public sector productivity in Bangladesh. It has made tremendous achievements:

1. The BPPA (2024) press release states that up to 3 May 2023, the e-GP system had processed 686,703 tenders (6,86,703) since its introduction in 2011.

2. Financial volume: More than USD70 billion in procurement has been managed through e-GP since its implementation (TIB, 2023).

3. Cost savings: A WB (2024) impact assessment found that transaction costs dropped by 12–15% for contractors and government agencies.

4. Time efficiency: The implementation of e-GP has shortened the average procurement cycle from 51 days to 29 days.

5. Competition: The number of bids per tender increased from 2.5 in 2011 to 6.2 in 2022 (TIB, 2023).

Outcomes of e-Mutation (Land Management)

Reforms have begun minimizing conflicts and increasing access to services in the spheres of land management in Bangladesh. Key milestones of success include the following:

1. e-Mutation applications: By 2022, over 3.1 million e-Mutation applications were handled online, 75% of which were resolved within 45 days (BI Team, 2020).

2. Record digitization: Over 45 million land records have been scanned and uploaded (MoL, 2021).

3. Dispute reduction: Pilot surveys indicate a 30% reduction in new land-related disputes in e-Mutation districts versus control districts (Rahman, 2023).

4. Citizen satisfaction: Surveys show that 78% of applicants who use e-Mutation reported less corruption and informal payments (BI Team, 2020).

5. Service reach: 70% of upazilas now have functional land service centers with internet access.

Outcomes of UDCs (a2i-Driven Innovation)

The a2i-driven innovation program has generated some of the most tangible citizen-level outcomes in the public sector:

1. UDCs: Over 5,000 centers have been established throughout the country. UDCs have handled over 700 million citizen visits since establishment (UNDP, 2019). Approximately 50% of UDC services are utilized by rural women, indicating inclusiveness.

2. Economic Impact: According to UNDP (2019) estimates, digitized services have saved citizens USD2.1 billion annually in terms of travel costs, time, and unofficial payments. The average cost of service delivery was reduced by 73% compared to traditional means.

3. Digital Services: Over 200 government services are digitalized, including birth registration, university admission, and agricultural advisories. The MyGov platform has redressed over 400,000 grievances, of which 65% have been disposed within the stipulated time period.

4. Capacity building: More than 150,000 civil servants have received training on digital literacy and innovation methods. Over 200 ministries/agencies have been covered by pilot projects under the SIF.

Key Success Factors

Bangladesh's achievements in mainstreaming productivity and innovation in the public sector are not accidental; they have been driven by a variety of key enablers. These vary from political leadership to institutional arrangements, ICT infrastructure, donor cooperation, and the active participation of citizens. Some key success factors include the following:

1. Political leadership and commitment: The PMO has direct oversight of a2i, demonstrating top-level ownership of the innovation reforms, while the Digital Bangladesh (2009–2021) and Smart Bangladesh Vision 2041 agendas provided a unifying vision. Moreover, public statements by national leaders prioritized digital governance in anti-corruption activities and efficiency improvement efforts.

2. Strong legal and policy frameworks: The PPA, 2006 (CPTU, 2006) and PPR, 2008 (CPTU, 2008) ensure transparent procurement systems. ICT Policy 2018 and Digital Strategy 2021 officially mandated the use of digital services among ministries. Additionally, amendments to the Land Management Manual granted legal validity to e-Records and e-Mutation services.

3. Donor and development partnership support: The WB provided funding and technical support in e-GP rollout and capacity building; UNDP and USAID supported a2i in pilot iLabs, UDCs, and scaling digital services; and ADB and bilateral donors invested in ICT backbone development and infrastructure.

4. ICT infrastructure expansion: Nationwide 4G coverage and two submarine internet cables provide additional bandwidth for e-services. The "Broadband for All" policy reduced internet prices, facilitating access in rural regions. Government data centers have facilitated the centralized hosting of e-GP, land records, and MyGov portals.

5. Citizen-centric design: UDCs provide services in rural regions, especially to women and marginalized groups. SMS alerts, mobile apps, and web portals have created multiple points of access for citizens. Meanwhile, citizen charters, redressal platforms for grievances, and open data dashboards have improved accountability.

6. Capacity development of civil servants: Over 150,000 officials have received training in procurement, ICT, and innovation skills, and BPATC incorporated digital governance in its curricula. The SIF facilitated access of mid-level bureaucrats to pilot innovations.

7. Monitoring, evaluation, and rewards: Performance indicators embedded in procurement and land management systems track time, cost, and efficiency. Additionally, continuous surveys of citizen satisfaction are used to inform service redesign. Meanwhile, international awards and accolades (e.g., UN Public Service Award, WB recognition) have reinforced local legitimacy and momentum.

8. Adaptive and incremental approach: Bangladesh adopted an incremental approach, pilot-testing reforms (e.g., e-GP in pilot ministries, e-Mutation in pilot districts) prior to national scaling. This minimized risks, built confidence, and allowed learning from early mistakes.

TABLE 1

SUMMARY OF KEY SUCCESS FACTORS IN THREE INNOVATIONS.

Sector	Political Leadership	Legal/Policy Framework	Donor Support	ICT Infrastructure	Citizen Engagement	Capacity Building	Monitoring and Recognition
Public procurement (e-GP)	Strong PMO and IMED oversight	PPA, 2006 (CPTU, 2006) and PPR, 2008 (CPTU, 2008)	WB	National data centers and secure servers	Open e-GP portal with bidder access	Training for PEs and contractors	Publication of tender data and WB evaluations
Land management (e-Mutation)	MoL reforms endorsed by the Cabinet and UN awards	Land Management Manual,1990; Land Reforms Act, 2023 (Legislative and Parliamentary Affairs Division, 2023); and Registration Act, 1908 (Legislative and Parliamentary Affairs Division, 1908)	ADB and BI Team support	GIS and digital record systems	Digital kiosks and SMS alerts	Land officers trained on e-Mutation	Pilot evaluations and citizen surveys
a2i-driven innovations (UDCs)	Direct PMO supervision	ICT Policy 2018 and Digital Strategy 2021	UNDP and USAID	UDC internet backbone	UDCs, MyGov platform, and grievance portals	Civil servants trained via BPATC	a2i monitoring reports

Source: Compiled by the author.
Note: a2i, Access to Information; BPATC, Bangladesh Public Administration Training Centre; BI Team, Behavioural Insights Team; CPTU, Central Procurement Technical Unit; e-GP, electronic Government Procurement; GIS, Geographic Information System; MoL, Ministry of Land; PEs, procuring entities; PMO, Prime Minister's Office; PPA, Public Procurement Act; PPR, Public Procurement Rules; SMS, short message service; UDCs, Union Digital Centers; USAID, United States Agency for International Aid.

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN BANGLADESH

Case Study 1: e-GP and the Digitization of Public Procurement

Description and Key Improvements in Structures, Processes, and Outcomes

1. Description of the innovation: The introduction of e-GP in Bangladesh is widely regarded as a key driver of improvements across structures, processes, and outcomes in public procurement. The e-GP portal was inaugurated on 2 June 2011, with the goal of improving transparency, accountability, and competitiveness in bidding processes. The e-GP system transformed Bangladesh's public procurement from opaque paper-based processes to a competitive, transparent, and digital platform. All Procuring Agencies (PAs) are required to process tenders in an electronic mode, from advertisement to contract award. Backed by the WB, the project to establish an e-GP portal in Bangladesh is bringing the entire procurement and contract management process online. As part of the holistic reform of the country's procurement system, e-GP has cut costs; increased accessibility, efficiency, and transparency; and improved the ease of doing business in the public sector. The objectives of shifting from traditional paper-based procurement to e-GP included the following:
   a. Increasing transparency and accountability in public procurement;
   b. Improving efficiency and speed of procurement cycles, while reducing administrative delays;
   c. Expanding market access for bidders to ensure more competition with better prices; and
   d. Institutionalizing digital records for auditing, monitoring, and analytics.

2. Structural improvements:
   a. Centralized digital platform: e-GP has replaced fragmented, paper-based procurement units with one unified national system under CPTU (now BPPA), providing a single, trustworthy source for all procurement information.
   b. Standardization of rules and documents: Consistent use of standard bidding documents, guidelines, timelines, and evaluation criteria has reduced variation, discretion, and opportunities for manipulation.
   c. Increased accountability mechanisms: Every action (e.g., tender creation, bid submission, and evaluation) is digitally logged, creating traceability and strengthening institutional oversight by CPTU (now BPPA), ministries, and audit bodies.
   d. Inclusion of more firms: Restructured the market to ensure fairer competition, including SMEs, by removing physical barriers.

3. Process improvements:
   a. Automation of workflow: Everything from bid announcements to submission, evaluation, and awarding of contracts is done online, reducing manual paperwork and human error.
   b. Faster tender cycle: Electronic submission removes delays from couriering, officer availability, or file handling. Additionally, the Evaluation Committee can access tender documents instantly.
   c. Transparency at every step: All tenders, bidder lists, opening results, award notices, and contract details are publicly available. Real-time online notifications reduce information gaps for users.
   d. Reduced physical contact: The innovation has reduced face-to-face interactions, which previously enabled collusion, intimidation, and rent-seeking, thereby strengthening fairness and competition in the procurement process.
   e. Simplified monitoring and reporting: Dashboards allow ministries to monitor spending, delays, cost increases, and project progress.

4. Outcome improvements:
   a. Cost savings: Higher competition among bidders reduces procurement costs, and eliminates expenses for paperwork, printing, transportation, and so on.
   b. Reduced corruption and collusion: Digital auditing and transparency make manipulation less feasible and bidder intimidation at tender offices no longer possible.
   c. Faster project implementation: Quicker procurement cycles lead to earlier project start and completion. They also improve service delivery and infrastructure outcomes.
   d. Increased participation and fairness: Thousands of new bidders have joined the system, with rural firms and small contractors gaining better access to opportunities.
   e. Improved public trust: Open access to procurement data increases confidence in government spending.
   f. Value-for-money: The combination of competition, transparency, and speed has enhanced the efficiency of public expenditure.

Type, Sector, Level of Government, Contextual Factors, Organizations Involved, and Key Actors

1. Type: e-GP is a national, web-based end-to-end public procurement platform that covers the full procurement life cycle (planning → tendering → bid submission → evaluation → contract → contract management). Functions relating to goods, works, services, international competitive tendering, framework agreements, and related procurement modalities can be conducted via e-GP digital workflows. In the tendering process, e-GP uses e-signature or digital signature mechanisms and encrypted e-Tender boxes for bid storage.

2. Sector: e-GP is a cross-sectoral innovation encompassing all public sectors in Bangladesh. It is used across any public procurement covered under the PPA/PPR, including infrastructure (roads, water, and buildings), health, education, ICT, consultancy services, and equipment procurement. The system or portal was designed to be the national procurement gateway for public sector tenderers and was progressively rolled out to all PAs/PEs.

3. Level of government: e-GP is implemented throughout Bangladesh by a single lead agency, namely, the CPTU (now BPPA). This lead agency is a dedicated national unit responsible for e-GP policy, infrastructure, operations, and continuous improvement. Centralized governance significantly reduced disintegration and malpractice in procurement processes. CPTU (now BPPA) must satisfy legal and regulatory requirements in running and implementing the system. PPA/PPR and the latest e-GP guidelines make online procedures binding and reduce legal ambiguity in the procurement process. Adherence to these guidelines is mandatory for all ministries, divisions, departments, corporations, and relevant subordinate offices or agencies of the government. As capacity expanded, rollout was extended to PAs/PEs at the divisional, district, and upazila levels. Accountability and audit links provide built-in audit trails and reporting obligations that connect procurement actions to oversight bodies.

4. Contextual factors
   a. Pre-reform challenges: Prior to reform, procurement was characterized by inefficiency, high transaction costs, collusion, and low bidder participation.
   b. Legal mandate and guidelines: e-GP was introduced under section 65 of the PPA, 2006 and PPR, 2008. Formal e-GP guidelines, revised in 2025 (BPPA, 2025), set the rules for digital procurement. This legal foundation gives e-GP its mandate and legitimacy.

c. Political support: The PMO and MoP are strongly committed to the e-GP project as part of efforts to tackle corruption.
d. Donor and technical support: The WB continues to provide support under Public Procurement Reform Project II (PPRP-II). Other development partners are involved in development and financing of the project, including the construction of the e-GP portal, capacity, and institutional reform.
e. ICT and infrastructure investments: A centralized e-GP data center, helpdesk, training servers, and modules (e.g., tenderers' database and electronic contract management system [e-CMS]) support operations.
f. Infrastructure: Rollout coincided with ICT infrastructure deployment across the nation.

5. Organizations involved: The CPTU (now BPPA) is the single lead implementing agency of e-GP under the supervision of IMED and MoP. As the lead implementing agency, it is responsible for operating e-GP and providing policy support or regulatory mechanisms. Major technical and financial support come from the WB under PPRP. IMED and MoP are the institutional or organizational homes of the CPTU/BPPA and PPRP. As PAs/PEs, all ministries, divisions, departments, corporations, relevant subordinate offices or agencies, and local bodies (e.g., divisions, districts, and upazilas) procure goods, works, or services through this portal. For technical and financial support and reforms, development partners like the WB and other donors are involved in e-GP. Private vendors or system contractors and operation and maintenance partners are also involved in building or maintaining the e-GP portal, as well as the operation of helpdesks and data center services. Additionally, banks, auditors, training providers, trade associations, and CSOs interact with or monitor the system.

6. Key factors:
   a. Legal and policy support: The e-GP's statutory basis is located in PPA/PPR, while the formal e-GP Guidelines, 2025 (BPPA, 2025) embed digital procedures into procurement law.
   b. Centralized, secure platform and modules: Single national portal (eprocure.gov.bd), tenderers' database, e-CMS, audit modules, and integrations (e.g., iBAS++, national identity [NID], electronic Project Management Information System [e-PMIS]) that link procurement to payment or identification systems. These technical building blocks enable traceability and automation.
   c. Digital authentication and data integrity: The use of digital or e-signatures and encrypted tender boxes reduces tampering and ensures bidder authentication.
   d. Capacity building and helpdesk: Widespread training (including tens of thousands trained under projects), a 24/7 helpdesk, and a dedicated training server have helped reduce user errors and onboarding friction.
   e. Institutional stewardship and donor support: The WB and partner projects provided the long-term funding, project management, and monitoring needed to build both technology and institutional processes.
   f. Transparency and data analytics: Public access to tender notices, awards, and searchable data enables monitoring, competition, and data-driven oversight in e-GP.
   g. Continuous modernization and standards: Ongoing technical upgrades in migration toward micro-services, International Organization for Standardization certificates, and added modules keep the system resilient and fit for international tenders.

Key Success Factors: Ideas, Government Structures, Organizations, and Outcomes

1. Ideas:
   a. Clear national vision: e-GP is part of a clear national vision to digitize public procurement for the betterment of the nation and to ensure transparency and fair competition in the tendering process.
   b. Political and policy commitment: There is a strong political and policy commitment to replace paper-based tendering processes in adherence to clear goals and the mandate for reform.
   c. End-to-end online procurement: e-GP has replaced opaque paper-based tendering processes with an end-to-end online procurement system.
   d. Elimination or containment: e-GP was introduced to eliminate or contain existing irregularities and malpractice in public procurement.
   e. Value-for-money: As a core driver of efficiency and integrity, e-GP expedites value-for-money efforts throughout the procurement process.
   f. User-centric time-cost-visit (TCV) focus: An explicit part of the e-GP vision is to reduce the TCVs of system users and sustain and expand this system nationally.

2. Government structures:
   a. Central guardianship (CPTU, now BPPA): A single national body owns, operates, and governs e-GP, with responsibility over both policy and operations. This ensures consistency, clear enforcement, and continuous improvement.
   b. Mandated use across PEs: PEs is required to publish and manage tenders through the e-GP portal for normalized use and expand reach locally or nationally.
   c. Accountability and audit links: Built-in audit trails and reporting obligations connect the procurement actions to oversight bodies.
   d. Legal and regulatory embedding: Existing PPA/PPR and revised e-GP guidelines make online procedures binding and reduce legal ambiguity.

3. Organizations:
   a. Single lead agency (CPTU, now BPPA): As the single lead agency, CPTU (now BPPA) runs the e-GP portal, issues guidelines, and enforces compliance nationwide.
   b. PEs (ministries, divisions, departments, agencies, and local bodies): PEs are widespread and mandated users whose buy-in ensures volume and relevance.
   c. Development partners and donors: The WB and other development partners and donors ensure the long-term financing, technical assistance, and credibility required for designing and rolling out the system.
   d. Private vendors and operation and maintenance providers: Technology contractors and helpdesk operators who built and help maintain the portal.
   e. Auditors and trade associations: External monitors and user groups who used the open data to hold the system to account for and increase competition.
   f. CSO and audit engagement: CSO monitoring and audit access have increased external scrutiny and deterred malpractice.
   g. Donor financial and technical assistance (WB and partners): Donors provided financial and project management support; helped fund development, rollout, and monitoring; and lent their credibility and evaluation capacity.

4. Outcomes:
   a. Large financial savings: Use of e-GP has reduced procurement costs. For instance, the WB estimated that the e-GP resulted in roughly 7% savings compared to paper-based procurement, suggesting savings in FY2021 of approximately USD1.1 billion.
   b. Faster procurement cycles: Average time from invitation to contract signing declined, reportedly dropping from about 100 days in FY2017 to 57 days in FY2021.
   c. Scale of uptake: In FY2021, roughly 80% of public procurement expenditure was processed through the e-GP system, compared to only 2%in 2017 (WB Group, 2023).
   d. Broader market access and competitiveness: Studies and assessments by the WB and transparency/think-tank analyses show increases in the number of bidders and improved competitiveness.
   e. Institutionalization: e-GP guidelines and continuous revisions (e.g., revised guidelines and gazette notices up to 2025) show that the system has been embedded in rulebooks and operating practice.
   f. Wider bidder participation: e-GP has reduced geographic barriers and increased the average number of bidders per tender, raising competition and value-for-money.
   g. Improved public confidence: Visible, searchable procurement records have improved the perceived legitimacy of spending, bolstering public confidence.
   h. Measurable cost savings and economic impact: Independent analysts estimate substantial savings (e.g., WB estimates and macro effects totaling roughly USD1.4 billion in benefits in some studies), which reinforced political and institutional support.
   i. Faster contracting and better project starts: Significant increases in awards delivered within validity periods and shorter procurement cycles have strengthened delivery credibility.

Case Study 2: e-Mutation and the Digitization of Land Management

Description and Key Improvements in Structures, Processes, and Outcomes

1. Description of the innovation: In Bangladesh, e-Mutation, or e-Namjari in Bengali, is widely regarded as a major driver of improvements in administrative structures, work processes, and service outcomes in land management. This online system handles applications for and the processing of land mutation (i.e., registration of change of ownership) and related land services (e.g., Porcha or Khatiyan delivery, fee payment, ledger, and maps). e-Mutation in Bangladesh is a practical example of digital public service innovation that reduces citizen transaction costs, increases transparency, and nudges land administration toward data-driven management. Continued iterative improvements, publication of performance metrics, and provision of targeted support to low-ICT users will deepen the cultural shift toward productivity and innovation in land governance.

   The e-Mutation project was piloted in 2017. It was initially launched in seven selected upazilas and progressively expanded to more upazilas in 2017. Between 2018 and 2021, e-Mutation was gradually scaled up, integrated with UDCs, and initiated the postal delivery of records in many districts. Further refinement occurred in 2024 and 2025, including integrated online payments, improved portal, and mobile app rollout. By 2025, several notices on integrated versions and expanded services were published. The e-Mutation system has been successfully implemented nationwide through the provision of the portal, mobile apps, and integration with local digital centers. Under the MoL, the DoLRS is the sole implementing agency responsible for e-Mutation.

It received technical support from the a2i program and is linked to the broader Digital Bangladesh agenda. However, the potential of e-Mutation can only be realized when it is paired with inclusion measures, capacity building, and efforts to reconcile legacy land records. The introduction of e-Mutation has: (a) significantly reduced TCVs for citizens seeking to update land records and obtain certified copies; (b) minimized fraud, middleman involvement, and corruption by digitizing submission, scans, payment, and audit trails; and (c) improved the accuracy and availability of land records, reducing disputes and supporting formal transactions (e.g., sales and mortgages).

2. Structural improvements:
   a. Centralized and integrated land records: Previously, land records were scattered across upazila land offices, DC offices, and other agencies. Now, e-Mutation integrates these records into a central digital platform, reducing duplication and inconsistencies.
   b. Clear institutional roles and accountability: Digital workflows clearly define responsibilities of ACs (land), Tahsildars, field staff, and verification officers. Every step is time-stamped and traceable, ensuring transparency and reducing discretionary power.
   c. Strengthened governance mechanisms: Performance can now be monitored through dashboards at the district, divisional, and national levels. Supervisors can track pending cases, delays, and bottlenecks in real time.

3. Process improvements:
   a. Digital applications instead of paper-based submissions: Citizens can apply online through the e-Mutation portal or mobile app, reducing the need for office visits.
   b. Automated verification and data sharing: Land records, Khatian/record of rights information, and registration data (via e-Registration) are pulled automatically, reducing the need for manual checking and the chance of errors or manipulation.
   c. Transparent and time-bound workflow: Each step of e-Mutation from submission to hearing and approval follows pre-set workflows. A system time limit (28 days) helps to ensure faster service delivery.
   d. Paperless processing: Digital documents, hearings, notices, and approvals reduce paperwork and eliminate loss of files.
   e. SMS notifications: Service seekers receive updates through SMS notifications at each stage of mutation, enhancing transparency and trust.
   f. Online hearing and virtual case processing: Speeds up case disposal and reduces physical crowding in land offices.

4. Outcome improvements:
   a. Faster service delivery: Average time for mutation has dropped significantly compared to the old manual system. Some upazilas deliver mutation orders within 7–15 days on average.
   b. Reduced TCVs: Field studies and district reports document significant reductions in processing time (e.g., cases completed within days in Tangail, where they previously took weeks or months) and lower out-of-pocket costs for applicants.
   c. Reduced corruption and informal payments: Less face-to-face contact lowers the scope for bribery or discretionary delays. Digitally recorded decisions make tampering more difficult.
   d. Convenience and transparency: Online fee payment, duplicate carbon receipt with quick response codes, and visible application status have reduced opacity and improved trust in the record-updating process.

e. Increased citizen trust and satisfaction: Easier, more transparent and predictable processes have improved public confidence in land administration.
f. Wider coverage and compulsory policy push: BI Team and BRAC research and government reporting show that rollout has occurred across many upazilas, with moves to make mutation via digital channels the standard route for record updates.
g. Improved accuracy of land records: Digital integration catches inconsistencies in records and reduces human error.
h. Better quality of governance and monitoring: Government can analyze trends, identify high-performing upazilas, and detect irregularities quickly. e-Mutation thus enhances overall governance and administrative efficiency.
i. Supports broader Digital Bangladesh initiatives: e-Mutation is linked to e-Registration, e-Khajna (land tax), and the e-Record Room, forming a fully digital land management ecosystem.
j. Reduced role of middlemen: Several evaluations have reported a drop in dependence on brokers because applicants can submit documents digitally and receive records by post.

Type, Sector, Level of Government, Contextual Factors, Organizations Involved, and Key Actors

1. Type: e-Mutation is an e-government service or digital workflow platform that automates the land mutation (Namjari in Bengali) process (i.e., application, verification, notices/hearings, and issuance of mutation orders), replacing largely paper-based/manual procedures.

2. Sector: e-Mutation is situated in land administration/cadastral and land revenue services, including land records, registration, and land tax. The service is squarely situated in the public land management domain.

3. Level of government: At the central level, MoL is responsible for the e-Mutation system and related national policy. The MoL sets rules, national portal, notifications, and forms. At the operational level e-Mutation is implemented and executed at district/upazila/union land offices (Tahsildar/AC of Land and local land offices), where individual e-Mutation cases are processed. The online portal routes applications to the correct local office for action.

4. Contextual factors:
   a. High incidence of land disputes and backlog: Due to widespread land conflicts, efficient and accurate mutation is important for reducing litigation and uncertainty. Scholarship has documented heavy caseloads and systemic problems in manual land management.
   b. Corruption and opacity of traditional processes: Digitization was pushed to reduce face-to-face discretion, broker interference, and irregular payments. Empirical studies of the e-Mutation rollout have highlighted corruption reduction as a primary goal and partial outcome.
   c. Digital Bangladesh/a2i push: National e-governance strategy and the a2i program have supported the development and rollout of land e-services.
   d. Technical enablers and limits: e-Mutation has been enabled by increasing internet/mobile penetration, central land database initiatives, and integration with e-registration/tax systems. At the same time, however, local capacity gaps (e.g., skills and connectivity) and legacy data quality remain constraints.

5. Organizations involved:
   a. MoL: The MoL is involved in policy support, notifications, national portal operation, and oversight.
   b. Local Land Offices: The Union Land Office (Tahshil Office), Upazila Land Office (AC of Land Office), Collector Office (Additional Deputy Commissioner [ADC] of Revenue or DC Office), Divisional Commissioner Office (AC of Revenue) are engaged in case processing, hearings, and approvals.
   c. a2i/PMO: Involved in technical or program support and earlier implementation effort for e-governance projects including land e-services.
   d. Land Reforms Board: The Land Reforms Board is involved in overseeing and implementing government policies related to land and the land modernization system.
   e. DoLRS/ICT vendors: These organizations maintain cadastral maps, databases and the software vendors or government ICT teams that implement and host the portal.
   f. Land Administration Training Centre: The Land Administration Training Centre is engaged in capacity building through land management training, land surveys, land-use planning, and record keeping or updating, and resolving land disputes.
   g. Existing courts, registration authorities, and revenue collection units: These entities directly interact with mutation results where deeds, registrations, and tax assessments depend on up-to-date mutation.
   h. CSOs, academic monitors, and media: These entities act as watchdogs and researchers, and evaluate performance, transparency, and complaints in the mutation process.

6. Key actors:
   a. Applicants and citizens (land owners, buyers, and heirs): Individuals submit scanned documents, track their application online, and receive SMS/portal updates.
   b. Union land offices and upazila land officials (operational officers): As the primary local decisionmakers, these officials conduct local verification, publish notices, run hearings, and recommend/issue mutations.
   c. AC of Land, ADC of Revenue, Collector, Additional Commissioner of Revenue, and Divisional Commissioner (Supervisory Officers): These officials act as higher-level reviewers, responsible for oversight and finalization of some workflows.
   d. Portal/ICT administrators and helpdesk staff: These individuals manage the national portal, payments, tracking, and duplicate carbon receipt generation, and provide technical support.
   e. a2i/PMO program managers, donors, and development partners: These actors helped design e-Mutation rollout, capacity building, and monitoring in pilot districts.
   f. Middlemen (informal actors): Informal actors still exist in some areas of the mutation process. Digitization has reduced but not entirely eliminated the influence of informal actors, who are considered an implementation risk.

Key Success Factors: Ideas, Government Structures, Organizations, Outcomes, Key Actors, and Contextual Factors

1. Ideas:
   a. Citizen-centric service design: e-Mutation has a citizen-centric design that reduces TCVs for applicants. The system has moved from an opaque in-person process to an online, trackable workflow.
   b. Auditability and transparency by design: Time-stamped digital records, dashboards, and SMS updates make actions trackable.

c. Incremental and pragmatic digitization: Implementation started with simpler mutation cases and then expanded; manual fallback routes were maintained during rollout.

2. Government structures:
   a. Central ownership with local-level execution: The MoL provides the national portal, policy, templates, and oversight, while district or upazila land offices operate the workflow.
   b. Political mandate and programmatic backing: The e-Mutation project has clear political sponsorship and commitment, including a2i and PMO support for pilots, funding, and scaling.
   c. Performance monitoring and metrics: Workflows, dashboards, and turnaround time monitoring make performance visible up the chain.

3. Organizations:
   a. MoL: The MoL owns the system, hosts the portal, and sets the rules.
   b. a2i and PMO: a2i and the PMO are responsible for project design, pilot support, capacity building, and scaling assistance.
   c. Local land offices: Union and upazila land offices are involved in operational processing, hearings, and local outreach related to e-Mutation.
   d. ICT vendors, central IT teams, and helpdesk staff: These organizations helped develop the portal, integrate payment, and manage uptime.
   e. CSOs, researchers, and external evaluators: These organizations monitored outcomes and produced the evidence used to refine rollout.

4. Outcomes:
   a. Reduced TCVs for applicants: Multiple empirical studies and TCV analyses have reported faster processing and lower citizen costs.
   b. Improved transparency and reduced scope for bribery: Digital tracking and online payments have constrained discretionary face-to-face interaction.
   c. Recognized best practice, awards, and documented success stories: UN Public Service Award entry and district success stories have been used for scaling.

5. Key actors:
   a. Applicants or land owners: Adoption by users has reduced the leverage of informal intermediaries.
   b. Tahsildar, AC of Land, and District Supervisors: These local champions enforce procedures and reduce arbitrary delays.
   c. a2i program managers and trainers: These actors lead training, transform management, and raise public awareness.
   d. IT administrators and helpdesk staff: Ensured technical reliability and supported citizens during transition.

6. Contextual factors:
   a. Increased stakeholder needs: Backlog, disputes, and costly manual processes in traditional mutation created strong demand for e-Mutation reform.
   b. Internet connectivity and e-government momentum: The e-Mutation project was facilitated by better internet connectivity, growing e-government momentum, and the Digital Bangladesh agenda.
   c. Political will and donor/partner interest: This factor enabled funding, pilots, and knowledge transfer in the e-Mutation initiative.

Case Study 3: UDCs and a2i-Driven Innovation

Description and Key Improvements in Structures, Processes, and Outcomes

1. Description of the innovation: Established under the a2i/Digital Bangladesh agenda, UDCs act as local one-stop public service hubs. UDCs have reshaped institutional roles, standardized digitized service processes, and produced measurable gains in access, speed, transparency, and local economic opportunities.

2. Structural improvements: UDCs provide one-stop services and a locally anchored access point. UDCs consolidate many e-services at the union level. UDCs are hosted by union parishads and run by local entrepreneurs. UDCs are changing the physical and institutional access point for government services. In practice, UDCs follow the public-private-people-partnership (PPPP) model. This unique model formalizes the roles of UDCs as per the standards set by the PMO or a2i. In practice, local union parishads provide the office space, while local entrepreneurs operate service desks. This has resulted in clearer responsibilities and a sustainable operating model. Gender balance and inclusivity are defining features of the UDC design. Many UDCs promote gender balance among operators (i.e., one male and one female entrepreneur) and prioritize services for marginalized rural populations, altering who is served and how services are staffed.

3. Process improvements: UDCs follow standardized and digitized workflows. Paper-based processes in terms of forms, certificates, and registrations are digitized and delivered through UDC interfaces, thereby reducing ad-hoc local practices. As part of process improvements, UDCs are dedicated to reducing TCVs. Many empirical studies have reported significant reductions in trips, processing time, and out-of-pocket costs for citizens using UDCs versus traditional channels. UDCs maintain transparency and traceability in action. Online records, receipts, and electronic payments reduce face-to-face discretion and make all transactions auditable.

4. Outcome improvements: UDCs expand access to services for rural citizens and the general public. Since its inception, UDCs have delivered millions of government services, including documents, applications, and payments, reaching previously underserved rural users. UDCs have strengthened local economic benefits and entrepreneurship. UDC operators (mainly local entrepreneurs) are able to secure their livelihoods, while communities gain ICT access, supporting other economic activities. Moreover, UDCs bolster perceived improvements in governance. UDC users report higher satisfaction and perceive greater responsiveness and lower corruption where UDCs function well.

Type, Sector, Level of Government, Contextual Factors, Organizations Involved, and Key Actors

1. Type: UDCs are local one-stop e-service centers based on the PPPP model. They provide government and, in some cases, private services at the union or rural level through ICT-enabled counters and digital kiosks. The UDC model is a centrally supported but locally operated service model that has brought e-government services to rural doorsteps. This has been achieved through a combination of a policy push from the Digital Bangladesh/a2i program, local entrepreneurship, and partnerships with technical and financial service providers. Although UDCs have expanded access and standardized processes, full sustainability and uniform impact depend on improving connectivity, enhancing the capacity of entrepreneurs and operators, and addressing the legacy of data/service gaps.

2. Sector: UDCs are situated in the dedicated public service delivery or e-government service sector. They provide numerous services, including birth and death registration, various certificates, land and tax information, utility payments, passport applications, e-health, and agriculture information. UDCs also provide private or commercial services, such as printing, e-banking, and training.

3. Level of government: At the central level, a2i and the PMO are the national policy and program owners of the UDCs and provide project design, standards, funding support, and central coordination. Locally, UDCs are hosted at all union parishads, where they serve as a local delivery point. They are operated by local entrepreneurs (one male and one female), who interface with upazila/district offices in providing many services.

4. Contextual factors: UDCs have political and programmatic backing (Digital Bangladesh/a2i) as a service process simplification (SPS) initiative. Strong political sponsorship, funding, and design support from a2i/PMO have enabled the scaling and standardization of UDCs. It is worth noting that UDC connectivity is impacted by uneven infrastructure. Although internet or mobile growth has enabled UDC services, limited bandwidth and electricity remain constraints in some unions. Another key contextual factor behind the success of the UDCs is the existence of monitoring, training, and partnerships. Continued training of operators, monitoring, and donor or NGO support has improved the performance of UDCs and helped sustain almost all the centers.

5. Organizations involved:
   a. PMO/a2i: The PMO and a2i initiative are responsible for project design, standards, funding support, and central coordination.
   b. Local Government Division, Ministry of Local Government, Rural Development and Cooperative, and union parishads: These organizations are involved in providing physical space in union parishad premises, giving UDCs local legitimacy.
   c. UDC operators: Local entrepreneurs provide day-to-day management and service delivery to service seekers.
   d. ICT vendors, banks, mobile operators, NGOs, and development partners (UNDP and USAID): These organizations provided technical integration, payment services, training, and early funding/support.
   e. CSOs and monitoring and research organizations: These organizations conduct external evaluation and transparency checks.

6. Key actors:
   a. Citizens and service users: Rural residents who access government and commercial services locally.
   b. UDC entrepreneurs/operators: Frontline service providers and small business owners are responsible for running centers and providing client support.
   c. a2i program managers and trainers: These actors set standards, provide training, monitor performance, and support scaling.
   d. Union parishad officials and local leaders: These actors host the UDCs, facilitate links to local administration, and ensure community uptake.
   e. Technical partners (ICT vendors, banks, and telecom companies): These actors help integrate the digital payment, identity, and backend services needed for many e-services.

Key Success Factors: Ideas, Government Structures, Organizations, Outcomes, Contextual Factors, and Key Actors

1. Ideas
   a. One-stop service concept: Bundling many government and private services under a single local point has reduced fragmentation and user search costs.
   b. Local entrepreneurship model: Running centers by local operators financially and socially embedded the service in the community.
   c. User-centric TCV focus: The initiative explicitly aims to reduce TCVs for citizens (i.e., convenience first).
   d. PPPP model: Shared responsibility among government, private operators, and communities increased sustainability and buy-in.
   e. Incremental and scalable rollout: Piloting, learning, and gradual expansion allowed improvements before national scale-up.

2. Government structures:
   a. Central sponsorship and mandate: Strong political backing (Digital Bangladesh/PMO level) provided legitimacy, funding, and momentum.
   b. Clear program ownership (a2i/PMO): A central program office coordinated standards, training, and monitoring.
   c. Defined roles across tiers: Union parishads, upazila/district offices, and central agencies have clear responsibilities for hosting, linking services and oversight.
   d. Performance monitoring and targets: Simple metrics and reporting encourage accountability (e.g., service counts, uptime, basic TATs).
   e. Regulatory and payment linkages: Formal connections to revenue, registration, and payment systems enable full transaction completion.

3. Organizations involved:
   a. a2i/PMO: Program design, standards, funding, and supervisory role.
   b. Union parishads: Provide space, legitimacy, and local facilitation.
   c. UDC operators and local entrepreneurs: Daily service delivery, client outreach, and business sustainability.
   d. ICT vendors, banks, and mobile money providers: Technical integration (e.g., portals, payments, identity document verification).
   e. Development partners and NGOs: Seed funding, training, capacity building, and evaluation support.
   f. Local CSOs, media, and researchers: Awareness raising, monitoring, and feedback loops.

4. Outcomes:
   a. Improved access: Services reach villages that previously required travel to upazila or district centers.
   b. Lower TCVs: Measurable reductions in trips, hours spent, and out-of-pocket costs for common transactions.
   c. Local economic benefits: UDCs have generated micro-enterprise incomes for operators and some spillover activity (e.g., printing, training).
   d. Greater transparency and traceability: Digital receipts, online records, and e-payments have reduced face-to-face discretion.
   e. Service diversification: UDCs added private services (e.g., banking, phone top-up, and training), increasing sustainability.

5. Contextual factors:
   a. Higher demand: Rural inhabitants needed easier access to simple but essential services, including certificates, registrations, and payments.
   b. Digital momentum: National push for e-government and rising mobile or internet penetration lowered adoption barriers.
   c. Existing local governance structure: Union parishads offered spaces and a legitimacy channel to host UDCs.
   d. Funding windows and donor interest: Early grants and technical assistance accelerated the piloting of UDCs.
   e. Social capital and community trust: Local entrepreneurs/operators drawn from the community built quick user trust.

6. Key actors:
   a. UDC entrepreneurs/operators: These actors are the hands-on drivers of service quality, hours, and local marketing.
   b. a2i program managers and trainers: These actors set the standards, trained operators, and solved rollout issues.
   c. Union parishad chairman and members, local leaders, and elites: Local officials and elites legitimize the UDCs and help to mobilize users and mediate problems.
   d. Technical support staff and helpdesks: Key staff keep the systems running and ensure that users receive the necessary support.
   e. Early adopters and advocates: Word-of-mouth from satisfied users drove uptake. Women and marginalized users amplified social impact.

TABLE 2

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN BANGLADESH.

Dimension	e-GP	e-Mutation	UDCs
Innovation Type	Digital process-enabled public procurement system (process innovation)	Digital records and workflows (process and system innovation)	Digital access points for service-delivery (organizational innovation)
Primary goal	Make public procurement transparent, faster, competitive, and less corrupt	Secure land titleship or mutation, and reduce disputes and rent-seeking	Bring government and basic digital services to rural citizens, and increase inclusion and digital literacy
Level of government	National/cross-sectoral (centralized platform used by ministries, divisions, and departments)	Union/upazila/district land offices and central land records implemented at the field level	National with local government (union parishad level); nationwide network of local centers
Main success factors	Legal and policy mandate, political buy-in, interoperable ICT platform, supplier onboarding and training, and integration with finance systems	Accurate data digitization, legal recognition of digital records, local staff training, and linkage with survey and revenue systems	Sustainable PPPP model, local entrepreneurs, government service fusion, connectivity, and local awareness

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Dimension	e-GP	e-Mutation	UDCs
Impact	• The BPPA (2024) press release states that up to 3 May 2023, the e-GP system had processed 686,703 tenders (6,86,703) since its introduction in 2011. • The quantity of procurement exceeded USD70 billion (TIB, 2023). • Annual bid-figures include 3.61 in 2012 and 22.39 in 2022 (TIB, 2023). Procurement time is reported as 51 days in 2012 and 29 days in 2015 (GoB, 2016). • Transaction costs reduced by 12–15% for bidders and PEs (WB, 2020).	• By 2022, the MoL reported that it receives about 2.2–2.5 million mutation applications annually, indicating that cumulative e-Mutation cases could exceed 3 million after several years of operation. • 75% of cases were disposed of within 45 days (BI Team, 2020). • 30% reduction in new land disputes was recorded (Rahman, 2023). • More than 78% of applicants are satisfied (BI Team, 2020). • Over 45 million land records were scanned and uploaded (MoL, 2021).	• More than 5,000 UDCs were established across Bangladesh (UNDP, 2019). • More than 700 million citizen visits have been recorded since its inception (UNDP, 2019). • The initiative generated USD2.1 billion in annual TCV savings (UNDP, 2019). • 50% of services reached women. • Over 1,200 women were engaged as operators. • UDCs provided ICT training to over 2 million citizens.

Source: Compiled by the author based on BI Team (2020), BPPA (2024), GoB (2016), MoL (2021), Rahman (2023), TIB (2023), UNDP (2019), and WB (2020).
Note: BI Team, Behavioural Insights Team; e-GP, electronic Government Procurement; GoB, Government of Bangladesh; MoL Ministry of Land; PPPP, public-private-people partnership; TCV, time-cost-visit; TIB, Transparency International Bangladesh; UDCs, Union Digital Centers.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN BANGLADESH

In Bangladesh, the innovations that consistently elevate public sector productivity and foster further innovation are process innovations and citizen-centric service innovations, usually digital or e-governance innovations, closely followed by policy or governance reform and skills development that facilitate the retention or scaling up of these process or service innovations. Although organizational and conceptual innovations are also important, they usually act as enablers rather than immediate productivity drivers (UN, 2017). In Bangladesh, process or service and digital innovations are characterized by whole-of-government reform because (a) these innovations change frontline interactions (where citizens meet government), which directly reduce wasted time and the need for rework, and produce quick wins visible to both citizens and managers; and (b) digital platforms provide opportunities to measure (e.g., TATs, drop-offs, and cost per transaction) and iterate processes, accelerating innovation cycles.

Types of Innovation in Bangladesh

Processes and service (delivery) innovations have the biggest immediate payoff in public sector productivity and innovation in Bangladesh, as the Government of Bangladesh (GoB) is fully committed to bringing public services to the doorstep of every citizen. Major examples include SPS, one-stop service points, a2i-driven digital services platforms, and large-scale e-service rollouts, such as e-Nothi (now d-Nothi) and government service portals. These innovations significantly reduce citizen TCVs, minimize bureaucratic steps, escalate decision-making, and measurably improve access to service providers. Essentially, these innovations improve the productivity of public servants and citizen satisfaction (UN, 2017).

Digital or ICT-oriented service innovations amplify the effect of process reforms in Bangladesh. Digitization converts redesigned processes into a scalable, lower-cost service, such as online applications, automated routing, and digital records, enabling performance monitoring and automation. Significantly, a2i-driven innovation in Bangladesh demonstrates how digital platforms can scale-up one stop services and make process changes durable.

Policy and governance innovations are essential for the sustainability of public sector productivity. Without rule changes, cross-agency coordination mechanisms, or procurement and budget flexibility, successful pilots often fail to scale. Global evidence indicates that governance or coordination reforms unlock the impact of service or process innovation (WB Group, 2018).

Organizational and conceptual innovations are important in Bangladesh but tend to play an indirect role in increasing productivity. New organizational units (e.g., iLabs and digital units), new incentive structures, and conceptual shifts (e.g., user-centered design and data-driven decision-making) create an environment able to sustain process or service innovations. Although such innovations tend to be less visible in short-term productivity gains, they are crucial for long-term institutionalization (Momen & Ferdous, 2023).

Skill development and civil service management are the highest leverage enablers in the improvement of public sector productivity in Bangladesh. Training civil servants in new processes, customer service, data use, and ICT skills both raises productivity and increases the adoption of new practices. Development partners working in Bangladesh, such as the ADB and UNDP, highlight skills and workforce programs as key to technology or productivity gains (ADB, 2023).

TABLE 3

TYPES OF INNOVATION ASSOCIATED WITH IMPROVED PRODUCTIVITY AND INNOVATION IN BANGLADESH IN ORDER OF SIGNIFICANCE.

Serial No.	Types	Priority
01	Process innovations (SPS)	Immediate impact
02	Service innovations (digital or citizen-centric)	Scale-up impact
03	Policy or governance reforms	Enables scaling and sustainability
04	Organizational and conceptual reforms	Institutionalizes change
05	Skills development and civil service management	Maintains gains or targets

Source: Produced by the author based on ADB (2023), Momen and Ferdous (2023), UN (2017), and WB Group (2018).
Note: SPS, service process simplification.

Lessons Learned from Innovations in Bangladesh

1. Start with SPS for high-volume services: Target services with significant citizen contact (e.g., permits, certificates, welfare delivery) and measure before/after effects, TCVs, processing time, error rate, and user satisfaction.

2. Digitize the simplified process: Use modular platforms (e.g., portals, mobile) so that the same backend can serve multiple agencies. Track digital uptake and drop-off points.

3. Fix governance bottlenecks: Update rules that block data sharing or cross-agency workflows and create a small center of excellence (or strengthen an existing one) to coordinate scaling. Use whole-of-government coordination mechanisms (WB Group, 2018).

4. Invest in civil servant skills and change management (e.g., customer service, digital literacy, and data use): Pair training with job-aids and short feedback loops (ADB, 2023).

5. Create lightweight pilots and a rapid evaluation culture: Develop prototypes, run short randomized or quasi-experimental evaluations where feasible, and select for scaling those with measurable productivity gains (WB Group, 2018).

6. Set clear performance metrics: Establish clear performance metrics, such as average processing time, percent of transactions online, cost per service, citizen satisfaction. Routinely publish outcomes and link performance to incentives.

Synthesis of Innovation Types Brief Summary of Innovations and Systematic Gaps

The a2i initiative is the single most visible public innovation initiative in Bangladesh. It has driven the establishment of digital public services, one-stop shops, and iLabs, introducing user-centric service redesign across ministries, divisions, and departments. These initiatives are the backbone of Digital Bangladesh and a primary vehicle for scaling public sector innovation.

Government reform efforts are complemented by frugal social innovation (e.g., BRAC). NGOs create low-cost, high-reach models in areas like health, microfinance, and service logistics that the public sector can adopt or scale through public–private partnerships (PPPs).

However, key systemic gaps remain. Systemic gaps include interoperability/data standards, last-mile connectivity, and institutional incentives in the civil service, and the lack of routes for successful pilots to scale within formal government processes. The WB (2020) and project documents have repeatedly flagged these issues as priorities for the next phase of digital government work.

Final Note on Innovation Types in Bangladesh

Bangladesh provides live examples of innovation in the a2i program's SPS, digital rollout, and initiatives like e-Nothi (e-filing), now d-Nothi (digital filing). These initiatives have produced visible reductions in TCVs and expanded citizen access, demonstrating how process, digital, and capacity building combine to improve productivity. To scale pilot initiatives into system-wide productivity gains, governance reforms and civil service capability should be incorporated as explicit elements of the implementation strategy (UN, 2017). Aligned with many national governments, GoB has increasingly emphasized the importance of innovation for simplifying the

service delivery system in the public sector. To attain this, GoB has formulated policies to accelerate innovation intended to boost public sector productivity. The role of the government in innovation policy has expanded. The government now plays a more encompassing role in supporting coordination and building interaction capabilities between different (public and private) actors (Edler & Fagerberg, 2017). Going forward, GoB needs to place more focus on public sector innovation for building a culture of productivity and innovation in the public sector.

ANALYSIS OF CONTEXTUAL FACTORS

Public sector productivity and innovation in Bangladesh rely on multiple background or contextual factors. Indeed, several economic, geographic, political, and social factors are directly linked to improved public sector productivity and innovation in Bangladesh. Together, strong fiscal space and private sector dynamism, investment in digital platforms and skills, stable and accountable governance, and adaptation to geographic and climate constraints shape how public sector innovations in Bangladesh improve productivity and their scale-up trajectory. Contextual factors highlight the importance of context in shaping the innovative activities in the public sector (Demircioglu & Audretsch, 2024). This section discusses the contextual factors that play a catalytic role in Bangladesh's public sector productivity and innovation.

Economic Factors

In Bangladesh, improved productivity and innovation are strongly influenced by several economic factors, including

1. Focus on sustained GDP growth and macro-economic stability is improving public and private investor confidence.

2. Rapid industrialization led by the ready-made garments, pharmaceuticals, ICT, and agro-processing sectors has generated demand for efficiency and technological upgrading.

3. Expanding digital and physical infrastructure (e.g., broadband connectivity, power supply, roads, ports, and special economic zones) has lowered transaction costs.

4. A large, youthful, and relatively low-cost labor force supports scale, learning, and the adoption of new production methods.

5. The increasing integration of Bangladesh's economy into global value chains and export markets is exposing firms and public institutions to international standards and competitive pressure.

6. Increased public investment in social sectors and infrastructure has strengthened human capital and service delivery capacity.

7. The rise of SMEs, startups, and outsourcing-based digital services has stimulated experimentation and innovation.

8. Access to development finance, remittances and donor-supported programs reduces risk in reform and technology adoption.

9. Gradual financial sector deepening, including mobile financial services, has improved resource allocation and supported entrepreneurial activity across the economy.

Geographic Factors

Improved productivity and innovation are shaped by several geographic contextual factors in Bangladesh, including

1. Bangladesh's strategic location between South and Southeast Asia, which facilitates regional trade and connectivity.

2. Bangladesh's proximity to major international markets via the Bay of Bengal, supporting maritime trade through ports such as Chattogram and Mongla.

3. High population density and rapid urbanization have resulted in agglomeration economies, knowledge spillovers, and efficient labor-market matching in cities like Dhaka and Chattogram.

4. The emergence of industrial clusters and economic corridors has enhanced specialization and supply-chain efficiency.

5. Fertile riverine plains and a deltaic geography support agricultural innovation and agro-processing.

6. When developed, widespread river and transport networks lower logistics costs.

7. The geographic concentration of universities, research institutions, and technology parks encourages collaboration.

8. The expansion of regional growth centers beyond Dhaka is reducing spatial inequality and spreading innovation.

9. Geographic exposure to climate risks has driven adaptive innovations in disaster management, climate-resilient infrastructure, and agricultural technologies.

Political Factors

In Bangladesh, improved productivity and innovation are influenced by several political contextual factors, including

1. Sustained political stability, which enables long-term planning and implementation of development and reform programs.

2. Strong political commitments to national transformation agendas prioritize technology adoption, service modernization, and human capital development.

3. Central leadership support for public sector reforms, e-governance, and innovation initiatives that reduce bureaucratic delays and transaction costs.

4. Policy continuity across electoral cycles, allowing large infrastructure, ICT, and institutional capacity-building projects to mature.

5. The strengthening of governance institutions and regulatory frameworks that improve accountability, rule of law, and investor confidence.

6. Decentralization and administrative reforms that enhance local-level decision-making and service delivery innovation.

7. Political backing for PPPs and foreign investment facilitation, which accelerates technology transfer and productivity gains.

8. Engagement with development partners through politically endorsed reform programs that provide financing, technical assistance, and global best practices to support innovation and efficiency in both the public and private sectors.

Social Factors

Several social contextual factors are associated with improved productivity and innovation in Bangladesh, including

1. A large and youthful population that provides a dynamic labor force and a strong base for skills development.

2. Rising educational attainment and expanding access to secondary, tertiary, and technical education, strengthening Bangladesh's human capital and innovation capacity.

3. Growing social acceptance of digital technologies, freelancing, and entrepreneurship, encouraging experimentation and new business models.

4. The increasing participation of women in education, the workforce, and micro-entrepreneurship, contributing to labor productivity and inclusive innovation.

5. Strong social networks, community organizations, and informal institutions that facilitate knowledge sharing and collective problem-solving.

6. Rapid urbanization and changing social norms are supporting agglomeration effects and exposure to new ideas.

7. Improved health and social protection programs that enhance workforce reliability and performance.

8. A culture of adaptability and resilience, shaped by frequent environmental and economic shocks, which fosters grassroots and frugal innovation.

9. Rising citizen expectations for service quality, transparency, and accountability, creating social pressure for public sector innovation and more efficient service delivery.

Cross-cutting Institutional and Technical Enablers

In Bangladesh, improved productivity and innovation are supported by a set of cross-cutting institutional and technical enablers, including

1. The strengthening of public institutions and administrative systems that enhance transparency, accountability, coordination, and policy implementation;

2. Digital government infrastructure such as national data centers, interoperability platforms, e-GP, and digital identity systems, which reduce transaction costs and improve service efficiency;

3. The reform of rules, procedures, and business processes, which has simplified regulations and encouraged innovation-friendly practices;

4. Capacity building of civil servants and technical professionals through training, ICT skills development, and leadership programs;

5. Availability and use of data, monitoring systems, and performance management frameworks that support evidence-based decision-making;

6. Adoption of modern technologies such as automation, cloud computing, AI, and data analytics in both public administration and productive sectors;

7. Institutional mechanisms for public–private collaboration, iLabs, and pilot projects that allow experimentation and scaling of solutions;

8. Standardized technical frameworks and cyber-security protocols that ensure reliability and trust in digital systems; and

9. Sustained support from development partners providing technical assistance, financing, and global best practices, thereby reinforcing institutional learning and technology adoption across sectors.

KEY DRIVERS OF IMPROVEMENT

Building a culture of productivity and innovation in Bangladesh's public sector requires an integrated approach combining leadership, institutional reform, digitalization, human capital development, and citizen-centric governance. When these drivers work together, they create a sustainable ecosystem for continuous improvement and innovation. This section draws on the latest master plans, government e-governance documents, OECD analysis, and recent commentary to present a list of key drivers of improvement. The simplification of procedures, reduction of bureaucratic red tape, clarification of mandates, and strengthening of accountability mechanisms improve efficiency and enable innovation-friendly environments. The adoption of ICT, automation of workflows, online service delivery, interoperability of government systems, and use of data platforms significantly reduce service delivery time, costs, and corruption risks. Continuous training in digital skills, data analytics, innovation management, and change leadership enhance the ability of civil servants to adopt new approaches and improve productivity. Introduction of key

performance indicators, performance agreements, monitoring dashboards, and outcome-based evaluation links inputs with outputs and outcomes, encouraging efficiency and innovation.

The following are key drivers of improvement:

1. Strong leadership and governance:
   a. Strong political and administrative commitment to innovation;
   b. Innovation-friendly policies and reform-oriented leadership;
   c. A clear long-term national vision aligned with digital transformation;
   d. Decentralized decision-making with accountability; and
   e. Performance-based leadership evaluation.

2. Human capital development:
   a. Continuous training in digital skills, problem-solving, and design thinking;
   b. Merit-based recruitment and promotion systems;
   c. Incentive mechanisms that encourage creativity and initiative;
   d. Opportunities for cross-functional team exposure; and
   e. Leadership development programs for mid-level officers.

3. Performance appraisal:
   a. Outcome-based performance metrics instead of process-only metrics;
   b. Clear key performance indicators for service delivery and citizen satisfaction;
   c. Reward and recognition systems for innovative projects;
   d. Fast-track recognition for high-impact ideas; and
   e. Regular performance review with feedback loops.

4. Digital transformation and technology use:
   a. Expansion of e-governance platforms;
   b. Automation of routine administrative processes;
   c. Use of data analytics for policy and operational decisions;
   d. Development of interoperable government databases; and
   e. Adoption of AI and smart systems where appropriate.

5. SPS:
   a. Reduction of bureaucratic red tape;
   b. Streamlining approval and procurement processes;
   c. Adoption of one-stop service models for citizens;
   d. Development of standard operating procedures with flexibility for innovation; and
   e. Continuous process reengineering.

6. Organizational culture:
   a. Creating a safe environment for experimentation and controlled risk-taking;
   b. Promoting a culture of learning from failure;
   c. Encouraging open communication across hierarchy levels;
   d. Promoting collaboration instead of silo-based working; and
   e. Fostering a citizen-centric mindset.

7. Incentives and motivation:
   a. Financial and nonfinancial innovation awards;
   b. Linking career advancement to impact and innovation;
   c. Public recognition of successful initiatives;
   d. Innovation grants and funding for pilot projects; and
   e. Flexible work models where possible.

8. Collaboration and partnerships:
   a. PPPs for service innovation;
   b. Collaboration with universities and research institutions;
   c. Establishment of iLabs and policy labs;
   d. Engagement with startups and tech communities; and
   e. International knowledge-sharing partnerships.

9. Evidence-based decision-making:
   a. Open data initiatives;
   b. Real-time monitoring dashboards;
   c. Evidence-based policy design;
   d. Feedback-driven service improvement; and
   e. Regular citizen surveys and service audits.

10. Citizen engagement:
   a. Co-creation of services with citizens;
   b. Creation of digital feedback and grievance platforms;
   c. Participatory policy design;
   d. Transparency in service standards; and
   e. Community-based innovation challenges.

RECOMMENDATIONS

Short-Term Recommendations

1. Capacity building: Expand digital literacy training to small contractors, land officials, and rural citizens.

2. Strengthening UDCs: Provide financial subsidies and reliable connectivity to improve sustainability.

3. Monitoring and evaluation: Rollout standardized monitoring and evaluation systems for all innovations.

Medium-Term Recommendations

1. Interministerial coordination: Establish a National Digital Governance Council to merge land, procurement, and citizen data.

2. Strengthening PPPs: Leverage PPP models for ICT infrastructure and blockchain scaling.

3. Increasing domestic funding for a2i: Reduce donor dependency by including innovation budgets in the national budget.

Long-Term Recommendations

1. Adoption of frontier technologies: Increase use of blockchain, AI, and GIS in land and procurement systems.

2. Institutionalization of an innovation culture: Include iLabs across ministries; these should be tied to BPATC or other training.

3. Strengthening regional collaboration: Learn from counterparts in the Asian Productivity Organization economies and share best practices through regional collaboration.

CONCLUSION

Bangladesh's journey in institutionalizing public sector productivity and innovation has seen significant progress in areas of public procurement, land management, and citizen-centric service delivery. The transition of Bangladesh's public sector from paper-based and opaque systems to electronic and transparent systems has saved billions of dollars, reduced corruption, and strengthened citizen trust. The case studies of e-GP, e-Mutation, and UDCs illustrate how top-down leadership, donor coordination, and grassroots engagement can combine to achieve sustainable impact. However, the sustainability of such efforts requires the further institutionalization of innovation culture, stronger interministerial coordination, and greater investment in frontier technologies. If Bangladesh stays on this course, it can position itself not only as a regional leader in digital governance, but also as a global model for citizen-centric innovation. To achieve the goals of Smart Bangladesh, innovation needs to be made part of the DNA of governance. To build a more productive and innovative public sector, Bangladesh must move beyond simply implementing digital technologies to fundamentally reforming institutional and governance structures. Smart Bangladesh centers on smart governance and a smart economy, provides a framework for these deeper transformations. Success will depend on strengthening interagency coordination, enhancing accountability mechanisms, and nurturing a citizen-centric and data-driven approach to governance.

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BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF CAMBODIA

EXECUTIVE SUMMARY

Cambodia has strategically embedded public sector innovation as a core pillar of its national development agenda, primarily guided by the Public Administration Reform Strategy 2021–2030 (Royal Government of Cambodia [RGC], 2021) and the push toward a digital government. This report analyzes the success and drivers of this transformation, focusing on three foundational innovations: the e-government platform, digital land management system, and citizen feedback mechanisms.

The central finding is that these targeted digital and governance innovations have produced demonstrably improved outcomes in efficiency, transparency, and public trust, transforming the relationship between the state and its citizens. The e-government platform has streamlined cross-ministerial workflows, significantly reducing the time and steps required for services like business registration. Concurrently, the digital land management system has leveraged technology to enhance data integrity and security, providing citizens with protected, secure property titles and sharply reducing land disputes, significantly contributing to economic stability. Finally, citizen feedback mechanisms have increased government responsiveness, acting as a crucial accountability tool that drives continuous service quality improvement at the local administrative level.

The success of these cases can be attributed to two key drivers: a strong political mandate and the adoption of a "government as a platform" conceptual model. Consistent, top-down commitment from the RGC was essential to enforcing data interoperability and allocating the resources necessary for complex systems. This mandate enabled the transition from fragmented IT projects to unified, citizen-centric digital services.

To sustain this progress and institutionalize a pervasive culture of innovation, this report suggests actionable recommendations specific to the Cambodian context:

1. Institutionalize accountability: Formally link performance metrics from digital tools (e.g., complaint resolution rates from the citizen feedback mechanisms) to civil service career progression and meritocratic advancement.

2. Establish a national data governance authority: Create a centralized body with a legal mandate to enforce data sharing and security standards across all ministries, maximizing the value and reach of the e-government platform.

3. Invest in frontline digital capacity: Shift investment toward specialized training in data governance and user-centric design for subnational officials who operate and maintain systems like the digital land management system, ensuring long-term sustainability and localized innovation.

4. Prioritize digital inclusion: Develop targeted strategies and resources to bridge the digital literacy and connectivity gaps in rural and vulnerable communities, thereby ensuring that the benefits of digital government are universally accessible and do not inadvertently widen social inequality.

By addressing these institutional and human capital challenges, Cambodia is positioned to leverage its successful initial innovations to build a resilient, productive, and responsive public sector (RGC, 2022).

BACKGROUND

This section outlines the strategic environment for public sector innovation in Cambodia, identifying the key policies, institutions, and contextual factors shaping modernization efforts (Royal Government of Cambodia [RGC], 2021). The analysis is anchored by the context surrounding the three core case studies: the e-government platform, digital land management system, and citizen feedback mechanisms.

Defining Public Sector Innovation and Strategic Context

The RGC defines public sector innovation through two converging goals: digital transformation and administrative efficiency and governance.

- Digital transformation: Innovation is viewed as the introduction and application of digital technologies to transform government processes, enhance service delivery, and promote data interoperability. Digital transformation focuses on moving from simple digitization to fundamental, citizen-centric redesigns of processes (RGC, 2021, 2022).

- Administrative efficiency and governance: Innovation is also defined within the framework of long-running Public Administration Reform, emphasizing improved governance, increased transparency, and accountability to the public. This includes process redesign, streamlined procedures, and anti-corruption measures.

The success of innovations like the e-government platform is measured against these twin goals.

Policy Frameworks and Levels of Government

Innovation policies appear at the highest strategic level and are translated into operational plans primarily through three key national government departments. These policies ensure national efforts, such as the digital land management system, are legally underpinned and resourced. As Table 1 shows, innovation is led nationally, but implementation extends to the subnational level through the National Committee for Sub-National Democratic Development. The operational success of highly localized innovations like the citizen feedback mechanisms is entirely dependent on the adoption, capacity building, and enforcement by provincial and district administrations.

TABLE 1

POLICY FRAMEWORKS AND LEVELS OF GOVERNMENT DRIVING DIGITAL INNOVATION.

Policy Level	Policy Document	Lead Department(s)	Innovation Focus
National strategy	Pentagonal Strategy—Phase I (2023–2028)	MPTC, RGC	Identifies "Digital Pentagonal" as a core pillar; emphasizes digital infrastructure, digital government, and digital economy development
Sectoral strategy	Cambodia Digital Government Policy 2022–2035	MPTC	Provides the comprehensive roadmap for building a functional, efficient, and effective digital government based on principles such as the once-only principle and interoperability
Administrative strategy	Public Administration Reform Strategy Plan 2021–2030	MCS, Public Administration Reform, RGC	Focuses on institutional restructuring, human resource modernization, and strengthening the merit system, thereby creating the necessary institutional capacity for innovation uptake

Source: Adapted from RGC (2021, 2022, 2023).
Note: MCS, Ministry of Civil Service; MPTC, Ministry of Post and Telecommunications; RGC, Royal Government of Cambodia.

Institutional Landscape and Key Actors

The national innovation system for the public sector is a multi-stakeholder network driven by coordination between high-level committees, central ministries, and key development partners.

Dedicated Innovation Units and Departments

Dedicated, large-scale public sector innovation departments are not widely prevalent across all ministries. Rather, focused units and partnerships drive the agenda:

- Ministry of Post and Telecommunications (MPTC): The MPTC is the primary technical lead and responsible for developing the core digital infrastructure and legal frameworks, including the Cambodia Digital Government Policy 2022–2035. It acts as the key enabler for platforms like the e-government platform.

- Ministry of Civil Service (MCS): The MCS focuses on the *people* side of innovation, driving capacity development, talent retention, and institutional reform, all of which are crucial for the long-term success of digital initiatives.

- National Council of Science, Technology and Innovation (NCSTI): Established in 2020, the NCSTI provides cross-sectoral coordination and strategic direction for the national science, technology, and innovation ecosystem.

- UNDP Accelerator Labs (Acc Labs): Operating outside the formal government structure, UNDP Acc Labs in Cambodia play a vital role as a nontraditional partner, focusing on inclusive public service innovation. They provide technical assistance, capacity development, and a protected space for prototyping new solutions, often partnering directly with the MCS to embed new methodologies (UNDP, 2020).

Key Actors in the National Innovation System

The innovation ecosystem is highly dependent on

- High-level political leadership: The Prime Minister and the Office of the Council of Ministers provide the necessary political will and mandates required for major cross-ministerial reforms, including those underpinning the digital land management system.

- Development partners: Organizations like the UNDP, WB, and ADB are crucial in providing technical expertise, funding, and international best practice knowledge to support specific projects.

- Private sector (tech firms): The government actively promotes public–private partnerships, recognizing that private sector expertise and technological agility are necessary to build and maintain sophisticated platforms like the e-government platform.

National Context and Traditions

Innovation efforts are shaped by Cambodia's unique post-conflict history, rapid economic development trajectory, and specific resource conditions. Table 2 summarizes the supportive and hindering factors shaping public sector innovation in Cambodia.

TABLE 2

NATIONAL CONTEXTUAL FACTORS INFLUENCING PUBLIC SECTOR INNOVATION IN CAMBODIA.

Supportive Factors	Impact on Innovation	Link to Case Studies
Strong centralized authority	Allows for rapid policy execution and enforcement of cross-ministerial mandates, overcoming bureaucratic inertia	Essential driver of the e-government platform's interoperability
High digital adoption rate	A young, mobile-first population creates strong market demand for digital services and ensures the high uptake of new platforms	Key factor in the responsiveness and usage of citizen feedback mechanisms
Economic diversification mandate	The RGC's aim to achieve upper-middle-income status by 2030 puts intense pressure on creating an efficient and globally competitive public sector	Provides the core justification for the digital land management system (economic security)
Hindering factors	**Impact on Innovation**	**Link to Case Studies**
Human capital gap	Limited pool of highly skilled technical talent and challenges retaining such talent in the civil service due to competitive private sector wages	Slows the independent maintenance and evolution of complex systems
Risk aversion/ bureaucratic culture	A traditional culture of procedural compliance and risk aversion can inhibit the necessary experimentation required for conceptual innovation	Requires external partners (e.g., UNDP Acc Labs) to create protected spaces for piloting new approaches
Digital divide	Significant disparities in connectivity and digital literacy between urban and remote rural areas	Constrains equitable access to digital services, requiring hybrid service delivery models

Source: Adapted from the RGC (2022, 2023).
Note: RGC, Royal Government of Cambodia; UNDP Acc Labs, UNDP Accelerator Labs.

In summary, Cambodia's public sector innovation is a state-led, strategically planned effort focused on leveraging digital tools to modernize administration and accelerate national development. The success of Cambodia's most impactful public sector innovations, including the e-government platform and digital land management system, is largely dependent on sustained political will, continuous capacity building, and effective collaboration with nongovernment technical partners (Kuldosheva, 2021; RGC, 2022).

ANALYSIS OF THE RESULTS OF INNOVATIONS AND THEIR LINK TO OUTCOMES

This section analyzes how the introduction of three key public sector innovations, namely, the e-government platform, digital land management system, and citizen feedback mechanisms, have measurably contributed to improved productivity, efficiency, and governance outcomes in Cambodia. The analysis directly links the type of innovation (i.e., process, product, or governance) to the achieved results, demonstrating that digitalization is translating into tangible improvements.

Thematic Analysis of Innovation Outcomes

The innovations have collectively delivered improvements across three critical thematic areas of public administration: efficiency, transparency, and access.

Efficiency and Time Reduction (Process Innovation)

Innovation in Cambodia has primarily resulted in substantial time savings by eliminating redundant steps and enabling cross-agency data exchange, addressing a key constraint identified in the pre-reform environment (RGC, 2021).

E-Government Platform A classic process innovation, the e-government platform has consolidated numerous service points (e.g., permits, licenses, and registration) into a single digital entry point. In terms of outcome, the most significant result of this innovation is the reduction in the time required for crucial procedures. For example, business registration, which previously took months involving multiple physical submissions across various ministries (e.g., the Ministry of Commerce and the General Department of Taxation), has been reduced to a matter of weeks or even days. By reducing the administrative burden on the private sector, this innovation has enhanced national productivity. Moreover, the e-government platform improves internal productivity (staff time reallocation) and external productivity (private sector time savings), demonstrating a direct link between process digitization and economic efficiency.

Digital Land Management System This service/product innovation leverages Geographic Information System (GIS) technology and digital record-keeping to streamline the highly complex process of land titling. In terms of outcomes, the time required for official land surveying, verification, and title issuance has been significantly accelerated compared to manual, paper-based processes. Furthermore, digital records reduce the time and cost associated with resolving land disputes, as the source data are secure and traceable. Regarding its link to productivity, the reduction in manual processing time frees up administrative resources and accelerates the formalization of property rights, which is fundamental to capital accumulation and private sector investment (RGC, 2021).

Transparency and Accountability (Governance Innovation)

The adoption of digital systems has been intentionally linked to broader governance goals, directly impacting public trust and reducing opportunities for corruption.

Citizen Feedback Mechanisms Categorized as governance innovation, these tools often include hotlines, online portals, and mobile apps. Citizen feedback mechanisms introduce a formal, standardized channel for public oversight and interaction. In terms of outcomes, the key result is a measurable increase in accountability. Ministries and subnational administrations are now formally tracked on their resolution rates and response times. Public data, often displayed on dashboards, provide evidence of government responsiveness. Regarding its link to transparency, by making the complaint and resolution process visible and standardizing the bureaucratic response, citizen feedback mechanisms introduced a level of transparency that deters informal payments and reinforces the public trust necessary for sustained institutional legitimacy. Resolution rates frequently exceed 80% in targeted pilot areas, demonstrating tangible institutional commitment (Asian Productivity Organization, 2025).

Digital Land Management System Digitization reduces human discretion in verification and issuance processes. In terms of outcomes, the digital land management system provides secure, tamper-proof digital records of land ownership, thereby minimizing the role of manual intermediaries, who were historically sources of corruption or error. The transparent, sequential tracking of applications builds public confidence in the legal integrity of land titles.

Access and Inclusivity (Service Innovation)

Innovations have been designed to expand the reach of government services beyond central administrative hubs, fostering greater inclusivity.

E-Government Platform By providing services online, the e-government platform addresses geographic constraints, allowing citizens and businesses to interact with central ministries from anywhere in Cambodia. In terms of outcomes, the physical transaction costs (e.g., travel, time, and expenses) for citizens, especially those in remote provinces, have been drastically reduced, enhancing equity in service delivery.

Citizen Feedback Mechanisms These tools are often accessible via mobile phones, the most widespread form of technology in Cambodia. In terms of outcomes, the high accessibility of these mechanisms ensures that citizens who lack high digital literacy or access to specialized computers can still provide feedback and demand accountability. Therefore, this innovation is helping to democratize the feedback channel and increase participation across socioeconomic groups.

Linkage to Productivity and Innovation Structures

These innovations are not merely technological, but have structurally improved the capacity for future productivity and innovation:

- Data interoperability: The foundation of the e-government platform is shared data standards. This structural change ensures that once input, data can be shared across agencies without replication. This not only increases efficiency today but builds the structural capacity necessary to introduce new integrated services tomorrow (UNDP, 2020).

- Capacity building: The rollout of digital systems has necessitated targeted capacity development within the MCS and key line ministries. This focused investment in specialized human capital (e.g., GIS experts for land management) is an institutional outcome, improving the government's ability to maintain and evolve its services independently.

- Shift to user-centric design: The success of the citizen feedback mechanisms has influenced a conceptual shift among public administrators toward seeing citizens as customers or partners. This change in organizational culture is a crucial innovation structure, setting a precedent for all new services to be designed around user needs and feedback, thereby driving continuous improvement in public productivity.

In conclusion, Cambodia's public sector innovation efforts have delivered measurable returns in terms of efficiency gains and governance improvements. The three cases illustrate a strategic focus on digital tools as drivers of systemic change, moving beyond simple digitalization to foster a more productive, transparent, and responsive administrative environment (RGC, 2022).

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATIONS IN CAMBODIA

Table 3 summarizes the innovation type, primary goal, level of government, main success factor, and key impact of the three innovation cases (e-government platform, digital land management system, and citizen feedback mechanisms).

TABLE 3

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN CAMBODIA.

Dimension	E-Government Platform	Digital Land Management System	Citizen Feedback Mechanisms
Innovation type	Digital process integration	Digital service/product	Accountability and citizen feedback
Primary goal	Efficiency and convenience, and streamlining services	Transparency and security, and protecting property rights	Responsiveness and trust, and improving service quality
Level of government	National/cross-sector (interministerial)	National with subnational implementation	Subnational/municipal (local administration)
Main success factor	Political will and commitment to data interoperability	Clear legal mandate and integration of satellite technology	Accessibility (e.g., mobile channels) and institutional commitment to resolution
Impact	60% reduction in time required for business registration and major permit applications (illustrative)	2.5 million secure, digitized land titles issued since system launch (illustrative)	85% complaint resolution rate recorded across participating subnational administrations within the first 48 hours (illustrative)

Source: Compiled by the author based on data from the MCS (2025); Ministry of Land Management, Urban Planning and Construction (2025); and RGC (2022).
Note: MCS, Ministry of Civil Service; MPTC, Ministry of Post and Telecommunications.

Case Study 1: The E-Government Platform

Innovation

The e-government platform is a sophisticated digital process integration system designed to streamline and centralize the provision of public services across multiple national ministries and agencies in Cambodia. Its core feature is the Single Window approach, which allows citizens and businesses to submit applications, supporting documents, and payments online, eliminating the need for repeated physical visits and submissions to different departmental offices. The platform mandates data interoperability among participating ministries (e.g., Ministry of Commerce, General Department of Taxation, and Ministry of Labor).

Key Contextual Factors and Drivers

The platform's success is directly attributable to strong political commitment and strategic technological decisions:

- Political will and legal mandate (driver): High-level political backing (as detailed in the Cambodia Digital Government Policy 2022–2035) (RGC, 2022). was essential to compel notoriously siloed ministries to share data and standardize their backend processes.

- Once-only principle (driver): The adoption of the once-only principle, whereby citizens are only required to submit a piece of information once, served as the operational driver for the required technical innovation in data sharing and interoperability.

- High mobile penetration (factor): The high rate of mobile and internet usage in Cambodia provided a ready-made channel for citizens and businesses to adopt the online system quickly, thereby ensuring the relevance and accessibility of the innovation.

Link to Improvements and Outcomes

The e-government platform has produced quantifiable improvements in productivity and efficiency structures:

- Improved efficiency (process outcome): The most significant outcome of the e-government platform is the drastically reduced turnaround time for high-volume services, such as business registration. Procedures that previously took several weeks, often accompanied by long queues and travel, are now completed digitally within a matter of days. This accelerates private sector entry and enhances national productivity.

- Enhanced transparency (governance outcome): Digital processing and automated tracking through the platform provide an auditable trail, reducing opportunities for human discretion and informal payments. This is a direct measure against corruption and significantly increases public trust in the service delivery process.

- Innovation structure outcome: The platform has served as a foundational innovation, forcing the creation of shared data standards and technical protocols across government. This established infrastructure is a new, sustainable asset making subsequent digital innovations faster and cheaper to deploy.

Case Study 2: Digital Land Management System

Innovation

The digital land management system is a comprehensive service/product innovation focused on creating secure, reliable, and legally traceable land titles and cadastral records. The innovation integrates GIS technology, satellite imagery, and secure digital record-keeping to replace the outdated, paper-based system, which was vulnerable to loss, fraud, and disputes. The digital land management system ensures every parcel of land is precisely mapped and digitally registered to a clear owner.

Key Contextual Factors and Drivers

The innovation was driven by the urgent need for economic stability and property rights security:

- Economic stability mandate (driver): Land security is paramount to Cambodia's economic development. The political imperative to formalize property rights and reduce debilitating land disputes provided the necessary political momentum and budgetary commitment for this large-scale technical overhaul.

- Technological integration (driver): The system's success is driven by the strategic integration of advanced mapping technologies (e.g., GIS and satellite technology), which provide an objective, indisputable source of truth for property boundaries, minimizing human intervention and error.

- Public trust (factor): Gaining citizen buy-in was crucial. Extensive public awareness campaigns and a clear legal process were required to build trust in the security and legal validity of the new digital title, ensuring citizens adopted the product and abandoned the old system.

Link to Improvements and Outcomes

This innovation has delivered fundamental governance and economic benefits:

- Enhanced security and transparency (product outcome): The system provides citizens with a secure, easily verifiable digital title that is protected against tampering and loss. This is a superior public product that unlocks capital (enabling mortgages and investment) and provides legal certainty, demonstrably reducing the rate and severity of land disputes.

- Improved productivity (process outcome): The time and costs associated with issuing, verifying, and transferring land titles have been drastically reduced due to the elimination of manual searches and verification processes. This has boosted efficiency within the Ministry of Land Management and increased the speed of transactions in the private sector.

- Innovation structure outcome: The system has mandated the development of specialized human capital within the Ministry of Land Management (e.g., GIS experts and data scientists). This investment in capacity building ensures the system's long-term sustainability and the ability of the Cambodian civil service to manage complex technological assets.

Case Study 3: Citizen Feedback Mechanisms

Innovation

Citizen feedback mechanisms are a suite of governance and conceptual innovations that formalize and standardize channels for citizens to submit complaints, requests for information, or service ratings to subnational and national government agencies. These mechanisms typically include dedicated mobile applications, web portals, and centralized hotlines, all feeding into a centralized tracking and resolution system.

Key Contextual Factors and Drivers

The innovation is rooted in the drive for administrative reform and public accountability:

- Accountability mandate (driver): This innovation is primarily driven by the institutional commitment to accountability and anti-corruption. By making government responsiveness measurable and public, the mechanisms exert a constant pressure on public servants to perform to a certain level.

- Accessibility (driver): The key technological choice was to prioritize mobile accessibility. Given the high prevalence of mobile phone usage in Cambodia, providing app- or SMS-based reporting channels ensures that the mechanism is inclusive and usable by the majority of the population, including those in rural areas.

- Organizational commitment (factor): Success depends less on the technology and more on the institutional willingness of subnational administrations to receive, track, and ultimately resolve complaints. This requires clear operational protocols and senior leadership buy-in.

Link to Improvements and Outcomes

This innovation has yielded significant improvements in public trust and administrative responsiveness:

- Improved responsiveness (governance outcome): The mechanisms have introduced a measurable improvement in accountability. Data show that subnational administrations utilizing the system frequently achieve high complaint resolution rates (often above 80%) within standardized timeframes. This is a direct measure of improved administrative performance and productivity.

- Conceptual innovation outcome: The system has fundamentally changed the relationship between the government and citizens, shifting power toward greater public oversight. It is facilitating the establishment of a user-centric culture, where the public service is continually assessed and corrected by its end-users, driving perpetual service quality improvement.

- Innovation structure outcome: Centralized data gathered on complaints (i.e., what services fail, where they fail, and why) are a powerful analytical tool. These data provide the government with a precise, evidence-based map of systemic weaknesses, allowing for targeted future reforms and better resource allocation.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN CAMBODIA

The public sector innovations introduced in Cambodia are best categorized using a multidimensional typology, as they rarely fit into a single category. By analyzing the e-government platform, digital land management system, and citizen feedback mechanisms through the lens of innovation type, this report demonstrates the breadth of Cambodia's modernization efforts.

Categorization of Cambodian Innovations

As Table 4 shows, based on the research questions, the three primary innovations exemplify three distinct, yet interconnected, types of public sector innovation (Brown & Osborne, 2005).

TABLE 4

THEORETICAL CATEGORIZATION OF PUBLIC SECTOR INNOVATIONS IN CAMBODIA.

Innovation Case	Primary Innovation Type	Secondary Innovation Type	Focus of the Change
E-government platform	Process innovation	Service innovation	Streamlining the internal production and delivery workflow
Digital land management system	Service/product innovation	Process innovation	Creating a new, secure legal output (digital land title)
Citizen feedback mechanisms	Governance innovation	Conceptual innovation	Changing the power dynamic between state and citizen

Source: Adapted from Brown and Osborne (2005); data compiled by the author in 2025.

Detailed Analysis of Innovation Types

Process Innovation: E-Government Platform

The e-government platform is fundamentally a process innovation. It focuses on changes in the internal procedures and routines used by the RGC to deliver services.

- Change mechanism: The innovation forced ministries (e.g., Ministry of Commerce, General Department of Taxation, Ministry of Labor) to standardize their data fields and workflows to ensure they could communicate and share data seamlessly. This shift from sequential, paper-based, siloed processes to parallel, digital, integrated processes is the essence of process innovation.

- Outcome: This innovation resulted in improved productivity through internal efficiency. It has reduced the time civil servants spend on manual data entry and verification, enabled the reallocation of resources to higher-value tasks, and drastically lowered the transaction costs for citizens and businesses.

Service/Product Innovation: Digital Land Management

The digital land management system primarily represents a service/product innovation. This system creates a fundamentally new output, namely, a highly secure, traceable, and legally validated digital land title and cadastral record (UNDP, 2020).

- Change mechanism: The innovation introduces a new technology (e.g., GIS mapping, satellite imagery, and digital authentication) to produce a tangible public good (i.e., the land title) that is significantly superior to the old, paper-based title in terms of security, legal standing, and resistance to fraud.

- Outcome: The improved security and integrity of land records stabilize property rights, constituting a core public product. This outcome drives greater citizen confidence, encourages long-term investment, and reduces the social cost associated with land disputes, directly linking the innovation to macroeconomic stability.

Governance and Conceptual Innovation: Citizen Feedback Mechanisms

The citizen feedback mechanisms represent a deep-seated governance innovation, often underpinned by a shift in conceptual thinking. This type of innovation changes the roles and responsibilities of public administration and its relationship with the community (Bason, 2010).

- Governance change mechanism: By creating formal, accessible, and public channels for complaints and feedback, the innovation fundamentally shifts power dynamics. The citizen moves from being a passive recipient of services to an active co-producer and quality control agent. This changes the organizational structure by imposing a new external pressure for responsiveness on local and national administrations.

- Conceptual change mechanism: Citizen feedback mechanisms embody a conceptual innovation by shifting the fundamental idea of governance toward customer-centricity and transparency. The assumption changes from the government knowing best to the government being obliged to listen and respond publicly, thus embedding accountability as a core operational concept.

- Outcome: This innovation has resulted in increased institutional legitimacy and trust. Citizen feedback mechanisms demonstrate a practical commitment to solving problems identified by the public, ensuring that the government's digital modernization is aligned with citizen needs.

Integrated Innovation

It is crucial to recognize that the success of complex systems like the e-government platform requires an integrated approach. While primarily a process innovation, its delivery to citizens of a faster, more convenient way to get a permit is perceived as a service innovation. Similarly, the digital land management system relies on process innovations (i.e., standardized data collection) to ensure its integrity (RGC, 2021). The interrelationship among these innovation types is the hallmark of a mature digital government strategy.

ANALYSIS OF CONTEXTUAL FACTORS

The success and challenges associated with the e-government platform, digital land management system, and citizen feedback mechanisms are fundamentally shaped by Cambodia's unique political, economic, and socio-geographic context (UNDP, 2020). The following analysis identifies the most significant contextual factors that have driven or constrained public sector innovation.

Political and Governance Context: The Mandate for Change

The political environment provided the highest driver for innovation, ensuring the necessary authority and resource commitment:

- Strong centralized political will (driver): The RGC provided a top-down impetus for digitalization through high-level strategic plans, notably the Cambodia Digital Government Policy 2022–2035 (RGC, 2022). This political mandate was essential in enforcing compliance across notoriously siloed ministries, which was critical for enabling the data interoperability of the e-government platform.

- Decentralization reform (driver): The ongoing process of subnational democratic development acts as a structural driver of accountability. The devolution of service responsibilities to the provincial and district levels created the institutional *need* for centralized oversight and citizen participation tools, directly leading to the adoption and success of the citizen feedback mechanisms.

Economic and Resource Context: Infrastructure and Capacity

Resource availability and human capital conditions created both enabling factors and significant constraints:

- Sustained digital infrastructure investment (driver): High mobile penetration and government investment in national fiber-optic networks were essential enabling factors. This technological foundation ensures that sophisticated systems like the digital land management system are accessible across different geographic regions, mitigating physical barriers to service delivery.

- Digital human capital gap (constraint): Despite political will, a critical constraint is the limited pool of highly specialized technical personnel (e.g., data scientists and cybersecurity experts) in the civil service. This gap forces the government to rely on external development partners, slowing the independent scaling and evolution of systems like the e-government platform and impacting the long-term sustainability of the innovations (RGC, 2021).

Socio-Geographic Context: Equity and Trust

Innovation must respond to Cambodia's demographic realities and evolving societal expectations:

- Rising citizen demand for transparency (driver): A young, digitally literate population, coupled with efforts to improve governance, has created a public expectation for greater transparency and accountability. This social demand is the direct impetus behind the uptake and effectiveness of the citizen feedback mechanisms, which provide a formal channel for citizen oversight.

- Geographic and literacy divide (constraint): The concentration of connectivity and digital literacy in urban centers is an obstacle to ensuring equity. While digital services are efficient, their design must mitigate the risk of widening the gap for rural and marginalized communities. This requires hybrid service models (e.g., assisted access points) to ensure the benefits of digital land management are universally accessible.

- Trust in new systems (success factor): For innovations involving sensitive data, such as the digital land management system, the public's initial trust in the security and legal validity of the digital record is a key success factor. This trust must be actively built through awareness campaigns alongside technical deployment (RGC, 2022).

KEY DRIVERS OF IMPROVEMENT

The demonstrated improvements in productivity and innovation structures within Cambodia's public sector are rooted in a strategic combination of political direction, institutional reform, and targeted technological integration. These key drivers distinguish Cambodia's success from general global trends:

1. Strong and consistent political mandate: The RGC provided a clear, top-down impetus for digitalization, formalized through documents like the Pentagonal Strategy—Phase I (RGC, 2023) and Cambodia Digital Government Policy 2022–2035 (RGC, 2022). This unwavering leadership created the necessary authority and resource commitment to launch and sustain major cross-ministerial projects, such as the e-government platform, overriding institutional resistance and ensuring compliance (RGC, 2021).

2. Strategic shift toward "government as a platform": There was a deliberate decision to treat government services as integrated systems operating on shared standards, rather than isolated silos. This conceptual shift is the core enabler of the e-government platform's ability to function seamlessly across ministries and the digital land management system's capacity to confidently share data with financial institutions, promoting interoperability and reducing the burden of duplicate data entry.

3. Legal and institutional backing of data integrity: For sensitive systems, the establishment of clear legal frameworks for data security, ownership, and digital authentication was paramount. This foundation of trust is the central driver of the digital land management system, as the innovation's success hinges on citizens and businesses having confidence in the integrity and legal validity of the digital titles.

4. Mandatory citizen-centric service design and accountability: Innovation efforts are increasingly guided by citizen needs and feedback, marking a crucial departure from past administrative styles. The formalization of channels through the citizen feedback mechanisms has created a performance pressure point, ensuring that new services are designed for accessibility and that administrators are held accountable for resolution rates, driving improved service quality and trust.

5. Targeted digital human capital investment: While overall capacity gaps exist, a key driver has been the targeted investment in specialized training and upskilling within important implementing agencies (e.g., the MCS). Such investment has focused on cultivating the skills required for managing and evolving the digital ecosystem, ensuring the long-term sustainability of the complex systems deployed.

RECOMMENDATIONS

To sustain the improvements demonstrated by the digital innovations and institutionalize a pervasive culture of productivity and innovation in the public sector, Cambodia should focus on the following targeted measures:

1. Institutionalize accountability by linking feedback to performance: Performance data derived from the citizen feedback mechanisms (e.g., service resolution rates and user satisfaction scores) should be formally integrated into the annual performance evaluation and career progression systems of public officials, particularly at the subnational level. This will ensure that the innovations translate directly into a culture of productivity and incentivize administrators to treat responsiveness as a core mandate, rather than an optional function (RGC, 2021).

2. Establish a national data governance authority: To maximize the efficiency gains of the e-government platform and minimize recurring data conflicts, a centralized authority with the legal mandate to enforce data standards, interoperability protocols, and security across all ministries should be established. This will reduce resistance to sharing data, which is crucial for maximizing efficiency gains and ensuring that the platform's foundation is structurally sound.

3. Launch a "local innovation challenge fund" to empower frontline staff: Small, contestable innovation budgets (risk funds) earmarked for subnational administrators and frontline civil servants should be created. This will empower the officials responsible for implementing complex systems like the digital land management system to propose and pilot localized solutions to specific regional challenges (e.g., issues of digital literacy or connectivity), fostering a bottom-up culture of innovation and ownership.

4. Prioritize digital human capital development and retention: The focus of capacity-building efforts should shift away from general ICT training toward the highly specialized skills (e.g., data governance, cybersecurity, user-centric design) required to manage and evolve the digital ecosystem. Furthermore, retention strategies (e.g., specialized pay scales or career paths) should be developed to retain this critical talent within the civil service and ensure the long-term sustainability of successful digital systems (RGC, 2021).

5. Ensure inclusive access to bridge the digital divide: Successful digital services can exacerbate inequality if not broadly accessible. Therefore, a national strategy prioritizing affordable connectivity and dedicated digital literacy training for vulnerable and rural populations should be implemented. This strategy should ensure that services like digital land records benefit all citizens equally and that digital transformation supports rather than hinders social equity.

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BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF INDIA

EXECUTIVE SUMMARY

Innovation has become a cornerstone of India's public sector transformation, enabling more efficient, inclusive, and citizen-focused service delivery. The Government of India defines public sector innovation as any new or improved approach in governance that creates positive impact for citizens or stakeholders. Over the years, innovation has been institutionalized through national policies and missions that emphasize technological advancement, skill development, and entrepreneurship.

The Science, Technology and Innovation Policy 2013 (Ministry of Science and Technology, n.d.) marked a pivotal step in positioning India as a global innovation hub. Building on this, initiatives such as the National Innovation Council, Atal Innovation Mission under NITI Aayog, Startup India, and Digital India have created a robust ecosystem encouraging research, problem-solving, and enterprise-led development (Dhar & Saha, 2014). Innovation has also been embedded in India's national policy, including the National Policy on Skill Development and Entrepreneurship 2015 (Ministry of Skill Development and Entrepreneurship, 2015) and the National Education Policy 2020 (Ministry of Human Resource Development, 2020), ensuring stronger linkages between knowledge, skills, and productivity.

This report presents an analysis of three impactful public sector innovations, namely, the Common Service Center (CSC) scheme, Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0), and eSanjeevani telemedicine system, which have collectively contributed to digital empowerment, higher productivity, and service efficiency in India. Under the Digital India program, CSCs have revolutionized last-mile service delivery by providing government and commercial services through rural digital entrepreneurs. CSCs have effectively bridged the digital divide, empowered local communities, and created self-sustaining rural enterprises that demonstrate scalable process and service innovations. PMKVY 4.0 focuses on equipping youth with job-relevant skills, enhancing employability, and addressing industry demand. It has strengthened the workforce base and contributed to inclusive economic growth by linking training outcomes with employment opportunities. Meanwhile, eSanjeevani, India's national telemedicine platform, has transformed healthcare accessibility, offering remote consultations that ensured continuity of care during the coronavirus disease 2019 pandemic and beyond. Its multilingual and inclusive design guarantees that citizens from all regions can access quality healthcare without physical barriers.

These initiatives showcase how public sector innovation can deliver measurable improvements in productivity and governance outcomes when supported by coherent policies, digital infrastructure,

and institutional capacity. This report also analyzes the contextual factors that enabled these successes, including leadership commitment, technology adoption, and interministerial collaboration. It concludes by highlighting that continued emphasis on innovation-oriented governance is essential for sustaining inclusive growth and ensuring that public services remain adaptive, efficient, and citizen-centric.

Going forward, the integration of AI, data analytics, and digital platforms within government operations can further accelerate the pace of innovation. Strengthening cross-sector partnerships among government, academia, and industry will be critical in fostering experimentation and scaling successful models nationwide. A culture of continuous learning, evidence-based decision-making, and citizen co-creation can transform public administration into a dynamic system that not only responds to challenges but also anticipates future needs, laying the foundation for a truly innovative and productive India.

BACKGROUND

Public system innovations involve the development and implementation of new or much-improved products, services, or ways of working within government organizations or public service delivery. Parameters that play a significant role in identifying key innovations include strategy, processes, measurable outcomes, impact, scalability, sustainability, as well as significant challenges and their resolution.

The public sector plays an important role in India. India's public sector comprises 58 union ministries and 93 departments responsible for the smooth functioning of the country (Integrated Government Online Directory [IGOD], n.d.). According to the IGOD, there are a total of 30 sectors, 11 apex bodies, and 36 states and union territories. Other bodies include the Judiciary, Indian Missions Abroad, Union Government, Legislature, and Districts Administration. A comprehensive list is available on the IGOD website (IGOD, n.d). There are over 175 central public sector enterprises divided into Schedule A, B, C, and D categories.

In India, 1991 marked a watershed, heralding liberalization of the economy (Dhar & Saha, 2014). In developing countries, public sector performance has considerable scope for improvement. As part of its national agenda to promote growth, improve efficiency, and increase international competitiveness, the Government of India has continuously introduced policies to promote industrial and fiscal growth and improve trade and foreign investment, thereby contributing to the overall socioeconomic development of the country. Innovation is central to such reforms.

Innovation policies appear at both central and state government levels. Central government policies provide a top-level approach defined by national vision, missions, funding, and frameworks. State government policies focus more on localization and sector-specific priorities based on the strength of the states and districts. Both government levels work with multiple stakeholders, such that policies are implemented in a top-down manner.

India is home to multiple central and state-level innovation departments, units, and laboratories. An expansive range of policies cover agriculture, education, science and technology, environment

and climate change, health, technology and entrepreneurship, social justice and welfare, and financial inclusion, among other areas. Startup India, Skill India, Digital India, Stand Up India, and Mission Karmayogi are some of the unique programs aimed at fostering a culture of innovation and public good.

As the premier policy think tank of the Government of India, NITI Aayog provides directional and strategic inputs on development, innovation, and inclusive growth (NITI Aayog, 2020). Its objective is to design strategic and long-term policy and program frameworks and initiatives, as well as monitor their progress and efficacy. The lessons learned through monitoring and feedback are used for to make innovative improvements, including necessary mid-course corrections. NITI Aayog has 33 divisions, 5 cells, and 3 attached and autonomous bodies. Its activities can be divided into four domains: policy and program framework, cooperative federalism, monitoring and evaluation, and think tank and knowledge and innovation hub.

The office of the Principal Scientific Advisor to the Government of India manages a holistic and pragmatic policy dedicated to science, technology, and innovation. The policy aims to reorient science, technology, and innovation in terms of priorities, sectoral focus, and strategies.

Other actors driving innovation include research and development (R&D) laboratories, such as the Council of Scientific and Industrial Research, and government departments, such as the Defense Research and Development Organization, Indian Space Research Organization, Department of Science and Technology, and Department of Biotechnology.

In the 21st century, technology and science have played an indisputable role in helping India address the challenges of droughts, poverty, and hunger, among others. Innovation has been instrumental in ushering in the Green, White, and Blue Revolutions, bringing millions out of poverty, generating livelihood opportunities, and paving the way for a young and self-reliant nation.

The India Innovation Index clarifies India's innovation landscape at the subnational level (NITI Aayog, 2020). It identifies the innovative capabilities of states, highlighting their strengths and how these might be replicated elsewhere, as well as their weaknesses and how they might be rectified. It also helps states/provinces assess their own capacities in identifying areas that have the potential to boost the development of innovation-led entrepreneurship and attract startups and hi-tech companies.

Public sector innovation in the Indian context is deeply rooted in decentralization and knowledge systems. Public sector traditions include the Panchayati Raj system, that is, local self-governance. Through a bottom-up approach and the encouragement of problem solving at the local level, this system has resulted in some unique grassroots innovation in administration. Panchayat Ghars, established by the Government of India, take care of local data management. Innovations like Common Service Centers (CSCs) at the Gram Panchayat level help in the delivery of services, driving frugality and improvisation. Traditionally, the Arthashastra, the economic system on which educational institutions like Takshashila and Nalanda were based, has been a historical driving force behind modern institutions. Meanwhile, finance commissions and five-year plans have driven

large-scale vision and structured innovation in policymaking. However, public sector challenges include red tape at various levels, bureaucratic hurdles, risk aversion mentality, lack of timely decision-making, hierarchical rigidity, and biased decision-making.

Traditionally, private sector innovation has been driven by guild systems, which established standards, financing, and so on. Guilds were the precursors to industry associations and included family businesses set up by migrants from Persia and Baniya communities with entrepreneurial mindsets, risk-taking capability, and frugal engineering. Indian society is also characterized by cultural and language diversity and complex markets that drive businesses to adapt and innovate. Private sector challenges include hurdles like short-term plans, conservatism, decision-making, and community-based exclusivity.

Community sector innovation thrives on collective action, indigenous knowledge, and cultural practices. India has a history of successful cooperative movements. For instance, led by organizations like Amul, the White Revolution empowered communities to seek innovation in service delivery and livelihoods. Alongside the community-led creation of knowledge through ancient systems like Ayurveda, handicrafts, and folk tradition, festivals, community engagement, and age-old traditions promote intergenerational knowledge sharing through folk songs and storytelling. However, the community sector is often held back by social conformity, resistance to change, and exclusion. Key actors include central government ministries and bodies like the Ministry of Science and Technology, Ministry of Electronics and Information Technology (MeitY), Ministry of Skill Development and Entrepreneurship (MSDE), and National Innovation Foundation. Public sector enterprises, technology boards, and institutions like the Indian Council of Medical Research and Indian Council of Agricultural Research play a key role in driving innovation in areas such as agriculture, medicine, and heavy industry.

India's private sector is led by large companies, such as Reliance, Adani, Godrej, Tata group, Infosys, and Zoho, among others. A big startup ecosystem has revolutionized and disrupted areas like quick commerce, food industry, and mobility. In this respect, major companies include Ola, Swiggy, and Rapido.

Industry associations also play a key role in driving innovation in a sector-specific, cluster-based fashion, particularly in IT, electronics, and telecommunications, among other areas. Prominent industry associations include the National Association of Software and Service Companies, Associated Chambers of Commerce and Industry of India, Internet and Mobile Association of India, Electronic Industries Association of India, Confederation of Indian Industry, and Federation of Indian Chambers of Commerce and Industry.

Based on government mandates, corporate social responsibility also drives innovation in limited format and innovative projects. Angel investors, banks, and small lending institutions are other key stakeholders driving innovation by providing financial support and access to a line of credit. Local communities and civil society organizations also innovate at the community and grassroots level.

The Atal Innovation Mission (AIM) is the Government of India's flagship initiative to create and promote a culture of innovation and entrepreneurship across the country. AIM's objective is to develop new programs and policies for fostering innovation in different sectors of the economy, provide platforms and collaboration opportunities for different stakeholders, and create an umbrella structure to oversee India's innovation and entrepreneurship ecosystem.

ANALYSIS OF INNOVATION RESULTS AND THEIR LINKS TO OUTCOMES

Public Service Innovations in India

In India, public services form the backbone of governance, ensuring that essential facilities such as education, healthcare, transport, energy, water, housing, and welfare reach citizens across urban and rural areas. Public services are delivered through a mix of central, state, and local government institutions, supported by digital platforms, public enterprises, and community organizations. In recent years, technology-driven initiatives under the banner of electronic governance (e-governance) and Digital India have transformed how people access schemes and entitlements, making processes more transparent, efficient, and inclusive. Together, these services aim to improve quality of life and promote equity, social justice, and sustainable development.

Education Sector

In the education sector, stakeholders like the Ministry of Education, University Grants Commission, All India Council of Technical Education, school boards (e.g., Central Board of Secondary Education), and state boards provide education-related services to the student community. Services include the provision of schools, universities, scholarships, and skill development programs. The National Education Policy 2020 (Ministry of Human Resource Development, 2020) drives innovation in the education sector, including the introduction of Digital India e-learning platforms (e.g., SWAYAM and DIKSHA), smart classrooms, and vocational training. The Ministry of Education has developed student management information systems, such as the Unified District Information System for Education (UDISE), to collect and analyze school-related data for policy and planning (Ministry of Education, n.d.). Unique innovations include AI-based dashboards for data visualization, the National Academic Depository, DigiLocker for the storage of certificates, and the Academic Bank of Credit. Conceptual innovation has been largely linked to experiential learning, competency-based education, and skill integration into school curricula. Atal Tinkering Labs have been introduced in schools.

In the education sector, tools like UDISE streamline data collection and reporting for policy decisions and facilitate teacher training, student tracking, and resource allocation, thereby improving operational efficiency. Structural innovations include school data systems, digital learning infrastructure, and innovation laboratories in schools. Processes like online data collection, teacher training, and learning management have improved. System innovations have enabled more efficient monitoring of schools and optimized resource allocation. In addition to better learning outcomes, evidence-based policy interventions are being implemented.

Healthcare Sector

In the healthcare sector, stakeholders like the Ministry of Health and Family Welfare (MoHFW), Indian Council of Medical Research, All India Institutes of Medical Sciences, state health departments, district hospitals, and community health centers provide healthcare to the population. Healthcare service providers include hospitals and primary health centers, and health services include vaccination, maternal health and childcare, and telemedicine (MoHFW, 2025).

Successful innovations include Aadhaar-based Ayushman Bharat, a health insurance scheme, as well as eSanjeevani telemedicine services, digital health identity documents, and digital health kiosks. These innovations have expanded the accessibility of healthcare services to the grassroots level. Examples of conceptual innovations include health education awareness activities, preventive and community-driven healthcare models, telemedicine, and health identity documentation

systems. Structural innovations have resulted in integrated health records and national insurance systems. Digital claim processing, telemedicine consultations, and preventive health tracking have been made easier and more accessible to a wider population. Innovations have reduced administrative and treatment delays, increased access to healthcare, and improved patient outcomes.

Social Welfare Sector

In the social welfare sector, stakeholders include the Ministry of Social Justice and Empowerment, state welfare departments, NGOs, special schools (e.g., schools for the physically impaired), and various welfare institutions (e.g., the Rehabilitation Council of India and the National Trust). Services include pension disbursement; subsidies; and welfare schemes for women, Scheduled Castes and Scheduled Tribes, older adults, and persons with disabilities (Department of Social Justice and Empowerment, n.d.)

Innovations include Direct Benefit Transfer, Aadhaar-enabled services (a conceptual innovation), and the distribution of artificial limbs and other rehabilitation aids to persons with disabilities. In India, Aadhaar is a unique digital identity number and the cornerstone of the nationwide digital identity and payment scheme. This system facilitates automated fund transfers, reducing leakage and facilitating faster scheme implementation. Digital innovation has expanded the geographic and social coverage of the social welfare scheme, improving equitable distribution and generating a measurable social impact (Department of Empowerment of Persons with Disabilities, 2018).

Skill Development

In the employment and skill development sector, key stakeholders include the MSDE, National Skill Development Corporation (NSDC), National Council of Vocational Education and Training (NCVET), State Skill Development Missions (SSDMs), and the Directorate General of Training (responsible for overseeing industrial training institutions). Services include the provision of skills training, apprenticeships, job matching, and entrepreneurship support.

Innovation in this sector has been delivered by flagship skilling programs, such as the Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0), Pradhan Mantri Vishwakarma Scheme, National Apprenticeship Scheme, National Career Service portal, and online skill training. In addition to multiple training partners, Pradhan Mantri Kaushal Kendras have been established at the district level to meet high-end and forward-looking skilling needs. The skilling ecosystem is governed by the National Skills Qualification Framework and the National Policy of Skill Development and Entrepreneurship.

Mobility, Transport, and Infrastructure

Key stakeholders in the mobility, transport, and infrastructure sector include the Ministry of Road Transport and Highways, Ministry of Railways, metro authorities, state transport departments, regional transport offices, and National Highway Authority of India. Services include the provision and maintenance of roads, railways, metros, airports, public buses, and cab aggregators. Innovation in this sector includes the introduction of FASTag digital tolling at toll plazas, metro smart cards, electric mobility adoption, and online driving license application and permits.

Agriculture

In the agriculture and rural development sector, key stakeholders include the Ministry of Agriculture and Farmers Welfare, National Bank for Agriculture and Rural Development, Panchayati Raj institutions, state agriculture departments, Indian Council of Agricultural Research, Krishi Vigyan

Kendras, and agricultural universities. Services include irrigation; crop insurance; rural roads; self-help groups; and the availability of materials, such as fertilizers, urea, and seeds (Department of Agriculture and Farmers Welfare, n.d.a).

Innovations include schemes like the National Agriculture Market (*e*-NAM) (Small Farmers' Agribusiness Consortium, n.d.), soil health cards (Department of Agriculture and Farmers Welfare, n.d.b), drone-based farming, and agricultural loan and insurance coverage. Digital market linkage platforms and digital farmer databases have improved structures in the agriculture sector. Innovation has focused on faster market access, better pricing, and reduced transaction costs, improving farmer welfare in terms of increased incomes, improved rural livelihoods, and more efficient resource use.

e-Governance

In the e-governance sector, key stakeholders include the MeitY, National Informatics Centre, state e- governance departments, Digital India Corporation, National e-Governance Division, India AI Mission, and the Digital India Bhashini Division. Services include online governance, digital identity documentation, and various citizen services.

Innovations include the Digital India Program, Aadhaar, Unified Mobile Application for New-Age Governance (UMANG), DigiLocker, e-Office, Passport Seva, and CSCs. In this sector, integrated digital governance frameworks have been implemented across ministries under the Digital India program. Innovation has digitized workflows, reduced paperwork, and improved interdepartmental coordination. It has resulted in faster service delivery and reduced administrative efforts, thereby increasing transparency, accountability, and citizen satisfaction.

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATIONS IN INDIA

Among the sectoral innovations mentioned above, three examples have been shortlisted based on resulting improvements in productivity and innovation structures (resources and organization), processes (activities), and outcomes (results). First, in the e-governance sector, the CSC scheme has transformed public service delivery in India by creating a widespread network of digital access points in villages and towns. By integrating multiple government departments under a unified organizational framework, CSCs provide a structured platform for delivering services such as issuing certificates, pension schemes, utility payments, and digital financial services. More than 400 services are being delivered via the CSC platform. Multiple engagement models have emerged, whereby the central, state, and industry sectors use CSCs to reach beneficiaries. The presence of CSCs has also expanded access points for the delivery of public services, reducing citizen burden in terms of time, energy, and resources. Village-level entrepreneurs (VLEs) are trained to manage these centers efficiently, ensuring optimal resource utilization while strengthening local governance.

The CSC scheme is a pivotal element of the Digital India initiative, which aims to transform rural India by providing digital empowerment and promoting a knowledge-based economy. CSCs are instrumental in achieving the vision of a digitally and financially inclusive society by enhancing governance, citizen engagement, and empowerment. The success of the CSC scheme in transforming India's rural governance landscape and establishing sustainable digital service delivery can be attributed to innovations that addressed fundamental challenges in rural service access, effective government structures that enabled coordinated implementation across multiple levels of

governance, and active organizational participation that created sustainable local entrepreneurship while maintaining service quality standards.

Second, PMKVY 4.0 focuses on skill development through a national framework that connects training partners, industries, and assessment agencies. This program standardizes skill training, assessment, and certification processes, with an emphasis on competency-based learning. PMKVY 4.0 is helping to improve youth employability by streamlining training delivery and ensuring measurable outcomes, addressing sector-specific skill gaps, and fostering a sustainable ecosystem involving both public institutions and private industry.

Third, the eSanjeevani telemedicine platform has introduced a digital infrastructure that links hospitals, doctors, and patients across the country, particularly benefiting the rural and underserved regions. Through remote consultations, e-prescriptions, and real-time health monitoring, the platform reduces patient travel, eases hospital workloads, and improves healthcare efficiency. The MoHFW launched eSanjeevani to bridge critical gaps in the country's healthcare system. eSanjeevani demonstrates that digital health has come of age in India. This pioneering solution has ushered in the remarkable transformation of India's primary healthcare system, benefiting those residing in resource-constrained areas. In doing so, eSanjeevani has emerged as a catalyst for fostering a thriving digital health ecosystem across the country. This telemedicine system enhances resource utilization by combining centralized health IT systems with accessible service delivery, producing tangible improvements in healthcare access, service quality, and public health outcomes.

CSCs

Established under the 2006 National e-Governance Plan (NeGP), the CSC scheme is India's largest network of last-mile digital access points and a flagship component of the Digital India mission. Designed to bridge the rural–urban digital divide, CSCs provide citizens with access to government and private services through a decentralized network of nearly 590,000 centers, of which 460,000 operate in rural areas. CSCs function through a multitier governance model:

- MeitY provides national policy direction and oversight.
- CSC e-Governance Services India Ltd., a special purpose vehicle (SPV), develops the digital platform, trains VLEs, and ensures service integration.
- State Designated Agencies (SDAs) and District Collectors support local coordination.
- VLEs run the centers, deliver frontline services, and build community trust.

CSCs act as a single-window digital access platform, enabling services including Aadhaar enrollment, banking, telemedicine, digital literacy, legal advisory (Tele-Law) (Department of Justice, n.d.), education, utility payments, agricultural support, and e-commerce, dramatically reducing the need for citizens to travel to distant government offices.

CSCs represent a blend of structural, technological, service, process, policy, and organizational innovations, which together improve service productivity and innovation capacity.

In terms of process improvements, CSC has introduced systematic approaches to service delivery through a three-tier implementation framework comprising VLEs at the grassroots level, Service Centre Agencies at the district level, and SDAs at the state level. This framework ensures coordinated service delivery. Service processes are refined through integrated government-to-citizen (G2C) and business-to-citizen (B2C) services via the Digital Seva Portal (DSP), real-time transaction monitoring systems, biometric authentication for secure service delivery, and multilingual interfaces ensuring accessibility across diverse populations. Additionally, the CSC 2.0 framework launched in 2015 has integrated comprehensive training programs for VLEs, outcome-based performance monitoring through digital dashboards, and convergence with multiple government schemes including Ayushman Bharat, Digital India, Tele-Law, telemedicine services, and financial inclusion programs. In doing so, the CSC 2.0 framework aligns digital service delivery with evolving citizen requirements and government priorities.

The scheme's outcomes demonstrate measurable impact on digital inclusion, rural entrepreneurship, and governance transparency, revolutionizing rural service delivery across India. With 48.1 million transactions processed monthly, namely, 26.19 million through the DSP and 21.91 million through non-DSP services, CSCs have become the backbone of India's rural digital infrastructure. The initiative has created employment for 589,000 VLEs, with significant participation of women entrepreneurs, across approximately 80,000 centers. Each VLE employs at least two additional people, resulting in the employment of at least 1.2 million people across India's rural communities. With CSCs supplying services spanning Aadhaar enrollment, banking and financial services, telemedicine consultations, digital literacy training, legal aid through Tele-Law, utility bill payments, and agricultural services, rural citizens no longer need to travel to distant government offices. CSCs have thus reduced transaction costs and improved service accessibility while creating sustainable rural entrepreneurship opportunities.

The CSC scheme represents a systemic innovation in rural governance and service delivery, combining structural, technological, and entrepreneurship-oriented innovations to reshape public service delivery in rural India. It integrates digital connectivity infrastructure, multiservice platforms, and local entrepreneurship development as core components of sustainable rural development.

Streamlining workflows like online payments, biometric authentication, and real-time service delivery has reduced delays and errors, significantly improving productivity in CSCs. Aadhaar-enabled service delivery and digital payments integration have resulted in faster information processing and higher volumes of data handling, lowering costs and enhancing efficiency.

Although product innovations have made a relatively moderate impact, service types have diversified. In this regard, e-learning platforms and veterinary telemedicine are two new product innovations that have resulted in improved citizen satisfaction and CSC viability.

In terms of service innovations, multiple services have been introduced, including digital literacy, tele-law, education and skills courses, online ticketing, insurance services, and banking correspondent services. The introduction of these services has expanded citizen access to government and private services, improving both governance and citizen welfare.

Meanwhile, policy innovations include allowing CSCs to act as banking correspondents, insurance agents, e-commerce outlets, digital literacy delivery centers, and passport application centers, opening up new revenue streams for CSCs.

Skill development programs play an important role, with the training and capacity building of VLEs in digital literacy, entrepreneurship, and customer service enhancing quality. The CSC Academy was set up at the block level to provide skills training to rural youth, leading to better service quality, reduced errors, and stronger adaptability to new services.

Organizational innovations support the scaling of CSC operations. VLE societies, cluster-based models, VLE federations, and management based on public–private partnerships (PPPs) improve CSC coordination. This has led to stronger governance, better accountability, and resource pooling, increasing productivity.

The idea of "Digital India through last-mile delivery" itself is a conceptual innovation. This is a clear example of how governance and development are envisioned to enable productivity and inclusion on a grand scale.

For CSCs, the innovations most frequently associated with improved productivity are process innovations (digital workflows), service innovations (new citizen-centric offerings), and skill development innovations (training and building capability of VLEs).

e-Governance and Digital Service Delivery

The CSC initiative directly bridges government services with citizen access across multiple domains, including healthcare through telemedicine, education through digital literacy programs, financial services through banking correspondents, agriculture through digital marketplaces, and utility services through integrated payment platforms. In doing so, the initiative has created a comprehensive digital ecosystem for rural development.

The CSC scheme is primarily a central government initiative led by MeitY through CSC e-Governance Services India Ltd., the implementing SPV. The scheme is operated in coordination with SDAs and District Collectors, with services implemented locally through VLEs. Therefore, it is a multilevel governance effort that spans national policy framework, state-level coordination, and grassroots implementation at the Gram Panchayat level.

The scheme emerged in response to critical challenges, including the severe rural–urban digital divide, with limited access to government services in remote areas due to infrastructural and bureaucratic constraints; widespread corruption and inefficiency in traditional service delivery mechanisms, which excluded rural populations from essential services; and the need for transparent, accountable governance systems that can reach every citizen regardless of geographic location. The demographic dividend of a young rural population requiring employment opportunities combined with rapid advancement in digital infrastructure and mobile connectivity created the enabling conditions for large-scale digital service delivery through local entrepreneurs. The coronavirus disease 2019 (COVID-19) pandemic further accelerated the need for contactless service delivery and demonstrated the resilience of the CSC network in maintaining essential service continuity during crisis situations.

At the central level, MeitY provides policy direction and funding support while CSC e-Governance Services India Ltd. serves as the nodal implementing agency responsible for platform development, VLE training, and performance monitoring. SDAs facilitate integration with state government schemes and coordinate with district administrations for local implementation support. VLEs function as the operational backbone of the scheme, delivering frontline services while building community trust and local entrepreneurship capacity. Technology partners (e.g., telecom service providers) ensure connectivity, while banking partners enable financial services, and various government departments integrate their service delivery through the common platform architecture.

MeitY is responsible for designing policy frameworks and allocation mechanisms for national CSC implementation and providing regulatory oversight for service quality and performance standards. As the implementing SPV, CSC e-Governance Services India Ltd. leads strategic planning and operational execution at the national level, ensuring platform scalability and service integration across multiple sectors. SDA coordinators facilitate local implementation by coordinating with state government departments and district administrations to ensure scheme integration and VLE support. VLEs serve as the critical link between government services and rural citizens, delivering frontline services, building community relationships, and creating local economic opportunities through their entrepreneurial activities. District Collectors provide administrative support and monitor local performance while facilitating integration with existing government programs and schemes.

The PPP model leverages local entrepreneurship for sustainable service delivery, creating a unique approach combining government oversight with private sector efficiency and community ownership. The multiservice platform approach offers comprehensive government and commercial services through single access points. By eliminating the need for citizens to visit multiple offices for different services, this approach has significantly reduced transaction costs and improved convenience. The VLE concept has resulted in local ownership and community trust while providing sustainable livelihood opportunities for rural youth, particularly women entrepreneurs, who can operate centers in their local communities. As such, the integration of digital literacy training with service delivery has ensured holistic rural empowerment beyond just service access, creating digitally capable communities that fully utilize available services and opportunities.

Centralized platform management through CSC e-Governance Services India Ltd. has ensured standardized service quality and technology infrastructure while maintaining government control over essential service delivery mechanisms. A multitier governance structure, whereby state agencies facilitate local customization while maintaining national standards, has enabled the scheme to adapt to diverse regional contexts without compromising service quality or interoperability. Performance-based monitoring through real-time dashboards and transaction tracking has created accountability mechanisms. In addition to ensuring that VLEs maintain service standards, accountability mechanisms provide the government with comprehensive data on service utilization patterns. Integration with existing government schemes and welfare programs has enabled service convergence that maximizes citizen benefit while optimizing resource utilization across different departments and programs.

The strategic partnership between MeitY and CSC e-Governance Services India Ltd. has provided technical excellence while maintaining government oversight of critical service delivery functions,

ensuring both efficiency and accountability in implementation. Collaboration with banking and telecom partners has enabled comprehensive financial services and connectivity infrastructure that have transformed rural access to essential services. Integration with state government departments has facilitated local scheme delivery while maintaining national coordination and standards. Comprehensive VLE training and capacity building programs have ensured service quality and digital literacy development, creating sustainable local capabilities for continued service delivery and community development.

Therefore, CSC performance and sustainability are driven by the combination of governance, technology, human capacity building, and strategic partnerships.

PMKVY 4.0: Skill Development Innovation

PMKVY 4.0 is the latest phase of India's flagship skill development program, launched to align the workforce with emerging industry demands and enhance employability across diverse sectors. Implemented by the MSDE and NSDC, PMKVY 4.0 focuses on industry-linked training, demand-driven skilling, and technology-enabled delivery.

The scheme's core objective is to skill, upskill, and reskill youth through short-term training, Recognition of Prior Learning (RPL), and targeted skilling interventions. The program places strong emphasis on future skills, including AI, robotics, drones, green jobs, three-dimensional printing, and cybersecurity, as well as local economy needs like handicrafts, construction, retail, and tourism.

PMKVY 4.0 operates through a decentralized framework involving

- The MSDE, which is responsible for policy direction and funding design;
- The NSDC, which coordinates implementation, quality oversight, and industry partnerships;
- SSDMs, which is responsible for state-level execution;
- Training providers and centers, which are responsible for on-ground delivery; and
- Sector Skill Councils (SSCs), which are responsible for standard-setting and industry alignment.

The scheme caters to India's demographic dividend while supporting national priorities such as Make in India, Digital India, and local economic development. PMKVY 4.0 introduces policy, institutional, technological, process, and service innovations that improve efficiency, transparency, and employability outcomes.

In terms of process improvements, PMKVY 4.0 has introduced systematic approaches to skill training, including classroom-based learning, blended and digital modules, RPL, and localized demand-driven training through District Skill Committees (DSCs). Training processes are further refined through real-time monitoring, geo-tagged centers, biometric attendance, and outcome-linked funding, ensuring efficiency and accountability. Additionally, collaborations with industry and Institutes of National Importance have integrated practical exposure, internships, and entrepreneurship training into learning processes, aligning skilling with evolving market requirements.

The scheme's outcomes demonstrate measurable impact on employability, productivity, and social inclusion. Over successive phases, millions of candidates have gained certifications recognized across industries, with women and marginalized groups increasingly represented. Employment outcomes, entrepreneurship opportunities, and the mainstreaming of vocational education in academic institutions highlight how PMKVY 4.0 has not only bridged skill gaps but also elevated the status of vocational training as an aspirational career choice. By delivering high-quality, market-aligned skills, the scheme has enhanced workforce readiness and contributed to economic growth at both the local and national level.

PMKVY 4.0 represents a systemic innovation in skill development, combining structural, procedural, and outcome-oriented innovations to reshape the public sector's approach to human capital. It integrates digital learning, industry partnerships, and competency-based assessment as core components. This skill development and employment initiative directly links education, training, and workforce readiness with industrial demand across multiple sectors, including IT, manufacturing, agriculture, and emerging technology domains like AI, machine learning, and IoT.

Although PMKVY 4.0 is primarily a central government initiative, or Central Sector Scheme, led by the MSDE, it operates in coordination with SSDMs to implement programs locally, making it a multilevel governance effort.

India is experiencing a rapid growth and emerging as the world's fastest growing economy. With a median age of 28 years among the working population, the rapid demographic growth is contributing immensely toward a larger evolving ecosystem. As part of the training ecosystem, India's education system (i.e., school education, higher education, and technical and vocational education) is furnishing a ready workforce comprising millions of youth. However, unemployment is a significant issue, as people often lack the skills demanded at various levels. Schemes like PMKVY 4.0 have been launched to bridge this gap and cultivate a skilled workforce, representing a key contextual factor for innovating in this space.

Industry is not only demanding core competencies in specialized domains, but also soft skills. In other words, while technical skills are in high demand, soft skills are also important. Driven by the use of modern technologies in the industry sector, this shift is another contextual factor driving innovation.

The PMKVY 4.0 scheme also envisions the greater participation of women, the rural population, and marginalized people in India's economy. To date, the PMKVY 4.0 scheme has covered a total of 36 sectors, with emphasis on other areas in the future. Training centers with necessary equipment, trainers, and so on, have been established, providing the necessary resources for the delivery of skill programs. These centers are a contributing factor to improved training and innovation.

In addition to increasing internet penetration in India's rural areas, data indicate that a large proportion of the rural population is using and accessing the internet. Consequently, digital and blended learning platforms have made their way into skilling, with a significant number of candidates using these platforms to train in the latest software and tools.

MSDE is the nodal ministry for skilling in India. The NSDC and 36 SSCs are responsible for the implementation of the skilling programs on the ground. SSCs are awarding bodies under the NCVET. The SSDMs and DSCs identify key sectors in their states and districts requiring targeted skilling.

Numerous central government institutions, private companies, and academic organizations are involved in the skilling ecosystem. Consequently, niche curricula and ideas have reached the academic domains bridging the divide between demand and supply. Under the NCVET, Assessment Agencies are independent third-party bodies responsible for validating certification and assessing candidates in different qualifications. Industrial associations include National Association of Software and Service Companies, Association of Healthcare Providers India, and the Maharashtra Chamber of Commerce, Industry and Agriculture.

As mentioned above, the MSDE is responsible for designing policies and funding mechanisms, while the NSDC and SSDMs are responsible for executing training programs and partnerships on the ground. The SSCs are responsible for aligning curricula development and industry standards for each qualification. Industry partners bring in expertise and provide internships, practical exposure, and placement opportunities to candidates. Industry associations are key players in the sector and contribute a wealth of collective experience. Skill India Center trainers, mentors, and community entrepreneurs deliver courses on the ground and are key actors in the skilling value chain. The success of PMKVY 4.0 in transforming India's skill development landscape can be attributed to a combination of innovative ideas, effective government structures, and active organizational participation.

As qualifications and job roles are competency-based, market-aligned training modules have been developed in collaboration with inputs from experts and industry alike. Programs like RPL have become an important tool for certifying informal skills or skills that have been passed down through the generations due to the lack of a proper system. The PMKVY 4.0 scheme is a demand-driven process covering localized training needs at the ground level based on district-level labor market requirements. Due to technological growth, emerging technologies and entrepreneurship training have been integrated into the curriculum, adding numerous entrepreneurial skills.

Government structures have provided the necessary support for the implementation of PMKVY 4.0 on a large scale. The government has ensured policy coherence. States and districts facilitate effective localized implementation. Funds are provided after candidates are mobilized and training has commenced. For many programs, funds are only released after assessments are completed. Outcome-based funding is linked to certification and placement, creating accountability in the whole process. Monitoring mechanisms include physical and virtual visits to the training centers, the geo-tagging of the training centers, and biometric/face authentication-based attendance.

As an awarding body, the SSCs ensure alignment of curricula with industry standards in the skilling ecosystem. SSCs are responsible for the accreditation and affiliation of training centers and provide necessary support for effective implementation. The participation of industry and top-tier academic institutions has imbued skilling with aspirational value and ensured quality delivery. Industry contributes customized training, internship opportunities, and placements for skilled candidates. VLEs working as mobilizers and trainers and Skill India Centers bridge the urban–rural skill gap and create local entrepreneurship models.

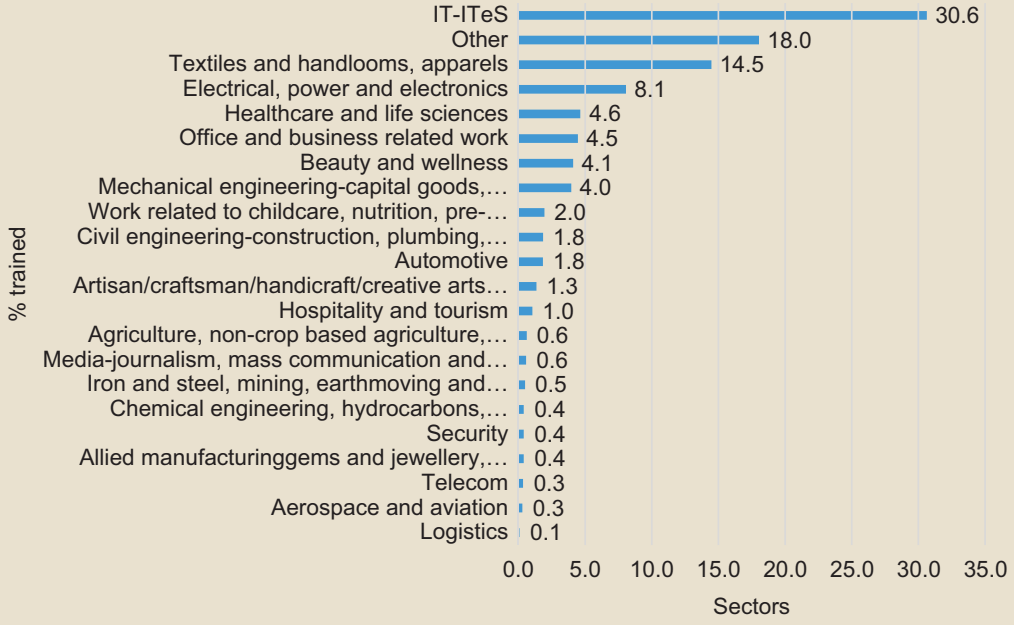
Gender and social inclusion measures are also helping expand candidate diversity. The continuous evaluation and adaptive evolution of the skilling programs have improved the overall delivery of programs. Efforts focusing on scalability, quality assurance, and sustainability should be supported to institutionalize vocational education as a long-term solution. Together, these factors have enabled PMKVY 4.0 to strengthen public sector capacity, enhance operational efficiency, and

achieve measurable outcomes in employability, productivity, and social empowerment, positioning it as a transformative force in India's skill revolution.

Data on PMKVY 4.0 indicate that the popular areas of training include IT and IT-enabled services (ITES), electronics, apparel, tourism and hospitality, and beauty and wellness. Among available data sources on skill training in India, the Periodic Labour Force Survey (PLFS), conducted by the National Sample Survey Office, collects information on vocational or skill training and the employment status of those trained in these skills. As Figure 1 shows, the 2022–2023 PLFS similarly found the aforementioned to be the preferred sectors of training.

FIGURE 1

INDIVIDUALS WITH VOCATIONAL TRAINING BY TRAINING SECTOR (% DISTRIBUTION).



Source: PLFS, July 2022–June 2023 (National Sample Survey Office, 2023).
Note: ITES, IT-enabled services; PLFS, Periodic Labour Force Survey.

A third-party impact evaluation of the scheme is underway, and results have been positive. A dashboard has been developed to monitor the progress of the scheme in real time and enable live data analysis. The dashboard is designed to provide a visual representation of the data, allowing for the quick identification of trends, patterns, and anomalies. It also displays various key performance indicators, such as enrollment, training, assessment, and certification rate, allowing for immediate corrective actions to be taken if necessary.

Reporting success stories is a crucial aspect of evaluating the impact and achievements of a program. These stories can provide valuable insights into a program's strengths and weaknesses, helping program managers identify best practices and areas for improvement.

PMKVY 4.0's strength lies in its robust governance structure, industry participation, technology backbone, and localized execution.

eSanjeevani Telemedicine Platform

India's national telemedicine platform, eSanjeevani was developed by the MoHFW and the Centre for Development of Advanced Computing (C-DAC). The platform was launched to strengthen digital health service delivery and bridge healthcare access gaps, especially in rural and underserved regions. The platform operates through two key modes:

- eSanjeevani Ayushman Bharat–Health and Wellness Center: Based on the hub-and-spoke model, this mode facilitates doctor-to-doctor teleconsultations connecting health and wellness centers (HWCs) with specialists at district hospitals or medical colleges.

- eSanjeevani Outpatient Department: This patient-to-doctor mode enables citizens to receive teleconsultations from home through a mobile or web-based interface.

The platform supports electronic prescriptions, digital health records, video consultations, and e-pharmacy linkages. It is a core pillar of the Ayushman Bharat Digital Mission (ABDM) and facilitates universal access to primary and specialist care. With millions of teleconsultations completed, eSanjeevani is one of the world's largest integrated telemedicine platforms, significantly reducing the physical burden on hospitals and improving access to timely medical advice. eSanjeevani embodies multiple forms of innovation, including technological, process, service, policy, and institutional innovations, which have collectively transformed India's public health delivery ecosystem.

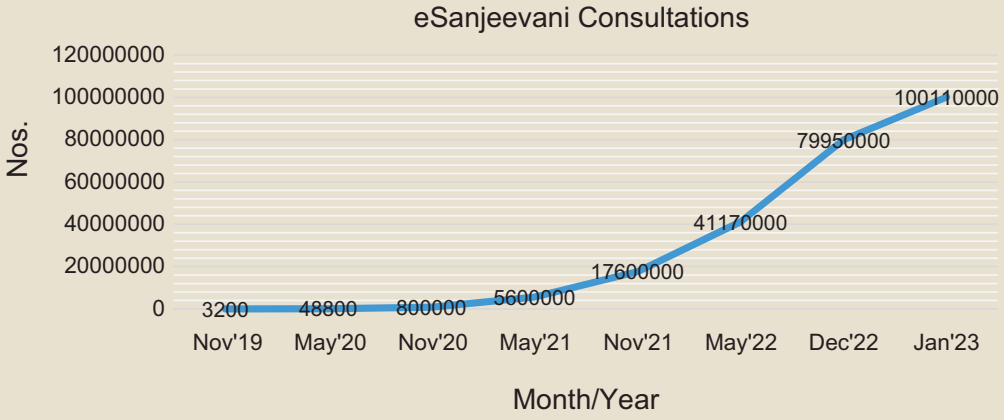
According to the National Medical Commission (NMC), as of 2024, 1,386,136 allopathic doctors were registered with the state medical councils and the NMC (PTI, 2024). Assuming 80% availability of registered allopathic doctors and around 565,000 practitioners of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), the doctor-to-population ratio in India is around 1:836, which is better than the World Health Organization (WHO) standard of 1:1000 (MoHFW, 2024). This clearly shows an upward trend in healthcare access across citizen groups, as described in Figure 2.

In terms of process improvements, eSanjeevani has introduced systematic approaches to healthcare delivery, including hub-and-spoke telemedicine consultations, patient-to-provider direct services, electronic medical records integration, and real-time diagnostic support through IoT-enabled medical devices. Healthcare processes have been further refined through the introduction of automated e-prescriptions linked to government medicine warehouses, seamless integration of the eSanjeevani system with ABDM for health records, and multilingual interfaces ensuring accessibility. Additionally, collaborations with medical colleges and specialist hospitals have integrated continuous medical education, specialist consultations, and emergency tele-stroke management into the service delivery processes, aligning telemedicine with evolving healthcare requirements and the clinical guidelines established by the MoHFW.

The platform's outcomes demonstrate measurable impact on healthcare accessibility, quality, and equity. Over successive phases, the service has completed over 344 million teleconsultations, serving over 425,000 patients daily at peak capacity, with women comprising a significant portion of beneficiaries and senior citizens representing 10% of users. Among healthcare outcomes, the system has reduced hospital burden, eliminated travel requirements for consultations, improved specialist access in rural areas, and enhanced the continuity of care through digital health records. By delivering high-quality, accessible healthcare services, eSanjeevani has enhanced India's

FIGURE 2

GRAPH SHOWING ESANJEEVANI CONSULTATIONS, NOVEMBER 2019–JANUARY 2023.



Source: MoHFW (2023).
Note: MoHFW, Ministry of Health and Family Welfare.

healthcare readiness and contributed to its Universal Health Coverage goals at both the local and national level. This was particularly evident during the COVID-19 pandemic, when it provided safe, contactless medical consultations.

Significantly, eSanjeevani has brought digital health services to the masses in rural areas and remote communities. The efficiency of the solution is evident from the large number of people accessing services. eSanjeevani technology has prompted a significant shift in the sphere of health informatics by enabling the digitalization of health information. eSanjeevani represents a systemic innovation in healthcare delivery, combining structural, technological, and service-oriented innovations to reshape the public sector's approach to healthcare access. It integrates cloud-based telemedicine, AI for clinical decision support, and interoperable health records as core components.

The initiative directly bridges primary healthcare delivery with specialist medical services across multiple specialties, including general medicine, ophthalmology, urology, cardiology, dermatology, gynecology, and emerging areas like tele-stroke management and tele-nephrology.

While eSanjeevani is primarily a central government initiative, led by the MoHFW with technical implementation by C-DAC in Mohali, Punjab, it operates in coordination with state health departments and district health systems to implement services locally, making it a multilevel governance effort spanning national, state, and district levels.

Contextual factors, such as the challenges resulting from the doctor-to-patient ratio, required innovative service delivery models capable of bringing healthcare to the doorstep of citizens. In this respect, India faces significant geographic healthcare disparities. A large proportion of doctors practice in urban areas, although 70% of India's population lives in rural areas. The eSanjeevani initiative responded to this challenge, making it a contextual factor for innovation. Government hospitals are often overcrowded, and apex hospitals experience high inflows of patients. The strain on secondary and tertiary healthcare facilities in India needed to be addressed. The solution focused

on healthcare delivery, with telemedicine providing necessary service continuity. India's digital infrastructure maturity enabled cloud-based healthcare solutions on a large scale.

The MoHFW was the nodal ministry, C-DAC Mohali spearheaded technical development, while the National Health Authority provided the necessary cohesive policy-level ecosystem. State health departments, district hospitals, and medical colleges served as hubs in the system, while HWCs, primary health centers, and community health centers operated as the spokes providing last-mile reach to patients in need. The technological backbone of the initiative was supplied by technology partners led by C-DAC, cloud service providers, IoT medical device manufacturers, telecommunications infrastructure providers, and Annual Maintenance Contract contractors, among others.

The MoHFW designed the healthcare policy and funding mechanisms for national telemedicine implementation. C-DAC was the lead technical development and platform enhancement knowledge partner. The Health Informatics Group at C-DAC Mohali was responsible for executing platform design, development, and maintenance. Community Health Officers, medical practitioners, and specialist doctors were responsible for delivering consultations across the hub-and-spoke network. State health department officials were responsible for coordinating local implementation and provider onboarding.

The success of eSanjeevani in transforming India's healthcare delivery landscape can be attributed to a combination of innovative ideas, effective government structures, and active organizational participation.

System features include the hub-and-spoke telemedicine architecture, which connects peripheral health centers to specialist expertise at higher-level facilities; the dual-service model, which combines provider-to-provider and patient-to-provider variants to address different healthcare access needs; and integration with existing government healthcare schemes like Ayushman Bharat for seamless health record management. Additionally, indigenous cloud-based platform development ensured data sovereignty and enabled customization for the Indian healthcare system.

Government structures, including centralized leadership by the MoHFW, ensured policy coherence and the national standardization of telemedicine protocols. Multitier implementation with state health departments and district hospitals facilitated the localized service delivery of health facilities in districts, blocks, and villages.

Integration with the National Health Mission simplified and optimized the funding streams and existing healthcare infrastructure for sustainable resource allocation. The system complies with the MoHFW's electronic health record and telemedicine practice guidelines, guaranteeing quality assurance practices.

The partnership between MoHFW and C-DAC has ensured technical excellence while maintaining government control over healthcare data. The collaboration with medical colleges and specialist hospitals for provider onboarding and continuous medical education has helped in streamlining the telemedicine services delivery. The integration of eSanjeevani with ABDM helped unify health records and improve interoperability, while coordination with state health systems facilitated local implementation and the training of community health workers.

The eSanjeevani platform emerged as the cornerstone of India's digital health response during the COVID-19 pandemic, ensuring uninterrupted access to healthcare when physical movement was restricted. Initially developed under the MoHFW, it was rapidly scaled to become the preferred telemedicine solution nationwide. The platform's success demonstrates how digital innovation can provide crisis-response capabilities during emergencies. Its implementation showcases the agility of India's digital public infrastructure in addressing an unprecedented health crisis.

A major contributing factor to this innovation is its ability to evolve continuously. The system leverages auto-scaling cloud infrastructure, allowing it to handle millions of consultations daily without performance disruptions or service delays. This robust technical framework ensures reliability and accessibility, even at peak demand periods. The eSanjeevani initiative is also rooted in the principle of digital inclusion. Its multilingual interface and assisted teleconsultation models make healthcare accessible to people from diverse linguistic and literacy backgrounds. By integrating vernacular support, the platform ensures that no citizen is denied healthcare services due to language or technological barriers. Furthermore, real-time integration with government medicine supply chains has enabled seamless service delivery, from online consultation to prescription and medicine dispatch. This end-to-end digital healthcare ecosystem has bridged the gap between doctors and patients, particularly in rural and underserved regions. Essentially, eSanjeevani exemplifies how innovative digital health systems can enhance resilience, equity, and scalability in public service delivery, paving the way for sustainable telemedicine infrastructure in India's future healthcare landscape.

Together, these factors have enabled eSanjeevani to strengthen India's public healthcare capacity, enhance service delivery efficiency, and achieve measurable outcomes in healthcare accessibility, quality, and equity. Therefore, eSanjeevani is a transformative force in India's digital health revolution and a model for telemedicine implementation in developing countries worldwide. The success of eSanjeevani is driven by strong governance, technology integration, accessibility, and responsiveness to citizen needs. Table 1 presents a comparative analysis of the three public sector innovation cases.

TABLE 1

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN INDIA.

Dimension	CSCs	PMKVY 4.0	eSanjeevani
Innovation type	Digital access points integrating multi-department citizen services	Competency-based national skilling framework with standardized training and assessment	National telemedicine system integrating primary care, specialists, and digital health records
Primary goal	Enhance last-mile service delivery, inclusion, and digital access	Improve employability through quality skill training, certification, and industry linkages	Provide accessible, affordable, and equitable healthcare, especially in rural areas
Level of government	National program with coordination across the central, state, and district levels	Central sector scheme with multilevel coordination via SSDMs and DSCs	National/multitier system (MoHFW, state health departments, district facilities)

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(Continued from the previous page)

Dimension	CSCs	PMKVY 4.0	eSanjeevani
Main success factor	Strong Digital India framework, VLE-based delivery model, and service convergence	Industry-linked curricula, standardized assessments, real-time monitoring, outcome-based funding	Scalable platform, hub-and-spoke model, integration with ABDM, and strong central leadership
Impact	• 589,000 CSCs established • Over 48 million monthly transactions • Over 1.2 million rural jobs • Provision of over 400 integrated services	• More than 2 million candidates trained and certified • Improved employability • Expansion of the vocational training ecosystem	• Over 344 million teleconsultations conducted • Significantly reduced hospital load • Improved access to specialist care in rural areas

Source: CSC (n.d.), eSanjeevani. (n.d.), and Skill India Digital Hub (n.d.). Compiled by the author based on publications of the Government of India.
Note: ABDM, Ayushman Bharat Digital Mission; CSC, Common Services Centre; DSCs, District Skill Committees; MoHFW, Ministry of Health and Family Welfare; PMKVY 4.0, Pradhan Mantri Kaushal Vikas Yojana 4.0; SSDMs, State Skill Development Missions; VLE, village-level entrepreneurs.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN INDIA

CSCs

As last-mile digital access points under the Digital India program, CSCs constitute an innovation in service delivery. Different innovation types play distinct roles in enhancing productivity (i.e., efficiency, reach, and cost-effectiveness) and innovation capacity (i.e., ability to introduce new services and adapt to citizen needs).

CSCs were envisioned as vital access points to deliver last-mile digital services to citizens, particularly those living in rural and remote regions of India. The primary idea behind establishing CSCs was to create digital kiosks where people could easily access a wide range of government services without having to travel long distances. These centers bridge the gap between citizens and the government by bringing essential e-governance facilities directly to the village level. Initially, the operation of CSCs was supported by various state governments through a monthly incentive mechanism intended to help VLEs sustain their respective centers during the early phases of implementation. However, the initial trials faced several challenges, such as limited digital awareness, low service utilization, and inadequate connectivity, which hindered their financial viability. To address these challenges, the concept of CSCs was strengthened under the umbrella of CSC e-Governance Services India Ltd. This institutional framework provided structure, governance, and strategic direction for the entire CSC ecosystem. Over time, CSCs began to diversify their offerings. They no longer limit themselves to G2C services, such as certificate issuance or utility bill payments. Instead, they evolved to include B2C services, creating new revenue streams and improving long-term sustainability. This shift marked the beginning of a sustainable business model for CSCs.

Through innovative partnerships with public and private organizations, CSCs started offering a variety of services that addressed the local community's needs. Short-term government projects became major contributors to their income, including projects in areas such as digital literacy under the Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDISHA); financial literacy; legal literacy; and Information, Education, and Communication activities. In addition to helping rural citizens acquire essential digital and financial skills, these projects provided CSC operators with new opportunities to earn a steady livelihood.

As digital penetration deepened across rural India, CSCs became important nodes in the delivery of banking, insurance, and financial facilitation services. Many CSCs began operating as banking correspondents, providing doorstep banking access to citizens who had previously been excluded from the formal financial system. This financial inclusion effort gained further momentum when CSCs were authorized to carry out Aadhaar enrollment and "updation" services, enabling citizens to update their biometric information locally. This move greatly reduced the pressure on Aadhaar Seva Kendras, as citizens could now visit nearby CSCs instead of traveling to distant towns.

Over time, these innovations transformed CSCs into multipurpose community service hubs. The introduction of BharatNet connectivity through Bharat Sanchar Nigam Ltd. enhanced their capacity by improving rural internet access. CSCs also took on responsibilities such as the upkeep and maintenance of fiber optic infrastructure, contributing to the overall digital ecosystem. In addition to traditional digital and financial services, CSCs began exploring new-age business models. Some centers have ventured into quick commerce, setting up play schools, HWCs, and even local advertisement kiosks to generate supplementary income. These initiatives reflect the entrepreneurial adaptability of VLEs and the evolving role of CSCs as engines of rural digital transformation.

PMKVY 4.0

PMKVY 4.0 represents a systemic innovation in skill development, combining structural, procedural, and outcome-oriented innovations to reshape the public sector's approach to human capital. It integrates digital learning, industry partnerships, and competency-based assessment as core components. The PMKVY 4.0 scheme aims to enhance industry connections and focuses on on-the-job training. Under RPL, the scheme emphasizes reskilling and upskilling through innovation in assessment and better monitoring. The scheme also delinks placement from skilling to empower trained candidates to choose their career path, focusing on entrepreneurship and livelihood creation.

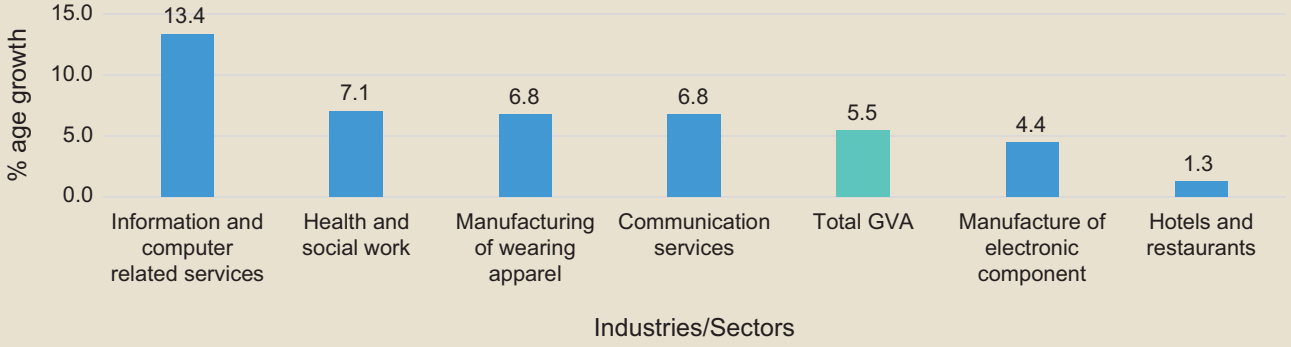
Key characteristics of the PMKVY 4.0 scheme include the provision of market-oriented and demand-driven skill training to improve employability, leveraging of technology and digitalization for process simplification, and utilization of skill development infrastructure in remote parts and difficult geographies. The scheme also focuses on improving inclusivity by expanding access to underserved communities, including women and other marginalized groups. PMKVY 4.0 highlights upskilling and reskilling to address the dynamic needs of the ever-changing market; the development of appropriate pedagogy, standardized assessments, and industry-relevant curricula; candidate-centric training with an emphasis on transferable and industry-relevant skills; enhanced industry connections through on-the-job training in short-term training programs; encouragement of

industry buy-in and contribution to skilling; entrepreneurship and livelihood creation; cultivation of a national pool of trainers and assessors; and online, digital, or blended skilling to enhance learning effectiveness, convenience, and outreach. Significantly, the scheme also focuses on new-age skills, such as Industry 4.0, Web 3.0, AI and machine learning, and augmented and virtual reality, as well as the skills needed to address climate change and promote a circular economy, green economy, and energy transition.

In India, there are inadequate employment opportunities for trained individuals, resulting in many being unemployed or exiting the labor force. It is interesting to note the economic growth in the industries that are potential employers of those trained through the PMKVY 4.0 scheme. Based on annual gross value added statements published by the Ministry of Statistics and Programme Implementation, Figure 3 presents the compounded annual growth rate in selected industries, namely, those that correspond with the preferred sectors of training. As Figure 3 shows, industries such as IT and ITES, health, apparel manufacturing, and communication have witnessed much faster growth compared to the overall growth. These sectors correspond to those in which a significant number of people are being trained under the PMKVY 4.0 scheme. However, the gap between supply and demand persists.

FIGURE 3

DECADAL GROWTH IN SELECTED INDUSTRIES FROM 2011 TO 2021 (%, COMPOUNDED ANNUAL GROWTH RATE).



Source: National Statistical Office (2022).
Note: GVA, gross value added.

eSanjeevani Telemedicine Platform

As an online tool for consultation with top doctors, eSanjeevani has bridged the gap between patients and doctors. The system has evolved over time. Different innovation types play distinct roles in enhancing productivity (i.e., efficiency, reach, and cost-effectiveness) and innovation capacity (i.e., ability to introduce new services and adapt to citizen needs).

Apart from the direct benefit of being able to facilitate care on demand by leveraging the potential of IT, eSanjeevani has successfully overcome the challenges of geography, accessibility, cost, and distance to provide equitable and quality care to populations across India. eSanjeevani has become a yardstick for swift capacity building and the utilization of digital technology to strengthen

healthcare. It is also emerging as the pioneering flagship of the ABDM, which aims to develop the foundation necessary to support India's integrated digital health infrastructure. The success of this initiative is analogous to the impact and success of the Digital India Mission.

eSanjeevani 2.0 will further enhance the telemedicine experience through a plethora of new features in terms of both technology and innovation. The architecture is now more secure, robust, and scalable to meet additional demands.

ANALYSIS OF CONTEXTUAL FACTORS

CSCs

The CSC scheme emerged from critical challenges, including the severe rural–urban digital divide, with limited access to government services in remote areas due to infrastructural and bureaucratic constraints; corruption and inefficiency in traditional service delivery mechanisms, which excluded rural populations from essential services; and the need for transparent, accountable governance systems that can reach every citizen regardless of geographic location.

A large proportion of Indian society lives in rural areas. In rural India, accessing even basic services through government channels was challenging. The NeGP was formulated by the Department of Information Technology and Department of Administrative Reforms and Public Grievances and approved by the Government of India on 18 May 2006. The 2006 NeGP comprised 27 Mission Mode Projects (MMPs) and 10 components (Ratnani, 2020).

The Augmented NeGP consists of 44 MMPs, namely, 15 central MMPs, 17 state MMPs, and 12 integrated MMPs. MMPs are owned and spearheaded by various line ministries. State governments are responsible for implementing state MMPs, under the overall guidance of respective line ministries in cases where central assistance is required. The MeitY was the facilitator and catalyst for the implementation of the NeGP and provided technical assistance to various ministries/departments and state governments (Ratnani, 2025)

The NeGP's objective was to make all government services accessible to every person in their locality through the establishment of common service delivery outlets, as well as to ensure the efficiency, transparency, and reliability of such services at affordable costs to realize the basic needs of citizens. The implementation of e-governance is a highly complex process requiring the provision of hardware and software, networking, process reengineering, and change management. Under common support infrastructure, the plan included establishing common and support IT infrastructure, including State Wide Area Networks, State Data Centers, CSCs, and Electronic Service Delivery Gateways. Suitable arrangements for monitoring and coordinating the implementation of NeGP were instituted. The NeGP also involved reforming or establishing standards and policy guidelines, providing technical support, undertaking capacity building, and R&D, among other efforts. e-Governance is being promoted through a centralized initiative to ensure citizen-centric orientation, realize the interoperability of various e-governance applications, and ensure the optimal utilization of ICT infrastructure and resources, while allowing for a decentralized implementation model. It also aims to identify successful projects and replicate them with the required customization wherever needed. India has over 250,000 Gram Panchayats or village councils, each comprising a cluster of five to seven villages. There are approximately 650,000 villages in India. Initially, the plan envisioned one CSC covering every six villages,

meaning that a total of 100,000 CSCs were planned. Later, the plan sought to cover all Gram Panchayats, increasing the number of CSCs to 250,000. Recently, the Government of India announced a desire to roll out the CSC scheme to every village in the country.

The demographic dividend of a young rural population requiring employment opportunities combined with rapid advancement in digital infrastructure and mobile connectivity created the enabling conditions for large-scale digital service delivery through local entrepreneurs. The COVID-19 pandemic further accelerated the need for contactless service delivery and demonstrated the resilience of the CSC network in maintaining essential service continuity during crisis situations.

PMKVY 4.0

India's industrial sector is undergoing a significant transformation driven by technological advancements, shifting market demands, and an increasing focus on sustainability. India has witnessed significant employment growth over the years. Indeed, between 2016–2017 and 2022–2023, employment increased by nearly 36%, with around 170 million jobs added to the market. India's economic trajectory demonstrates sustained job creation across key sectors.

To ensure that India's workforce is prepared to manage and leverage innovations in multiple sectors, it is essential to focus on skilling citizens in globally recognized certifications in new and emerging technologies. This requires specialized training and certification that aligns with technological advancements. Although India has a large young population, many lack formal training and market-ready skills. Accordingly, PMKVY 4.0 was conceptualized under the Skill India Mission to equip India's youth with market-relevant skills and enhance their employability.

Recognizing the challenge of a large unskilled workforce despite a growing demographic dividend, the Government of India launched the PMKVY 4.0 scheme through the MSDE in 2015, with implementation support from the NSDC. The program was designed to provide short-term training, recognize prior learning, and offer nationally recognized certifications, thereby bridging the gap between industry demands and the skills of job seekers. The scheme aimed to create a cycle of productivity, employment, and income growth that contributes to sustainable and inclusive development. In addition to technical and vocational training, the PMKVY 4.0 scheme emphasizes the importance of soft skills. The scheme recognizes that while technical expertise helps individuals secure jobs, soft skills such as communication, teamwork, problem-solving, time management, and workplace etiquette are equally critical for career growth and long-term employability.

A total of 36 SSCs have been developed, corresponding to the 36 sectors identified in the skilling ecosystem. One of the main functions of SSCs is conducting demand analysis, which includes examining sectoral skill gaps and demand aggregation, and creating sector-specific occupational standards and benchmarking with international standards. Aligning industry demands and skill development, SSCs also focus on promoting academic excellence. The Labour Management Information System has been established to ensure skilled individuals find employment at a decent wage. This system addresses inclusive needs while serving as a larger industry interface.

Skill development plays a crucial role in reducing poverty by enhancing employability, boosting productivity, and supporting the growth of sustainable enterprises. It acts as a catalyst for inclusive development by creating a positive cycle, whereby higher skills lead to greater productivity, which

generates more job opportunities, improves incomes, and ultimately drives overall economic and social progress.

Skill India Digital Hub is a key digital public infrastructure platform supporting India's skill development, education, employment, and entrepreneurship landscape. It aligns with the vision articulated in the G20 outcome document for building digital public infrastructure. It plays a crucial role in preparing the Indian workforce for Industry 4.0 by offering futuristic courses (MSDE, 2024).

eSanjeevani Telemedicine Platform

The eSanjeevani telemedicine platform was conceptualized based on the availability of doctors per 1,000 people. The WHO recommends a ratio of one doctor per 1,000 patients. The desire to improve this ratio in India led to innovations in the healthcare space. With the advent of virtual meeting platforms, online telemedicine was conceived and implemented. The first users of telemedicine in India were ophthalmologists, with the launch of a module on ophthalmology-telemedicine. Telemedicine was subsequently expanded to other streams, including veterinary services.

After completing mandatory degrees and internships, government doctors are required to practice in rural areas. The Government of India added rural postings in an effort to ameliorate the disparity in the availability of doctors between urban and rural areas. However, due to population growth, labor migration, and lack of healthcare insurance, among other factors, many people in India did not have affordable access to medical facilities. Consequently, secondary and tertiary healthcare facilities took on the burden of managing patients. Therefore, India needed a load distribution system that could equitably distribute the available doctors in a round-robin fashion.

Disease outbreaks, such as COVID-19, require patients to isolate. In such cases, healthcare needs to be delivered through a contactless system. During the COVID-19 pandemic, the eSanjeevani platform provided the necessary contactless delivery of health services. Due to public cloud infrastructure supported by MeitY, hosting of the applications was smooth, enabling healthcare delivery and the implementation of solutions at population scale.

KEY DRIVERS OF IMPROVEMENT

Public sector innovation in India has gained prominence as governments strive to be more responsive, efficient, and inclusive in addressing citizen needs. The shift from traditional, process-heavy administration toward flexible, citizen-oriented governance has been enabled by a combination of political will, technological adoption, institutional reform, and participatory approaches. Over the last decade, India has accelerated this momentum through strong leadership, policy reforms, digital public infrastructure, enhanced institutional capacities, and robust monitoring mechanisms. These drivers have enabled large-scale reforms such as CSCs, PMKVY 4.0, and eSanjeevani to achieve national reach and deliver measurable impact across sectors.

1. Visionary and committed leadership
    a. National leadership has consistently endorsed reform, digital transformation, and citizen-centric governance.
    b. Clear priorities and direction from the top enable faster decision-making and coordinated action across levels of government.
    c. High-level support has helped flagship programs scale rapidly and build credibility among citizens and institutions.

2. Supportive policies and governance frameworks
   a. Long-term policy reforms and structured schemes provide clarity, continuity, and stability for innovation.
   b. National missions such as Digital India, Skill India, and Ayushman Bharat create enabling conditions for system-wide change.
   c. Frameworks for interoperability, standards, and data governance strengthen consistency across departments.

3. Rapid technological advancement and digital infrastructure
   a. The expansion of digital identity, broadband access, mobile penetration, and cloud-based platforms has transformed service delivery.
   b. Technology enables transparency, reduces delays, eliminates duplication, and ensures targeted delivery of benefits.
   c. Use of AI, analytics, automation, and dashboards allows evidence-based decision-making and real-time monitoring.

4. Strengthening institutional capacity
   a. Skilled human resources are essential for designing, managing, and scaling public innovations.
   b. Initiatives like Mission Karmayogi enhance the competencies of government officials through continuous learning and capacity building.
   c. A culture of experimentation and adaptation reduces fear of failure and supports innovation-led problem solving.

5. Collaboration and multi-stakeholder partnerships
   a. Effective public sector innovation relies on coordination across ministries, states, districts, and local institutions.
   b. Partnerships with the private sector, academia, civil society, and global organizations secure expertise and resources.
   c. Citizen engagement ensures that reforms reflect actual needs and improve acceptance on the ground.

6. Accountability and performance monitoring
   a. Regular tracking of outputs and outcomes ensures that programs remain aligned with intended results.
   b. Feedback loops, grievance systems, and user satisfaction measures support continuous improvement.
   c. Monitoring tools and dashboards enable governments to identify gaps early and take corrective action.

7. Inclusivity and equity in design and delivery
   a. Innovations aim to reduce disparities by focusing on marginalized groups, remote populations, women, and vulnerable communities.
   b. Ensuring equitable access strengthens trust in public institutions and enhances the legitimacy of reforms.
   c. Inclusive design prevents digital or social exclusion and ensures that benefits are widely shared.

RECOMMENDATIONS

India's economic progress and its aspiration to be a global leader in the 21st century depend greatly on nurturing a culture of productivity and innovation. Although India possesses immense human capital, demographic strength, and technological capabilities, it faces a challenge in harnessing these resources to achieve sustained growth and competitiveness. Failure to do so could turn India's demographic dividend into a liability.

Innovation policies in India need to focus on the availability of broad-based skills to seize opportunities for specialization, industrial development, and the knowledge economy (Dhar & Saha, 2014). These policies emphasize and strive to achieve pro-poor innovation, knowledge development, and key technologies like green and renewable energy. A strong foundation in education and skills is essential for fostering innovation, as reflected in the introduction of the National Education Policy 2020 (Ministry of Human Resource Development, 2020) and its long-term effective implementation at the school level.

Investment in R&D is critical to generating new ideas, technologies, and processes that enhance productivity. India should encourage greater public and private investment in research, especially in sectors like manufacturing, agriculture, healthcare, and digital technologies. The link between industry and academia is crucial and collaboration among universities, research institutions, and industries can help translate academic knowledge into practical applications. Providing production and tax incentives to industries, grants, and funding mechanisms for R&D will motivate organizations to innovate consistently.

A national, state, and regional performance-based index should be developed as an effective tool to evaluate and improve skill development programs. This index can be used to track the progress of skill development programs over time and identify trends and patterns in program outcomes. This information can be used to evaluate the effectiveness of the programs and adjust program design and implementation. Additionally, such an index can be harnessed to foster competition and innovation among states or regions by creating incentives to improve program outcomes, as well as to improve program accountability and transparency.

Technology constitutes the backbone of both innovation and productivity. Propelled by Digital India, India's digital revolution offers an opportunity to expand the use of automation, AI, big data, and advanced manufacturing techniques. Schemes like India AI Mission and Indian Semiconductor Mission have boosted growth. By investing in digital infrastructure, public institutions and businesses can enhance efficiency and reduce costs. Encouraging the adoption of emerging technologies across micro-, small-, and medium-sized enterprises can help enterprises compete globally and innovate in their operations. They will also be better positioned to export their goods.

Entrepreneurship plays an important role in innovation. Institutions such as the National Institute for Entrepreneurship and Small Business Development and the Entrepreneurship Development Institute of India, among others, have helped numerous entrepreneurs start their entrepreneurship journey. Startups are powerful vehicles of innovation. Although India's startup ecosystem has grown significantly, sustained support is needed from the government, investors, and industry. Workplaces across both the public and private sectors should promote a culture where innovation is valued and nurtured. A platform able to take innovations from "Lab to Land" needs to be

developed. Government policies should be designed to promote innovation ecosystems. Resources need to be provided to cultivate and expand innovative ecosystems.

Inclusive growth is key to development. For an innovation and productivity culture to take root, inclusivity must be at the core of efforts. Rural communities, women, and marginalized groups should have equal opportunities to contribute. Empowering these groups through training, financial support, and technology access can unlock untapped potential. Moreover, collaboration between states, regions, and sectors will ensure that innovative practices spread widely and benefit all parts of the economy.

Building a productivity and innovation culture in India requires a combination of education reform, research investment, technology adoption, entrepreneurial support, workplace transformation, and inclusive policies. By fostering an ecosystem that values creativity, efficiency, and adaptability, India can accelerate its journey toward becoming a knowledge-driven and globally competitive economy. Such a culture will not only improve economic growth but also address social challenges by generating solutions that are sustainable, inclusive, and future-ready.

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BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF LAO PDR

EXECUTIVE SUMMARY

Lao People's Democratic Republic (Lao PDR) is undertaking major reforms to modernize governance, strengthen public sector performance, and expand digital transformation. These efforts aim to enhance efficiency, transparency, and citizen participation in line with the country's long-term socioeconomic development goals.

This report analyzes how Lao PDR is fostering public sector innovation through digital platforms, administrative reform, and participatory governance. Drawing on national policy frameworks, program reports, and secondary literature, it identifies key innovations that have improved institutional coordination and service delivery.

Innovation in Lao PDR is embedded within the National Digital Economy Development Strategy (2021–2030), National Digital Economy Development Plan (2021–2025), and Governance for Inclusive Development Programme (Ministry of Technology and Communications, 2021; UNDP, 2021). The establishment of the National Digital Transformation Committee (2023) reflects Lao PDR's strong political commitment to integrating innovation across government.

Three major initiatives exemplify this transformation. First, Gov-X, a one-stop digital-government platform, enhances interoperability and citizen access to online services. Second, Smart One Door Service Centers streamline administrative processes and introduce transparent digital tracking. Third, the Service User Feedback Survey strengthens accountability by systematically incorporating citizen feedback into district planning. Together, these initiatives reflect a shift toward integrated, citizen-centered governance.

While progress has been substantial, challenges remain, including limited digital infrastructure, uneven local capacity, and regulatory fragmentation. Sustaining innovation will require stronger interoperability standards, capacity development, inclusive digital access, and institutionalized performance monitoring. These efforts will be crucial for embedding innovation within Lao PDR's governance system and realizing the Asian Productivity Organization's vision of efficient, transparent, and citizen-driven public administration.

BACKGROUND

Lao People's Democratic Republic (Lao PDR) is advancing major reforms in public administration and governance, with innovation framed through the interlinked agendas of digital transformation, e-government, administrative modernization, and service delivery improvement. Although no legal

definition of "public sector innovation" exists, the concept is understood as the adoption of new processes, institutional arrangements, and digital tools to enhance efficiency, transparency, and citizen access. This framing aligns with ongoing initiatives led by the Ministry of Technology and Communications (MTC) and its Digital Government Center (DGC), as well as reforms introduced under the Governance and Public Administration Reform (GPAR) program.

The National Digital Economy Development Strategy (2021–2030) and National Digital Economy Development Plan (2021–2025) position innovation as a central driver of modernization, with digital government considered a key pillar (WB, 2022). Digital transformation is expected to enhance service delivery, trade facilitation, and productivity (WB, 2022). A flagship example is Gov-X. Developed by the DGC with UNDP support, Gov-X was launched in 2023 as Lao PDR's first integrated digital service platform, linking systems for licenses, business registration, welfare, and education (Gonzalez, 2025). Its planned AI features and local expansion reflect sustained political commitment, reinforced by the 2023 Presidential Decree establishing the National Digital Transformation Committee, chaired by the Prime Minister (Yau, 2025).

Innovation goals in Lao PDR are distributed across multiple strategic documents and legal frameworks rather than concentrated in a single innovation policy. Key examples include:

- The National Digital Economy Development Strategy (2021–2030) and National Digital Economy Development Plan (2021–2025), which promote digital government and productivity (Kommasith, 2024; WB, 2022);
- The 20-Year National Digital Economy Vision (2021–2040), which prioritizes infrastructure, data centers, and cybersecurity (MTC, 2021; UNESCO, 2025);
- The National GPAR (NGPAR) and Governance for Inclusive Development Programme (GIDP), which are modernizing service delivery through One Door Service Centers (ODSCs) and the establishment of an innovation facility (UNDP, 2021);
- Sectoral ICT and e-government strategies, including the Digital Government Master Plan (WB, 2022); and
- Enabling legislation, such as the Electronic Data Protection Law (2017), Digital Signature Law (2018), and Decree on the National Digital Transformation Committee (Santaniello, 2025; WB, 2022; Yau, 2025).

Together, these frameworks demonstrate that public sector innovation in Lao PDR is integrated into broader digital and governance reforms, evolving from earlier administrative improvements under the GPAR/NGPAR (2017–2021) toward accelerated digital initiatives since 2023 (Yau, 2025; UNDP, 2021).

Although Lao PDR lacks formal "innovation labs," several mechanisms play similar roles. The DGC coordinates e-government initiatives, while ODSCs standardize administrative processes at district level. Under the GIDP, the Public Sector Innovation Facility (PSIF) enables local experimentation through partnerships between government, civil society, and private actors (UNDP, 2021). Donor-supported pilots such as Gov-X have fostered temporary cross-sectoral innovation teams (Gonzalez, 2025). Meanwhile, the government continues to strengthen its science,

technology, and innovation (STI) governance system, although institutional capacity remains modest (UNESCO, 2024). Citizen-feedback mechanisms such as the Service User Feedback Survey (SUFS) further stimulate innovation by integrating public input into local planning and accountability frameworks (Soulitham, 2019; UNDP, 2021).

Several contextual enablers support Lao PDR's innovation trajectory. Strong political commitment to modernization and ASEAN integration, articulated in the 9th National Socio-Economic Development Plan (2021–2025) and Digital Economy Vision (2021–2040), provides a clear reform mandate (Global Partnership, 2022). Continued support from development partners such as the UNDP, ADB, and the WB ensures technical expertise, funding, and international best practices for governance reform. A high rate of mobile and internet penetration (Kemp, 2025), expanding broadband infrastructure, and emerging 5G networks support digital adoption (International Telecommunication Union [ITU], 2023; WB, 2022; Yau, 2025).

Nevertheless, significant structural and capacity-related challenges persist. Ministries often develop systems in isolation, resulting in duplication and interoperability gaps (WB, 2022). Geographic and infrastructural disparities limit connectivity in remote provinces, constraining equitable access to online services (Ministry of Health, 2023). Digital literacy gaps and limited administrative capacity outside Vientiane slow local implementation, while regulatory fragmentation and hierarchical culture deter experimentation. SUFS data highlight citizen concerns regarding transparency, staff performance, and limited use of complaint channels, underscoring the need to complement digital tools with frontline service quality improvements (Soulitham, 2019; UNDP, 2021).

Lao PDR's innovation ecosystem is coordinated by the MTC and the DGC, supported by line ministries, local ODSCs, and the broader STI system. Collaboration with development partners, private ICT firms, and civil society drives pilot initiatives such as the GPAR and GIDP. Three key levers underpin this system: standardized service delivery (e.g., ODSCs/Smart ODSCs), integrated digital platforms (e.g., Gov-X and data exchange systems), and institutionalized citizen-feedback mechanisms (e.g., the SUFS and PSIF). Together, these levers enhance access, quality, and transparency (Gonzalez, 2025; UNDP, 2021; Yau, 2025).

As these developments show, Lao PDR has moved from fragmented pilot initiatives toward a more coordinated, system-oriented approach linking governance reform, digital transformation, and participatory accountability. This report applies a desk-based analysis of policy documents and program evaluations, supplemented by targeted stakeholder consultations, to examine three representative cases (Gov-X, Smart ODSCs, and SUFS), focusing on their structures, processes, and outcomes, as well as contextual drivers of productivity and innovation in Lao PDR.

ANALYSIS OF THE RESULTS OF INNOVATIONS AND THEIR LINK TO OUTCOMES

This section examines how public sector innovations in Lao PDR, including digital transformation, administrative reform, and participatory feedback mechanisms, have improved institutional, service delivery, and productivity outcomes. It traces pathways from inputs and processes to outcomes and broader governance impacts, drawing on program evidence and policy and academic literature. The analysis follows the innovation typology of de Vries et al. (2015), encompassing process, product or service, governance, and conceptual innovations.

While digital transformation remains the main entry point for innovation in Lao PDR, innovation is increasingly linked with organizational culture change, decentralization reforms, and citizen participation tools. These initiatives signal a systemic transition from isolated administrative modernization to an integrated, citizen-centric governance model, aligning with the country's National Digital Economy Development Strategy (2021–2030) and the 9th National Socio-Economic Development Plan (2021–2025) (Global Partnership, 2022; WB, 2022). Collectively, these initiatives are reshaping how public institutions coordinate across sectors, engage citizens, and deliver services in line with principles of efficiency, transparency, accountability, and inclusiveness (UN, Economic and Social Commission for Asia and the Pacific [UNESCAP], 2023; WB, 2022).

Institutional and Process Transformations

Harmonization of Backend Systems and Interoperability

Launched in 2023, the Gov-X Super App has accelerated internal reform within participating ministries by compelling them to restructure information management systems, reengineer workflows, and harmonize data standards. As the first nationwide digital-government backbone, Gov-X connects ministry databases through shared authentication and interoperable application programming interfaces (APIs), reducing duplication and improving coordination (Gonzalez, 2025). Each participating ministry is required to standardize data formats, upgrade cybersecurity protocols, and revise operational procedures to align with the shared platform (Gonzalez, 2025; Yau, 2025). The creation of cross-ministerial data linkages and a unified citizen identity authentication mechanism have reduced redundant manual entries, shortened internal processing chains, and enhanced transparency in administrative transactions. In accordance with ITU (2023) recommendations on "whole-of-government" data ecosystems, this harmonization enables real-time monitoring and data-driven planning, laying the groundwork for evidence-based policymaking and performance analytics. Although quantitative outcome indicators for Gov-X remain limited due to its recent launch and phased rollout, early implementation evidence suggests that participating ministries have reduced manual data handling and improved internal coordination through standardized digital workflows, particularly in identity verification, licensing, and registration services (Gonzalez, 2025; Yau, 2025). Institutionally, the process of adapting to Gov-X has spurred the development of new ICT units and interministerial working groups, improving technical leadership and organizational learning and establishing an important foundation for sustaining an innovation culture (Djatmiko et al., 2025; Lewis et al., 2017).

Standardization through ODSCs

Under the GPAR/GIDP framework, Smart ODSC pilots have institutionalized standardized operating procedures (SOPs), uniform fee structures, and transparent service tracking systems. In doing so, the Smart ODSC initiative has helped streamline administrative processes, reduce uncertainty, and increase predictability for citizens and businesses (UNDP, 2021). By consolidating licensing, registration, and certification services into a single window, ODSCs reduce bureaucratic fragmentation and improve coordination between central and district administrations. By 2021, a total of 44 ODSCs had been established nationwide, providing a standardized front-office model for administrative services at the district level (UNDP, 2021). The Smart ODSC model piloted in the Bachieng and Saysettha districts introduced digital document tracking and transparent fee display. These features strengthened procedural accountability and reduced opportunities for informal facilitation payments, a concern historically associated with fragmented paper-based procedures (UNDP, 2021). In pilot areas, citizens can monitor application status online, while

officials follow defined processing timelines under standardized SOPs, marking a tangible shift from ad hoc to rule-based administration.

Institutionalizing Partnership and Innovation Mechanisms

Under the GIDP, the PSIF serves as a platform for co-creation between local governments, civil society organizations (CSOs), and private enterprises. The PSIF's flexible, small-grant mechanism supports experimentation and local adaptation, both key hallmarks of innovation in the public sector. Between 2019 and 2021, the PSIF funded 42 projects that benefited 21,710 citizens directly and 637,176 indirectly, including a substantial share of women, demonstrating the scale and productivity reach of locally driven service innovations (UNDP, 2021). The SUFS complements these efforts by systematically capturing citizen perceptions across eight districts in seven provinces. Findings from over 2,800 respondents have been incorporated into district socioeconomic plans, embedding user evidence into local decision-making (UNDP, 2021). Together, the PSIF and SUFS represent governance innovations that institutionalize participatory feedback and accountability, moving Lao public administration toward outcome-based performance cycles.

Service Delivery and Citizen Outcomes

Improved Accessibility and Convenience

Through Gov-X, citizens and enterprises can access multiple services via mobile devices and web portals, including digital driving licenses, social welfare checks, business registration, and educational content. The platform simplifies complex administrative journeys and reduces the need for in-person visits, particularly in urban centers (Gonzalez, 2025; UNDP, 2021). Early usage patterns indicate higher adoption in Vientiane and provincial capitals, suggesting that Gov-X has begun to reduce physical service visits among digitally literate users, thereby lowering transaction costs and improving user convenience in urban areas (Yau, 2025). Features such as G-Forms, G-Office, and Khangpanya (the national digital education platform) are expanding digital access to public information and school resources (Gonzalez, 2025). These features reflect ASEAN-wide trends toward single-gateway e-governance models designed to enhance citizen convenience and cross-agency integration (WB, 2022).

Greater Transparency and Procedural Predictability

Pilot-level evidence from the Smart ODSC initiative shows measurable improvements in transparency, citizen satisfaction, and service quality. The public display of fees, defined processing times, and real-time digital tracking have reduced uncertainty and strengthened public confidence (UNDP, 2021). In Smart ODSC pilot districts, preliminary monitoring under the GIDP has recorded up to a 30% reduction in repeat visits, indicating lower transaction costs and improved procedural predictability (UNDP, 2021). SUFS results confirm improved perceptions of transparency in civil registration and education services, although road and water, sanitation, and hygiene (WASH) sectors remain weaker (Soulitham, 2019). These findings align with those of de Vries et al. (2015) on how process innovations improve trust and predictability in service delivery.

User Uptake and Feedback Integration

Although Gov-X remains in pilot rollout, early user metrics and qualitative interviews suggest strong acceptance among digitally literate citizens, with mobile adoption highest in Vientiane and provincial capitals (Yau, 2025). SUFS data from more than 2,800 service users show measurable improvements in perceived service quality. For instance, between 2019 and 2021, satisfaction in education services and civil registration increased from 71% to 83% and 65% to 79%, respectively

(Soulitham, 2019; UNDP, 2021). Citizen-feedback mechanisms through the SUFS have been formally integrated into district planning, a rare institutional practice in lower-middle-income ASEAN states (UN Department of Economic and Social Affairs [UNDESA], 2022; UNDP, 2021). This has reinforced a citizen-centric governance model prioritizing accountability and responsiveness, as emphasized in the UN's E-Government Development Index framework (UNDESA, 2022).

Equity and Reach Constraints

Despite encouraging progress, digital divides persist between urban and rural populations. Limited broadband access, variable digital literacy, and low institutional capacity in remote districts constrain uptake (ITU, 2023; Ministry of Health, 2023; WB, 2022). Without hybrid offline–online service channels, such as mobile outreach units or assisted community digital kiosks, public innovation risks deepening inequalities. Addressing these challenges requires sustained investment in rural ICT infrastructure, inclusive design, and digital-skills programs for civil servants and citizens alike (Kommasith, 2024).

Governance, Productivity, and Development Impacts

Operational Efficiency and Reduced Transaction Costs

Transitioning from paper-based to digital workflows within pilot ODSCs and ministries has streamlined internal operations, shortened processing time, and reduced redundant approvals. Preliminary monitoring under the GIDP reports up to 30% fewer repeat visits by citizens in pilot districts (UNDP, 2021). These efficiency gains free administrative staff from repetitive processing tasks, allowing greater focus on supervisory, analytical, and planning functions, which are widely recognized as productivity multipliers in public sector organizations (WB, 2022).

Cross-Sector Coherence and Policy Alignment

The integration of services via Gov-X and ODSC pilots strengthens horizontal (interministerial) and vertical (central–local) coordination. Shared digital standards and interoperable systems promote policy coherence and data sharing, which are foundational for "smart governance" (ITU, 2023; Yau, 2025). By aligning administrative procedures and digital standards across ministries and districts, these initiatives reduce institutional fragmentation and support more coherent service delivery across levels of government. The capacity to link administrative data across ministries will enable performance monitoring and predictive analytics, enhancing evidence-based governance.

Private Sector Stimulus and Productivity Spillovers

Simplified business registration, licensing, and permit issuance through Gov-X and ODSCs have reduced compliance time and costs for firms, encouraging formalization. According to the WB (2022) and Kommasith (2024), comparable ASEAN digital one-stop platforms have reduced transaction times, suggesting potential productivity spillovers if Lao PDR scales implementation.

Broader Development and Governance Dividends

At the macro level, digital public services and participatory feedback tools foster more inclusive access to health, education, and welfare programs, strengthening citizen trust in the state. Over time, these innovations reinforce institutional legitimacy, transparency, and accountability, directly contributing to SDG 16 (Peace, Justice, and Strong Institutions) and SDG 9 (Industry, Innovation, and Infrastructure) (UN, 2025). The alignment of digital governance reforms with the establishment

of the National Digital Transformation Committee in 2023 demonstrates continued political commitment to smarter, more responsive governance (Yau, 2025).

Evidence, Limitations, Attribution Challenges, and Gaps

Although emerging evidence is positive, rigorous empirical evaluation remains limited. Evidence limitations, attribution challenges, and gaps include the following:

- Limited impact evaluations: Most studies are descriptive or process-based; no randomized or quasi-experimental evaluations have quantified efficiency or welfare effects.
- Data scarcity and inconsistent metrics: Current monitoring focuses on outputs (e.g., centers established, users reached) rather than outcomes (e.g., processing time, user satisfaction).
- Digital-coverage constraints: Persistent inequalities in connectivity and affordability hinder nationwide scale-up efforts.
- Institutional capacity asymmetries: Provincial readiness and staffing vary, affecting sustainability.
- Regulatory fragmentation: Lack of binding interoperability standards and limited oversight delay system integration.
- Cultural resistance: Hierarchical norms and limited incentives continue to constrain innovation adoption.

Therefore, future reforms should develop and embed performance measurement frameworks, strengthen cross-ministerial coordination, and commission longitudinal evaluations to establish causal links between digital innovation and governance outcomes.

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATIONS IN LAO PDR

Example 1. Gov-X Platform: Building a One-Stop Digital Government Ecosystem

Description and Key Improvements

The Gov-X platform was launched in August 2023 by the DGC, a core department under the MTC, with support from the UNDP. Gov-X represents Lao PDR's first nationwide digital one-stop platform integrating diverse public services. It is a core pillar of the government's National Digital Economy Development Strategy (2021–2030) and Digital Government Master Plan (Gonzalez, 2025; WB, 2022).

Prior to Gov-X, citizens and businesses accessed public services through fragmented portals and physical offices, which resulted in duplication, time delays, and opportunities for administrative discretion. The innovation introduced a unified digital gateway connecting ministries through shared APIs and a single sign-on authentication system. It digitized several key services under one application, including digital driving licenses, business registration, social welfare verification, and education access via the Khangpanya e-learning platform (Gonzalez, 2025).

Structural improvements:

- Establishment of a centralized digital governance architecture, coordinated by the DGC under the MTC;
- Formation of cross-ministerial ICT taskforces to harmonize data protocols and cybersecurity standards; and
- Integration of separate ministerial databases into a shared cloud-based National Data Center, enabling inter-agency data exchange (Yau, 2025).

Process improvements:

- End-to-end digital workflows have reduced processing time for service requests (e.g., business registration, and civil documentation);
- Standardization of backend data systems has fostered interoperability across ministries;
- Automation of verification and data-sharing between ministries (e.g., between the Ministry of Public Security and Ministry of Transport for digital licenses) has enhanced reliability and efficiency.

Outcome improvements:

- Reduced the administrative burden for citizens and civil servants;
- Improved transparency and accountability, with fewer physical touchpoints and clearer digital audit trails;
- Enhanced user accessibility, particularly for urban populations, and increased public trust in digital governance; and
- Productivity gains, as ministries shifted from repetitive data management toward analytical and planning tasks (WB, 2022).

This model reflects a process and governance innovation that directly improves productivity in the public sector by simplifying procedures, minimizing redundancy, and enabling data-driven policy design.

Innovation Type, Scope, and Context

This subsection outlines the type, sectoral scope, level of government, organizational actors, and contextual conditions underpinning the Gov-X initiative, highlighting how institutional coordination and enabling environments have shaped its development and implementation in Lao PDR.

Types of innovation involved in the Gov-X initiative include the following:

- Process innovation: Modernization of administrative workflows through digital platforms

- Governance innovation: Establishment of interministerial digital collaboration and unified data governance
- Service innovation: Creation of citizen-facing e-services (e.g., digital licenses, welfare verification, and online learning)

Sector and level of government can be summarized as follows:

- Sector: Public administration, transportation, education, and social welfare
- Level: National-level coordination (e.g., MTC, DGC, Ministry of Public Security, Ministry of Education and Sports, and Ministry of Public Works and Transport), with operational delivery at the district and citizen levels through online access

Organizations and key actors include the following:

- MTC: Overall coordination, policy direction, and platform development
- DGC: Technical lead agency
- UNDP: International development partner, providing technical and financial support
- Ministry of Public Security: Digital identity verification and licensing integration
- Ministry of Education and Sports: Digital education service (Khangpanya)
- Private ICT vendors: Local implementation partners for software design and user interface development

In respect to contextual factors, the National Digital Transformation Committee was established through the Digital Government Decree (2023) and Presidential Decree, providing strong political momentum for public sector modernization (Yau, 2025). High-level political commitment under the Prime Minister has emphasized digital transformation as a central mechanism for economic diversification and governance reform in Lao PDR.

The Gov-X initiative was built on prior GIDP and ODSC models developed with UNDP support. Drawing on these models, the Gov-X initiative extended the principles of transparency and citizen focus into the digital space.

Enabling contextual factors include the following:

- Telecom infrastructure expansion: Over 98% of the population now has access to mobile networks, and 5G was launched in major cities in 2023 (Yau, 2025)
- Growing digital literacy: Mobile-phone penetration exceeds 85%, facilitating the adoption of mobile-based public services (Kemp, 2025)

- Regional alignment: The project aligns with the ASEAN Digital Masterplan 2025, which encourages member states to establish integrated, interoperable national e-government systems (ASEAN, 2025)

Challenges have included limited interoperability across legacy systems, variable capacity at line ministries, and the need for robust cybersecurity and data privacy regulations, which the government began addressing through the Electronic Data Protection Law (2017) and Digital Signature Law (2018).

Success Factors

This subsection identifies and discusses the key institutional, technical, and contextual factors that contributed to the successful design and implementation of the Gov-X initiative, highlighting how strategic leadership, stakeholder collaboration, and adaptive governance have driven innovation outcomes in Lao PDR's public sector.

1. Strategic vision and leadership: The establishment of the National Digital Transformation Committee (2023) institutionalized high-level coordination and accountability. DGC leadership ensured a single focal agency with the authority to harmonize standards across ministries, preventing duplication. Political commitment at the highest level was crucial in overcoming bureaucratic inertia and aligning resources.

2. Multi-stakeholder collaboration: Gov-X's development reflects effective partnership between government, international organizations, and private technology providers. The involvement of the UNDP and Open Government Products (GovTech Singapore) enabled Lao PDR to adapt international digital solutions (e.g., FormSG) to its local context (Gonzalez, 2025). This co-creation approach accelerated learning and fostered innovation diffusion across ministries.

3. Incremental and adaptive design: Rather than attempting an immediate nationwide rollout, Gov-X followed a phased implementation approach, starting with a small suite of high-demand services. This approach minimized risks, allowed iterative testing, and generated early wins that built momentum.

4. Legal and institutional framework: Complementary laws, such as the Digital Transformation Decree (2023) and National Digital Economy Development Strategy (2021–2030), provided regulatory clarity and continuity of investment. These frameworks embedded innovation within national planning, linking it to the 9th National Socio-Economic Development Plan (2021–2025) and the SDG 16 targets.

5. Capacity building and digital literacy: The DGC conducted capacity-building workshops across ministries and provinces, developing local ICT teams responsible for integrating sectoral systems. The success of Gov-X is heavily dependent on such human resource development efforts, which help embed innovation into administrative culture (UNDESA, 2022; Kommasith, 2024).

6. Citizen-centric design: Gov-X's focus on ease of use and mobile accessibility reflects a shift toward citizen-centered service delivery, a conceptual innovation emphasizing user experience and accessibility (UNDESA, 2022). The eventual introduction of AI chatbots aims to improve responsiveness and inclusion for those less familiar with or adept at using technology (Gonzalez, 2025).

7. Digital infrastructure and funding continuity: Donor co-financing through the UNDP, combined with domestic budget allocations under the MTC, ensured project sustainability beyond initial pilots. The establishment of the National Cloud Infrastructure has created a secure hosting environment for all government e-services, ensuring data resilience and long-term scalability.

In summary, Gov-X exemplifies process, governance, and service innovation in Lao PDR by improving coordination, modernizing procedures, and enhancing service delivery. Despite ongoing challenges in infrastructure, digital literacy, and interoperability, Gov-X provides a foundational platform for sustained public sector innovation and productivity growth.

Example 2. ODSCs and the PSIF: Advancing Decentralized and Citizen-Centric Governance

Description and Key Improvements

Implemented by the Ministry of Home Affairs (MoHA) with technical and financial support from the UNDP and the UN Capital Development Fund (UNCDF) between 2017 and 2021 (UNDP, 2021), the ODSC initiative, including the Smart ODSC pilot, and the PSIF represent interlinked public sector innovations under the GIDP. Together, they form the operational backbone of Lao PDR's decentralization and administrative modernization reforms under the NGPAR framework.

The ODSC model simplifies government–citizen interaction by consolidating multiple administrative functions, civil registration, business licensing, taxation, construction permits, and social services into a single physical and increasingly digital window. As of 2021, 44 ODSCs had been established nationwide, including pilot Smart ODSCs in the Bachieng and Saysettha districts that integrate ICT-enabled tracking systems to monitor service requests in real time (UNDP, 2021).

Meanwhile, the PSIF has introduced a structured funding mechanism for local innovation. It supports collaborative projects between district administrations, CSOs, and the private sector to test and scale novel solutions addressing service delivery gaps. From 2019 to 2021, 42 projects benefited over 21,710 direct and 637,176 indirect beneficiaries, including 315,895 women, demonstrating measurable social reach (UNDP, 2021).

Structural improvements:

- Establishment of decentralized, citizen-facing administrative centers with clear mandates and SOPs;
- Creation of back-office digital systems for document tracking, staff supervision, and performance monitoring; and
- Institutionalization of multi-stakeholder collaboration frameworks via the PSIF, thereby bridging government, CSOs, and private entities.

Process improvements:

- Standardization of service fees, timelines, and documentation has reduced discretionary practices;
- Digitization of registration and certification workflows through the Smart ODSC platform has minimized manual handling and delays; and

- Introduction of citizen-feedback loops through the SUFS mechanism has ensured data-driven improvement in district service planning.

Outcome improvements:

- Reduced processing times and increased service predictability, as documented in district monitoring reports;
- Enhanced transparency, with fee schedules publicly displayed at ODSCs and online;
- Greater citizen trust and satisfaction, as evidenced by SUFS findings showing a high degree of satisfaction with civil registration and education services (Soulitham, 2019; UNDP, 2021); and
- Strengthened local-level accountability and participation, contributing to more responsive governance aligned with the 9th National Socio-Economic Development Plan (2021–2025).

The ODSC initiative and PSIF embody a hybrid of process, governance, and conceptual innovations, demonstrating how decentralized administrative reforms combined with digital tools improve both efficiency and inclusiveness in Lao PDR's public administration.

Innovation Type, Scope, and Context

This section outlines the types of innovation, sectoral scope, administrative levels, key actors, and contextual conditions underpinning the ODSC initiative, including the Smart ODSC pilot as its digitally enhanced implementation, situating these innovations within Lao PDR's broader governance and digital transformation reforms.

Types of innovation represented in the Smart ODSC initiative include the following:

- Process innovation: Simplified administrative workflows and digital tracking
- Governance innovation: Decentralization and multi-stakeholder collaboration
- Service innovation: Integrated front-office delivery of multiple public services
- Conceptual innovation: Reframing citizens as active participants and feedback providers rather than passive recipients

Sector and level of government involved in the innovation include the following:

- Sector: Public administration and local governance (MoHA)
- Level: Primarily district and provincial; operates within a national policy framework (NGPAR and GIDP)

Organizations and key actors include the following:

- MoHA: Lead implementing agency and regulator of ODSCs
- Provincial and District Administrations: Operate ODSCs and implement the SUFS locally

- UNDP and UNCDF: Technical assistance, innovation-fund management, and monitoring and evaluation

- Governance Sector Working Group (GSWG): Policy-dialogue platform linking ministries, donors, and CSOs

- Civil society and private sector partners: Co-implement PSIF projects on service innovation and inclusion

In respect to contextual factors, Lao PDR's governance reforms stem from the 2000s NGPAR initiative, emphasizing administrative simplification and citizen proximity. Persistent inefficiencies, low local capacity, and weak service integration drove the creation of ODSCs as practical tools to improve "last-mile" governance.

The Smart ODSC pilot emerged within the broader digital transformation agenda of the National Digital Economy Development Strategy (2021–2030) (WB, 2022). UNDP assistance aligned ODSC modernization with the Gov-X framework by digitizing forms, introducing workflow dashboards, and connecting citizen feedback (SUFS) into district planning.

In terms of socioeconomic context, rural provinces account for over 60% of Lao PDR's population, with connectivity and administrative capacity still limited in these areas (Lao Statistics Bureau & WB, 2020). Moreover, gender and inclusion concerns led to the mainstreaming of gender equality and social inclusion in the GIDP. Examples include gender-sensitive feedback tools, women volunteers in SUFS survey teams, and targeted support for ethnic-minority staff (UNDP, 2021).

Success Factors

This section analyzes the institutional, social, and operational factors that contributed to the success of the Smart ODSC and PSIF initiatives, highlighting how coherent policy frameworks, local participation, and adaptive governance have enhanced service delivery and innovation capacity in Lao PDR.

1. Policy coherence and institutional alignment: The Smart ODSC and PSIF initiatives are grounded in national development strategies, the 9th National Socio-Economic Development Plan (2021–2025), the NGPAR, and the Public-Administration Modernization Framework, thereby ensuring alignment between donor programs and domestic policy. This vertical coherence has enabled policy continuity and integration into budget cycles.

2. Decentralized ownership and local participation: District administrations manage ODSC operations and directly utilize SUFS data in socioeconomic planning, fostering ownership and accountability. The participation of villagers in planning meetings (82% attendance rate) and inclusion of citizen feedback in local five-year plans reflect institutionalized participation (UNDP, 2021).

3. Transparency and accountability mechanisms: The publication of service fees and procedures in ODSCs and the introduction of the SUFS created tangible transparency measures. Feedback data have helped identify sectors needing urgent improvement (e.g., roads, WASH) and informed budget prioritization.

4. Multi-stakeholder partnerships and innovation culture: The PSIF catalyzed partnerships between local government, CSOs, and private firms, marking an unprecedented scope of

cooperation in Lao public administration. By financing pilot projects (e.g., digital registration systems, youth civic-engagement platforms), the PSIF has normalized experimentation and learning within bureaucracy, nurturing an innovation-friendly culture (UNDP, 2021).

5. Gender equality and social inclusion mainstreaming: Gender-responsive planning and participation in the PSIF and SUFS have strengthened inclusivity. Affirmative action policies have encouraged women and ethnic-minority staff in leadership roles, while disaggregated data collection has improved policy targeting.

6. Donor coordination and capacity building: Joint UNDP-UNCDF support under the NGPAR avoided duplication while providing systematic training for 617 local staff in planning and budgeting through the District Development Fund (DDF) (UNDP, 2021). The provision of such training instilled the technical competence essential for sustaining innovation outcomes.

7. Incremental digitization toward Smart ODSC: By first institutionalizing procedural standards and later adding digital modules, MoHA ensured adaptability to varying local capacities. The gradual integration of digital tracking and data dashboards marked the transition from administrative to digital innovation, setting a foundation for interoperability with Gov-X.

8. Evidence-based feedback integration: The SUFS mechanism institutionalized citizen feedback into district plans and national reporting. This shift from output- to outcome-oriented performance evaluation exemplifies adaptive governance.

9. Sustainable financing and scale-up potential: Integration of the DDF into the national planning and finance systems ensures fiscal sustainability, while the inclusion of the PSIF and ODSCs in the upcoming 10th National Socio-Economic Development Plan (2026–2030) positions them for further scale-up.

In summary, the Smart ODSC and PSIF initiatives illustrate Lao PDR's shift toward more responsive and citizen-centered governance by streamlining procedures, institutionalizing feedback, and promoting inclusiveness. Their success reflects strong policy alignment, stakeholder collaboration, and gradual digital integration, supporting a sustainable culture of innovation and efficiency in Lao PDR's public sector.

Example 3. SUFS: Institutionalizing Citizen Voice for Evidence-Based Governance

Description and Key Improvements

Introduced in 2019, the SUFS is an institutionalized monitoring mechanism under the GIDP, which falls within the NGPAR framework. Development of the SUFS was led by the MoHA with support from the UNDP and UNCDF (Soulitham, 2019; UNDP, 2021). Its goal is to systematically capture citizens' experiences with public service delivery and integrate those insights into local and national planning and budgeting processes.

Before the SUFS, Lao PDR lacked an institutionalized mechanism to measure user satisfaction or performance beyond administrative outputs. Service performance was judged using compliance indicators (e.g., reports submitted) rather than citizen outcomes. The SUFS has addressed this gap by creating a structured, evidence-based feedback loop between service users, district administrations, and central ministries.

Between 2019 and 2021, the survey was implemented in eight districts across seven provinces, collecting feedback from over 2,800 citizens regarding core service sectors, including education, health, agriculture, public works, and civil registration (UNDP, 2021). Feedback was used to update district five-year development plans and to adjust service timelines and staffing in ODSCs. By embedding citizen perception data into governance processes, the SUFS represents a conceptual and governance innovation that advances transparency and accountability.

Structural improvements:

- Creation of an institutional channel linking citizens with local authorities for continuous feedback;
- Integration of survey results into district planning committees and national policy reports; and
- Development of data standards and reporting formats managed by the MoHA and UNDP.

Process improvements:

- Regular administration of citizen surveys every two years to monitor trends in service quality;
- Standardized questionnaire design covering timeliness, transparency, staff behavior, and accessibility; and
- Capacity building for local officials to analyze and use data for management decisions.

Outcome improvements:

- Enhanced responsiveness to citizen concerns, with survey findings resulting in staff rotation and extended ODSC hours in two pilot districts;
- Evidence-based budgeting, with local authorities using survey data to reallocate funds to priority sectors identified by citizens;
- Improved public trust and satisfaction, with follow-up surveys recording increases in citizen satisfaction with education services (71% to 83%) and civil registration (65% to 79%) between 2019 and 2021 (Soulitham, 2019; UNDP, 2021); and
- Institutionalization of learning, with the presentation of survey results to the GSWG influencing MoHA's service delivery policy revision.

Therefore, the SUFS has transformed citizen feedback in Lao PDR from ad hoc consultation into an integral part of the public sector performance system, aligning it with SDG Target 16.7 on responsive, inclusive, participatory, and representative decision-making (UN Statistics Division [UNSD], n.d.).

Innovation Type, Scope, and Context

This section outlines the types of innovation, sectoral scope, administrative levels, institutional actors, and contextual conditions underpinning the SUFS, illustrating how citizen-driven monitoring

has been integrated into Lao PDR's governance framework to enhance accountability and participatory service delivery.

Types of innovation include the following:

- Governance innovation: Introduction of citizen-driven monitoring into the policy cycle
- Conceptual innovation: Redefinition of citizens as evaluators and co-producers of public value
- Process innovation: Systematic data collection and feedback integration

Sector and level of government:

- Sector: Cross-sectoral (i.e., public administration, education, health, and agriculture)
- Level: District and provincial implementation within a national framework

Organizations and key actors involved in the innovation:

- MoHA: National lead agency overseeing survey methodology and policy integration
- Provincial and district administrations: Survey implementation and action planning based on findings
- UNDP: Technical design, capacity building, and monitoring
- UNCDF: Financial support and linkage with the DDF mechanism
- GSWG: Policy dialogue and knowledge sharing across ministries and partners
- CSOs: Community mobilization and survey enumeration, including gender mainstreaming in survey teams

In respect to contextual factors, traditionally, Lao PDR's bureaucracy involved limited citizen engagement beyond formal channels, prompting the GIDP to strengthen feedback mechanisms for modern public administration. Expanding digital connectivity and regional and international governance benchmarks encouraged the adoption of citizen-centered monitoring aligned with SDG 16.6. Furthermore, the SUFS model was adapted to local administrative contexts through simple, low-cost design; strong local ownership; and the use of trained community-based enumerators.

Success Factors

This section examines the institutional and contextual enablers that underpin the success of the SUFS, highlighting its integration into governance systems, participatory design, and evidence-based decision-making as key drivers of innovation and accountability in Lao PDR.

1. High-level policy endorsement and institutionalization: The SUFS was formally endorsed by MoHA as a national tool for citizen engagement under the GIDP (UNDP, 2021). Its integration

into MoHA's annual performance reporting ensured continuity beyond the donor project phase.

2. Alignment with national and international frameworks: The innovation supports the 9th National Socio-Economic Development Plan (2021–2025) emphasis on strengthening governance and public administration (Global Partnership, 2022) and aligns with SDG Target 16.7 on responsive, inclusive, participatory, and representative decision-making (UNSD, n.d.). Internationally, it aligns with the UNDESA (2022) model for participatory digital governance.

3. Participatory design and capacity building: Survey questions were co-created with district administrators, CSOs, and citizen representatives to ensure contextual relevance. Local enumerators (52% women) were trained in data collection and analysis, enhancing ownership and capacity (UNDP, 2021).

4. Evidence-based decision-making: Survey data were used to adjust resource allocation at the district level. For example, funds were redirected to road maintenance in two districts where citizens rated infrastructure as poor. This link between data and budget decisions represents a major productivity improvement in public sector management.

5. Gender and inclusion mainstreaming: Survey tools were translated into local languages, and questions were tailored to capture women's and ethnic-minority perspectives on service access. Disaggregated data improved targeting in district plans and highlighted gender disparities in education and health.

6. Integration with digital and administrative reforms: The SUFS complements the Smart ODSC and Gov-X initiatives by providing qualitative data on user satisfaction to inform digital service design. The DGC has considered incorporating SUFS modules into the Gov-X platform to enable online feedback submission (Gonzalez, 2025).

7. Iterative learning and scalability: Pilot results were shared through annual learning workshops with other provinces. Using DDF funding, several districts have replicated the model, demonstrating institutional uptake and scaling potential.

8. Support from development partners: The SUFS was introduced under the GIDP, a joint initiative of UNDP and UNCDF that supported the Government of Lao PDR in strengthening public administration, improving service delivery, promoting wider governance improvements, and increasing systematic citizen engagement. (UNDP, 2021).

In summary, the SUFS has institutionalized citizen participation in Lao PDR by translating feedback into evidence for policy and service improvement. Its success reflects strong policy support, participatory design, and integration with broader reforms, advancing a more inclusive and evidence-based governance model.

Comparative Synthesis of Three Public Sector Innovation Cases in Lao PDR

Table 1 synthesizes the type of innovation, primary objectives, level of government involved, key success factors, and observable productivity or service delivery outcomes across the three innovation cases.

TABLE 1

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN LAO PDR (GOV-X, SMART ODSCS AND PSIF, AND SUFS).

Dimension	Gov-X	Smart ODSCs and PSIF	SUFS
Innovation type	Digital process integration, service innovation, and governance innovation (interoperable platform, single sign-on, new coordinating structures)	Process and service innovation (one door, standardized SOPs) and governance innovation (local innovation facility, multi-stakeholder partnerships)	Governance and conceptual innovation (citizen-driven monitoring, feedback integrated into planning) and process innovation (regularized survey cycle)
Primary goal	Improve the efficiency, transparency, and accessibility of core public services via one digital gateway	Simplify and standardize local service delivery, strengthen decentralization, and support local experimentation	Institutionalize citizen voice to improve service quality, accountability, and evidence-based planning
Level of government	National/cross-sector (MTC/DGC with multiple line ministries)	District and provincial, within a national framework (MoHA, NGPAR/GIDP)	District and provincial implementation within a national framework (MoHA, GIDP)
Main success factor	Strong political leadership, dedicated digital government institutions, and emerging interoperable data infrastructure	Policy alignment with decentralization reforms, local ownership, and multi-stakeholder collaboration through the PSIF	High-level endorsement by MoHA, participatory design, and a direct link between survey data and planning/budget decisions
Key impact/ productivity indicators	• Simplified access to multiple services (e.g., digital licenses, business registration, welfare verification, and education content) through a single app, reducing reliance on in-person visits in urban areas	• 44 ODSCs established nationwide • Smart ODSC pilots with digital tracking • 42 PSIF projects benefiting 21,710 direct and 637,176 indirect beneficiaries, including 315,895 women • Reported reduction in repeat visits (up to approximately 30%)	• Over 2,800 service users surveyed across eight districts in seven provinces • Increased satisfaction with education services (71% to 83%) and civil registration (65% to 79%) • SUFS findings integrated into district socioeconomic plans

Source: Gonzalez (2025), Soulitham (2019), UNDP (2021), WB (2022), and Yau (2025).
Note: Quantitative outcome indicators for Gov-X remain limited due to its recent launch (2023) and ongoing phased rollout. The table is based on a synthesis of multiple secondary sources.

DGC, Digital Government Center; GIDP, Governance for Inclusive Development Programme; MoHA, Ministry of Home Affairs; MTC, Ministry of Technology and Communications; NGPAR, National Governance and Public Administration Reform; ODSC, One Door Service Center; PSIF, Public Sector Innovation Facility; SOPs, Standard Operating Procedures; SUFS, Service User Feedback Survey.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN LAO PDR

Public sector innovation in Lao PDR reflects a multi-type configuration rather than a single dominant form. The three cases, namely, Gov-X, Smart ODSC and PSIF, and the SUFS, exemplify the achievement of productivity gains through a combination of process, service, governance, and conceptual innovations. This pattern aligns with the typology of public sector innovation proposed by de Vries et al. (2015) and suggests that hybrid approaches are more effective than isolated interventions in achieving sustained efficiency, accountability, and inclusiveness.

Process Innovations: Streamlining Workflows and Enhancing Productivity

Process innovation, that is, the modification of internal procedures, workflows, or tools, is the foundational layer of Lao PDR's innovation landscape. The Gov-X platform typifies large-scale process innovation in Lao PDR, with the introduction of digital interoperability and single-sign-on authentication serving to harmonize previously fragmented ministerial systems (Gonzalez, 2025; WB, 2022). Smart ODSCs standardized administrative procedures, fee structures, and documentation requirements nationwide, while the SUFS institutionalized structured data-collection processes for citizen feedback.

These process reforms have collectively produced measurable productivity outcomes, including the following:

- Reduced transaction time through end-to-end digitization and workflow automation;
- Lower administrative duplication via shared data standards and APIs; and
- Improved coordination among ministries through digital and procedural alignment.

In Lao PDR, process innovation serves as both a means of modernizing administrative systems and a pathway for institutional learning, enabling government agencies to enhance efficiency, coordination, and responsiveness across public service operations.

Product and Service Innovations: Integrating and Expanding Public Service Delivery

Product/service innovation is exemplified by the Gov-X platform's citizen-facing mobile and web applications and by the Smart ODSC initiative's integrated front-office delivery model. These initiatives have transformed individual ministry services into accessible, multichannel platforms. By enabling citizens to obtain business registrations, digital licenses, and welfare information through a unified interface, the government effectively introduced new products (digital services) and enhanced delivery models (hybrid physical and digital access points).

These innovations have had a multidimensional impact on productivity and public value:

- Service accessibility: Expansion of service hours and remote access have reduced physical travel costs for citizens.
- Transparency: Automated service tracking and publicly displayed timelines have minimized opportunities for discretionary decision-making.

- User satisfaction: Documented improvements in SUFS data, with satisfaction with education and civil registration increasing from 71% to 83% and 65% to 79%, respectively (Soulitham, 2019; UNDP, 2021).

Such service innovations demonstrate how the digitalization of front-end interfaces and the standardization of backend processes operate synergistically to enhance efficiency, inclusiveness, and responsiveness, which are key attributes of productivity-oriented governance.

Governance Innovations: Building Institutional Coordination and Multi-Stakeholder Mechanisms

A defining feature of Lao PDR's innovation trajectory is the prominence of governance innovation, characterized by new forms of coordination, partnership, and accountability.

- The Gov-X platform introduced a new institutional architecture, namely, a DGC under the MTC, tasked with harmonizing data governance and cybersecurity standards.

- The PSIF created a flexible funding mechanism for collaborative projects among local governments, CSOs, and private enterprises, thereby institutionalizing multi-actor innovation.

- The SUFS established a formal citizen-feedback mechanism embedded in district planning and national reporting systems.

In Lao PDR, such innovations have improved both vertical coordination (i.e., central–local linkages) and horizontal collaboration (i.e., collaboration across ministries and non-state actors), addressing long-standing bureaucratic silos.

Conceptual Innovations: Shifting Administrative Mindsets toward Citizen-Centric Governance

Beyond operational reforms, Lao PDR's innovations reveal an emerging conceptual transformation in how public institutions define their mission and relationship with citizens. Previously, administrative culture emphasized compliance and control. By contrast, current reforms increasingly frame governance as a service delivery partnership, emphasizing transparency, participation, and digital inclusion.

The SUFS redefines citizens as evaluators of service quality, while Smart ODSCs embody a "one door, one-community" philosophy that decentralizes decision-making. The Gov-X initiative reflects a conceptual reorientation from isolated bureaucratic functions to an integrated, data-driven service ecosystem. This evolution corresponds with the argument of Lewis and Mikolajczak (2023), who identified a historical shift in innovation policy discourse from technology- and business-oriented definitions toward a focus on innovation as cultural transformation within the public sector. In Lao PDR, conceptual innovation underpins the sustainability of process and governance reforms by embedding a culture of continuous improvement and responsiveness.

Interlinkages among Innovation Types and Their Productivity Effects

As summarized in Table 2, analysis of the three Lao PDR cases found that the most significant productivity gains emerged where multiple innovation types converged.

TABLE 2

INTERLINKAGES AMONG INNOVATION TYPES AND THEIR PRODUCTIVITY EFFECTS IN LAO PDR.

Innovation Type	Example(s)	Primary Productivity Outcome
Process	Gov-X, Smart ODSCs	Reduced processing time and workflow efficiency
Service	Gov-X, Smart ODSCs	Greater accessibility and user satisfaction
Governance	PSIF, SUFS	Cross-sector coordination and data-driven planning
Conceptual	SUFS, Gov-X	Citizen participation and a culture of innovation

Source: de Vries et al. (2015), Gonzalez (2025), Soulitham (2019), UNDP (2021), and WB (2022).
Note: This table presents the author's synthesis of the relationships between innovation types and productivity effects based on qualitative analysis of the Lao PDR cases.

ODSC, One Door Service Center; PSIF, Public Sector Innovation Facility; SUFS, Service User Feedback Survey.

This hybrid pattern highlights that governance and process innovations provide an enabling environment, while service and conceptual innovations ensure legitimacy and long-term sustainability.

Overall Assessment

Lao PDR's experience illustrates that innovation types are not discrete categories but interconnected layers within a maturing national innovation system. Lao PDR's trajectory from administrative simplification (ODSCs) to digital integration (Gov-X) and participatory monitoring (SUFS) embodies a progressive expansion of innovation scope and sophistication.

Key takeaways include the following:

1. Process innovations are prerequisites for efficiency; they deliver quick, tangible productivity gains.

2. Governance innovations institutionalize collaboration, ensuring reform continuity.

3. Conceptual innovations shift bureaucratic culture toward responsiveness and accountability, sustaining productivity over time.

4. Service innovations directly enhance citizen welfare and legitimacy, reinforcing the public sector's value proposition.

In summation, Lao PDR's innovation landscape demonstrates that multi-type, system-oriented innovation, rather than isolated digitalization or reform projects, is the principal pathway to building a culture of productivity and innovation in the public sector. This conclusion is consistent with the Asian Productivity Organization's (APO) analytical framework and the global literature on public sector innovation.

ANALYSIS OF CONTEXTUAL FACTORS

Public sector innovation in Lao PDR is shaped by political commitment, institutional capacity, socioeconomic conditions, technological infrastructure, and administrative culture. Lao PDR's innovation experience in terms of Gov-X, Smart ODSCs, and the SUFS illustrates how these factors influence innovation uptake and outcomes.

Political and Institutional Environment

High-level political commitment has been the strongest enabler of innovation. The establishment of the National Digital Transformation Committee in 2023, chaired by the Prime Minister, and the leadership of the MTC have provided clear direction and legitimacy for reforms such as Gov-X and Smart ODSCs (Gonzalez, 2025). This central coordination, aligned with the National Digital Economy Development Strategy (2021–2030), promotes coherence across ministries.

However, Lao PDR's hierarchical governance structure sometimes constrains bottom-up experimentation and flexibility at the subnational level. The ongoing GPAR and GIDP partially address this limitation by strengthening provincial and district capacities and introducing mechanisms such as the PSIF for local problem-solving (UNDP, 2021). Nevertheless, disparities in administrative capacity and resource availability between Vientiane and remote provinces continue to affect implementation.

Socioeconomic and Geographic Factors

Lao PDR's population of 7.6 million is young, increasingly urbanized, and digitally connected. Mobile penetration exceeds 85%, enabling the rapid uptake of mobile-based public services (Kemp, 2025). However, rural–urban divides remain substantial. Limited connectivity, lower literacy, and affordability constraints restrict digital inclusion, particularly in the mountainous northern and southern provinces.

Consequently, hybrid delivery models such as Smart ODSCs remain essential, as they allow citizens to access services in person while administrative processes are digitalized. SUFS results similarly show that citizens in rural districts value face-to-face communication and leadership visits, which reinforce trust and participation in governance processes (Soulitham, 2019). Therefore, contextual equity considerations remain critical to scaling digital reforms.

Technological and Regulatory Foundations

Lao PDR has developed a foundational legal and technical framework to enable digital innovation. The Electronic Data Protection Law (2017) and Digital Signature Law (2018) provide legitimacy for online transactions, while a draft Decree on Digital Transformation strengthens mandates for interoperability and cybersecurity (WB, 2022). Investments in national broadband, cloud infrastructure, and emerging 5G coverage support platforms such as Gov-X (Yau, 2025). However, connectivity gaps persist in district offices, and regulatory guidance on data sharing and privacy remains limited. Addressing these constraints is necessary to advance the "whole-of-government" approach to digital transformation and support implementation of the National Digital Economy Development Strategy (2021–2030) (WB, 2022, p. 59).

International Partnerships and Capacity Development

Development partners, particularly the UNDP, UNCDF, and GovTech Singapore, have been instrumental in financing and co-designing innovation pilots. The Gov-X platform, Smart ODSCs, and SUFS were all implemented with donor collaboration, with donors providing technical

expertise and training to local officials (Yau, 2025; UNDP, 2021). These partnerships built early capacity and enabled experimentation within a resource-constrained environment. However, sustaining outcomes beyond project cycles requires greater domestic financing and institutional ownership.

Administrative and Cultural Dimensions

Lao PDR's public sector has traditionally emphasized hierarchy and procedural caution, which has limited adaptive behavior. Participatory mechanisms such as the SUFS are gradually shifting this culture toward greater transparency and accountability, with surveys showing that 82% of villagers attended development planning meetings, although many remained hesitant to voice opinions (Soulitham, 2019). Gender-inclusive approaches, including the involvement of women volunteers, have further improved representation and responsiveness.

Summary of Crosscutting Factors

Across all innovation types, five contextual enablers stand out:

- High-level political leadership ensuring coordination and reform legitimacy
- Expanding ICT infrastructure and supportive regulatory frameworks
- Progressive decentralization and capacity building under the GIDP
- Donor partnerships that provide technical and financial resources
- The gradual cultural shift toward citizen engagement and transparency

Together, these conditions form the enabling environment for innovation and productivity in Lao PDR's public sector. However, uneven administrative capacity, infrastructure disparities, and limited long-term financing remain key constraints to achieving sustainable, system-wide transformation.

Key Drivers of Improvement

Analysis of Lao PDR's innovation cases (Gov-X, Smart ODSCs, and SUFS) shows that improvements in productivity and governance stem from a convergence of political, institutional, and socio-technical drivers.

The following are the main drivers of innovation and productivity in Lao PDR:

1. High-level political commitment: Sustained leadership under the National Digital Economy Development Strategy (2021–2030) and creation of the National Digital Transformation Committee provided clear vision, legitimacy, and coordination across ministries.
2. Institutional leadership and coordination: The MTC and DGC acted as focal agencies, ensuring technical standards, data interoperability, and the alignment of sectoral initiatives.
3. Capacity development and local empowerment: Through the GPAR and GIDP, district administrations gained the skills and resources necessary to implement digital and participatory reforms, improving responsiveness and ownership.

4. Enabling digital and legal infrastructure: The Electronic Data Protection Law (2017), Digital Signature Law (2018), and draft Decree on Digital Transformation established secure conditions for e-government expansion, supported by growing broadband and data-center networks.

5. International partnerships and knowledge transfer: Collaboration with the UNDP, UNCDF, and GovTech Singapore supplied technical expertise, funding, and adaptable global models that accelerated pilot implementation.

6. Citizen-centric governance: Mechanisms such as the SUFS have institutionalized citizen feedback and transparency, fostering trust and accountability while improving service quality.

7. Gradual cultural change: Administrative behavior is shifting from compliance toward a problem-solving and performance orientation, laying the foundations for a sustainable innovation culture.

Collectively, these drivers demonstrate that Lao PDR's progress in public sector innovation relies on political commitment, institutional coherence, digital capacity, and citizen engagement. Consolidating these strengths while narrowing regional and capacity gaps will be crucial for sustaining productivity-oriented governance transformation in Lao PDR.

RECOMMENDATIONS

This report's analysis of Lao PDR's innovation landscape has highlighted the steady progress in digital transformation, administrative reform, and participatory governance. To consolidate these achievements and establish a lasting culture of productivity and innovation, the following strategic recommendations are proposed.

1. Strengthen governance and coordination
   a. Formalize a whole-of-government digital-innovation framework under the National Digital Transformation Committee, empowering the MTC to enforce data standards and interoperability across ministries
   b. Integrate innovation objectives into the forthcoming 10th National Socio-Economic Development Plan to ensure continuity and institutional ownership

2. Scale and sustain successful pilots
   a. Expand Gov-X nationwide through the modular integration of "life-event" services (e.g., birth registration and business licensing) and ensure adequate operational funding
   b. Upgrade all ODSCs to Smart ODSCs with digital case-tracking and fee transparency, and institutionalize the PSIF as a national fund for local experimentation
   c. Embed SUFS mechanisms into district planning cycles and link citizen feedback to performance evaluation

3. Invest in capacity and change management
   a. Establish a civil-service digital-skills framework covering data management, service design, and cybersecurity, with mandatory training for focal officials at the central and provincial levels
   b. Create a national innovation fellowship program to nurture change agents within the public service

4. Ensure inclusion and digital equity
   a. Combine digital delivery with in-person assistance in rural areas through Smart ODSC help desks, community outreach, and gender-responsive communication materials
   b. Prioritize broadband and ICT upgrades in underserved provinces to narrow access gaps

5. Strengthen legal and data governance
   a. Finalize and implement the Decree on Digital Transformation
   b. Develop unified guidelines for privacy, data sharing, and cybersecurity audits
   c. Introduce open-data and transparency policies to foster public trust and promote private sector collaboration

6. Foster learning, evaluation, and partnerships
   a. Institutionalize monitoring and evaluation frameworks with clear indicators of efficiency, user satisfaction, and inclusiveness
   b. Continue strategic cooperation with the UNDP, UNCDF, and ASEAN GovTech networks while promoting domestic research and innovation ecosystems

Embedding these recommendations within national planning and budgeting cycles will transform pilot initiatives into sustainable systems. By combining strong leadership, local empowerment, digital equity, and evidence-based learning, Lao PDR can consolidate its emerging culture of productive, citizen-centric, and innovative governance in line with APO's vision of smarter public sector performance.

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BUILDING A CULTURE OF PRODUCTIVITY THROUGH BUREAUCRATIC REFORM: ADVANCING PUBLIC SECTOR PRODUCTIVITY AND HIGH-PERFORMANCE GOVERNANCE IN MALAYSIA

EXECUTIVE SUMMARY

This report examines three Malaysian public sector innovations, namely the Kulai Fast Lane (KFL), the Express Construction Permit (E10) system, and the end-to-end Employment Pass (EP) reform (or Expatriate Pass reform), to demonstrate how coordinated structural, regulatory, digital, and governance reforms can drive productivity gains and improve public service outcomes. Together, these three cases illustrate practical innovation pathways and the enabling conditions required for system-level transformation.

These initiatives address persistent administrative fragmentation, regulatory delays, and inefficiencies affecting investment, industrial development, and talent mobility in Malaysia. Specifically, the KFL integrates development approvals through early technical alignment and parallel agency workflows, significantly reducing approval timelines (Malaysia Productivity Corporation [MPC], 2023). The E10 system applies agile regulation, multiagency coordination, and digital tools to shorten construction timelines, successfully reducing average construction timelines from 30–44 months to 10–12 months (MPC, 2023). At the federal level, end-to-end EP reform delivers a single-window digital model linking the Immigration Department of Malaysia, TalentCorp's Expatriate Services Division, Department of Labour of Peninsular Malaysia, and Social Security Organization, reducing delays and strengthening compliance (MPC, 2023).

Cross-case analysis identifies common success drivers, including leadership commitment, whole-of-government collaboration, regulatory agility, digital enablement, customer-centric facilitation, performance accountability, and alignment with national priorities such as Reform of Bureaucratic Burdens and Malaysia Digital Economy Blueprint. These drivers form a replicable framework for Asian Productivity Organization member economies seeking to modernize public administration and enhance productivity (Malaysia Digital Economy Corporation, 2021).

Based on the findings, this report proposes a policy roadmap with short-, medium-, and long-term actions focused on multiagency governance, agile regulation, digital integration, facilitation capability building, and performance monitoring. Overall, the Malaysian experience demonstrates that public sector innovation delivers the greatest impact when reforms across organization,

regulation, and technology are implemented in a coordinated and strategic manner, generating measurable economic and societal value.

BACKGROUND

Across Asian Productivity Organization (APO) member economies, the public sector remains the primary engine of national development, regulatory stewardship, and citizens' quality of life. This role is becoming more demanding as digital transformation accelerates, geopolitical conditions evolve, economic models shift, and public expectations continue to rise. In response, governments must build institutions that are not only efficient, but also agile, innovative, and consistently productivity-driven (OECD, 2017; OECD Observatory of Public Sector Innovation, 2020). Productivity growth has remained a persistent challenge across many APO member economies, underscoring the importance of sustained public sector reform (Nomura & Kimura, 2023).

Malaysia's recent public sector reform agenda offers a relevant reference point for the APO community. The introduction of the Reform of Bureaucratic Burdens (Reformasi Karenah Birokrasi, RKB) under General Guideline No.3 2024 (Pekeliling Am Bilangan 3 Tahun 2024) represents a decisive shift in Malaysia's reform trajectory. The initiative reorients public administration toward measurable productivity outcomes, coherent regulatory practices, and innovation-led system redesign (Government of Malaysia, 2024a), with the explicit aim of strengthening administrative effectiveness and reducing regulatory burdens on citizens and businesses.

This report draws on Malaysia's reform experience (including the RKB framework), ongoing digital modernization, and the development of new public sector innovation ecosystems. Together, these reforms provide practical insights and policy lessons that are directly relevant to strengthening public sector productivity and governance across APO member economies (Malaysia Productivity Corporation [MPC], 2023).

Defining Public Sector Innovation in Malaysia

Public sector innovation refers to the introduction and application of new or improved policies, processes, organizational models, technologies, or service approaches that enhance public value. In Malaysia, this concept has become more explicit and institutionalized through the RKB initiative, which places significant emphasis on measurable outcomes and system-level improvement (Government of Malaysia, 2024a).

Malaysia's National Definition of Innovation (Implicit and Operational)

Malaysia operationalizes public sector innovation through several core dimensions. These include strengthening public administration by simplifying regulatory processes and reducing unnecessary burdens, modernizing service delivery through digitalization and data-informed governance in line with the Malaysia Digital Economy Blueprint (MyDIGITAL; Malaysia Digital Economy Corporation, 2021), and advancing organizational renewal and capability building through central agencies such as the National Digital Department (JDN) under the Ministry of Digital.

RKB consolidates these dimensions by positioning innovation as an institutional obligation, one reinforced through guiding principles emphasizing simplification, evidence-based decision-making, openness, and cross-government coordination. Within the broader APO context, these principles are consistent with leading international frameworks, including those of the OECD Observatory of Public Sector Innovation (2020).

Innovation Policy Management and Implementation

Central innovation and modernization agencies manage Malaysia's public sector innovation agenda. The Public Service Department leads organizational reform and human capital development across the civil service, while the JDN under the Ministry of Digital drives digital transformation and service modernization. Located within the Ministry of International Trade and Industry, the MPC oversees regulatory reform, national productivity initiatives, and RKB implementation.

Implementation is carried out at the ministerial and subnational levels. Under RKB, ministries and agencies are led by Chief Reform Officers who coordinate reform initiatives, drive cross-organizational alignment, and ensure accountability (Government of Malaysia, 2024a). Local authorities, including the Kulai Municipal Council (Majlis Perbandaran Kulai; MPKu) and Kulim Municipal Council (Majlis Perbandaran Kulim; MPK), function as frontline implementers responsible for translating reforms into streamlined processes, improving service accessibility, and reducing administrative burdens for citizens and businesses.

Innovation Labs and Experimentation Platforms

Malaysia's public sector innovation capacity is supported by structured platforms that promote experimentation and evidence-informed reform. RKB project teams in ministries and local authorities drive regulatory analysis, stakeholder engagement, and solution prototyping, with initiatives such as the Kulai Fast Lane (KFL) demonstrating their impact in accelerating processes and reducing administrative burden (MPC, 2023).

Regulatory experimentation (Uji Kaji Peraturan, UKP) under Pekeliling Am Bilangan 4 Tahun 2024 enables the controlled testing of new regulatory approaches (Government of Malaysia, 2024b), while digital innovation labs explore technologies such as automation, analytics, and service design prior to scaling. Together, these platforms reflect Malaysia's shift toward a more coordinated and systemic model of innovation governance that strengthens institutional capability and public value (OECD Observatory of Public Sector Innovation, 2020).

National Traditions, History, and Resources Shaping Innovation

1. Historical legacy:
   - Administrative excellence has been emphasized since the New Public Management reforms in the 1980s and 1990s.
   - Malaysia has seen progressive digital government development, including early e-government initiatives and acceleration under MyDIGITAL.
   - Established in 2007, the Special Taskforce to Facilitate Business (PEMUDAH) has driven regulatory reform, reducing business bottlenecks and strengthening public–private engagement.
   - National development planning has anchored public sector reform priorities since the Tenth Malaysia Plan, which emphasized government transformation and service delivery improvements (Economic Planning Unit, Prime Minister's Department, 2010).

2. Sociopolitical context:
   - Malaysia has a multilevel governance structure (federal, state, local) requiring strong coordination and policy alignment.
   - RKB addresses this requirement through clearer governance structures and strengthened accountability mechanisms.

3. Cultural and organizational norms:
   - Persistent barriers to innovation include hierarchical bureaucracy, risk aversion, and siloed operations.
   - In response to these challenges, RKB has mandated cross-agency collaboration, embedded performance obligations, and reduced regulatory duplication and compliance burdens.

4. Resource and capability factors:
   - Malaysia possesses strong foundations in digital infrastructure, science and technology policy, civil service training, and data systems.
   - RKB reinforces these assets through structured capacity-building and improved regulatory governance (WB, 2020).

Key Actors in Malaysia's National Innovation System

Malaysia's innovation ecosystem spans the public, private, academic, and community sectors, with the following key actors:

1. Government and public institutions:
   - The Prime Minister's Department provides strategic direction for nationwide governance reform.
   - The JDN leads digitalization and service innovation.
   - The MPC coordinates regulatory reform, productivity initiatives, and RKB and UKP implementation.
   - Ministries and local authorities translate innovation initiatives and RKB projects into operational outcomes.

2. Private sector and industry bodies:
   - Industry partners contribute technical expertise, identify regulatory bottlenecks, and co-design solutions through platforms, such as PEMUDAH and RKB.

3. Academia and research institutions:
   - Public universities and think tanks provide support through policy research, innovation methodologies, evaluation frameworks, and advisory roles.

4. Civil society and citizens:
   - Increased use of co-creation, feedback mechanisms, and user-centered design supports demand-driven public sector innovation.

How RKB Strengthens the Innovation Narrative

RKB is transforming Malaysia's innovation landscape by advancing the shift from process-driven bureaucracy to outcome-based governance, characterized by:

- Mandated innovation requirements, including regulatory review, burden reduction, and KPI alignment;

- Institutionalized experimentation through UKP regulatory sandboxing;

- Cross-government governance structures for monitoring and accountability; and

- Productivity-centered reform linking innovation directly to economic and administrative performance.

Through RKB, innovation has shifted from a peripheral activity to a core governance function embedded as a mandatory organizational behavior across ministries, agencies, and local authorities.

Malaysia's approach, particularly through RKB, demonstrates a structured and comprehensive model of public sector innovation and productivity transformation underpinned by:

- Clear national definitions and mandates
- Enabling institutional and governance structures
- UKP platforms
- Cultural and behavioral change
- System-wide coordination across levels of government

This integrated model aligns closely with the APO's priorities for strengthening public sector productivity and innovation across member economies.

ANALYSIS OF INNOVATION OUTCOMES AND THEIR LINK TO PUBLIC SECTOR PERFORMANCE

KFL: Accelerated Development Approvals as a Catalyst for Industrial Productivity

KFL represents a major transformation in local government service delivery for industrial development approvals. Implemented by MPKu, the initiative addresses longstanding inefficiencies caused by sequential approval processes that resulted in prolonged timelines and investor uncertainty. KFL has introduced an agile, time-bound development pathway that integrates the full project lifecycle into a coordinated and facilitative approval process, shifting local regulation from a compliance-driven model to an outcome-oriented model (MPC, 2023).

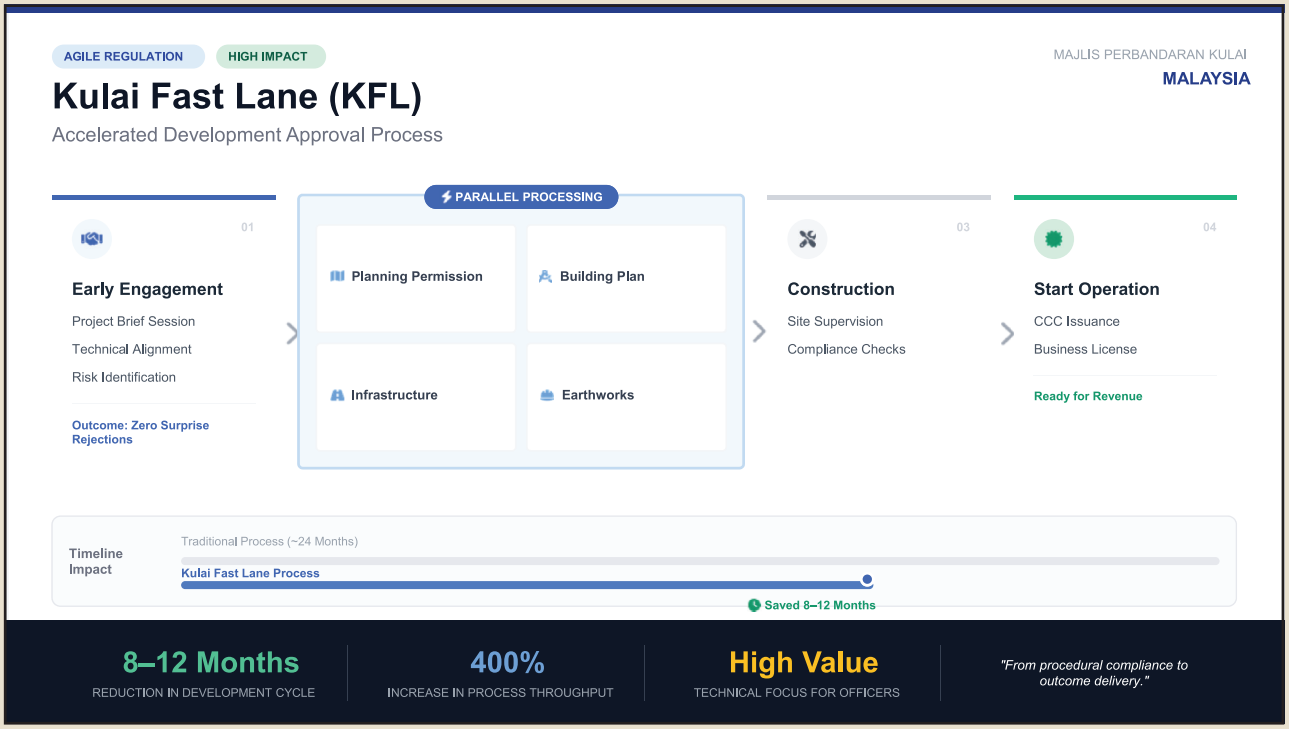
A core feature of KFL is early technical alignment among developers, Principal Submitting Persons (PSPs), internal council units, and external technical agencies through structured Project Brief sessions (Figure 1). This front-end coordination improves submission quality, reduces rework, and enables the parallel processing of planning, infrastructure, earthworks, and building approvals, significantly increasing administrative efficiency and integrated decision-making (MPC, 2023).

The outcomes demonstrate tangible productivity gains. Approval timelines have been shortened by approximately 8 to 12 months, accelerating business operations, strengthening investor confidence, and supporting faster job creation (MPC, 2023). Reduced administrative burden also allows council officers to focus on higher-value technical assessments. At the regional level, the faster activation of industrial zones such as Sedenak Tech Park and Senai Airport City has reinforced Kulai's role as a key industrial growth hub.

From a governance perspective, KFL embeds facilitation, transparency, and interagency coordination into routine operations, operationalizing agile regulatory principles under the RKB agenda (Government of Malaysia, 2024a). The initiative provides a practical and replicable model for APO member economies seeking to modernize regulatory systems, reduce bureaucratic friction, and enable industrial growth.

FIGURE 1

KFL ACCELERATED DEVELOPMENT APPROVAL PROCESS.



Source: Reproduced from an internal MPKu presentation (MPKu, 2024, slide 7).
Note: CCC, Certificate of Completion and Compliance; KFL, Kulai Fast Lane; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council).

Express Construction Permit (E10) System (MPK): A High-Impact Model for Regulatory Agility and Investment Enablement

The E10 system is a high-impact public sector innovation implemented by the MPK during the economic disruption of the COVID-19 pandemic period. Faced with declining development activity, prolonged permitting timelines exceeding 30 months, and weakened investment inflows, Kulim required a decisive reform to restore competitiveness and accelerate industrial activation.

E10 was designed around three strategic pillars: early investor engagement, customized processes enabled by agile regulation, and proactive facilitation across the project lifecycle (Figure 2). Structured pre-consultation enables the early resolution of technical issues, alignment between

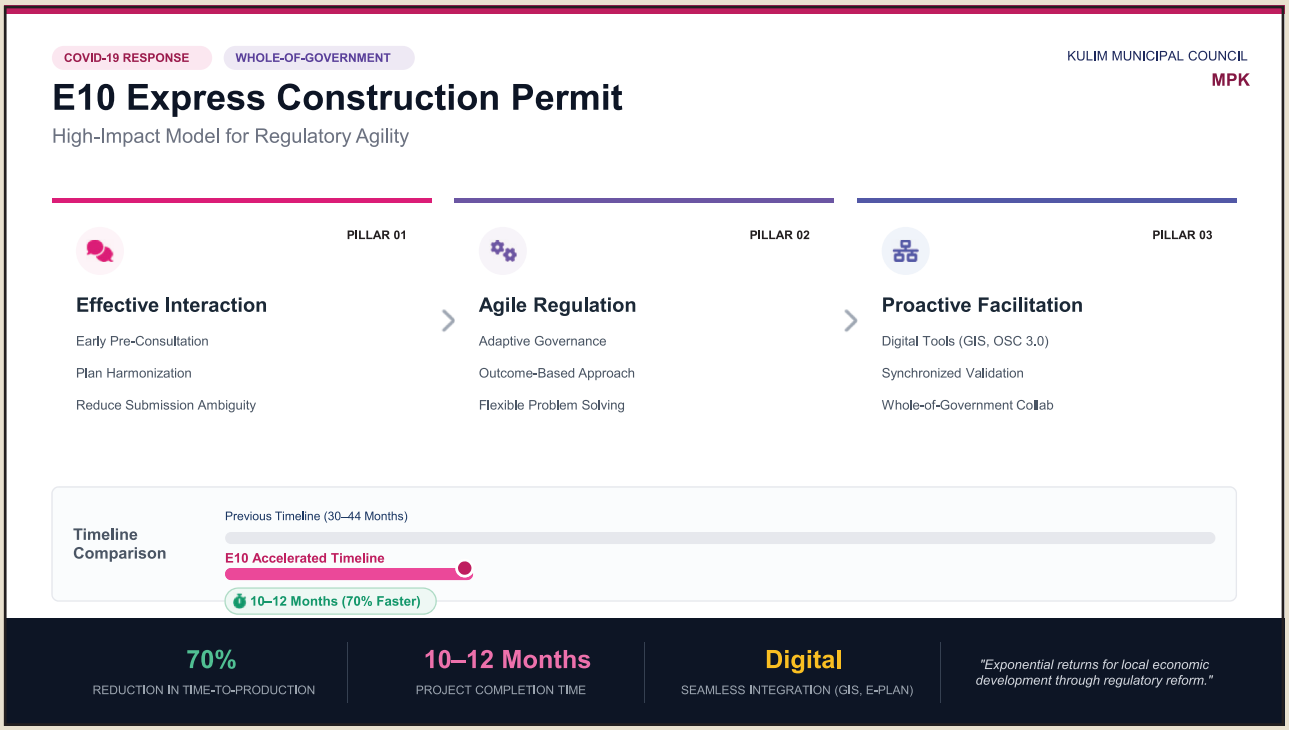
regulators and investors, and the removal of redundant submissions, marking a shift from rigid administrative routines to outcome-oriented governance.

The initiative has produced impressive results. Under E10, industrial projects that previously required 30 to 44 months have been completed within 10 to 12 months, representing a more than 70% reduction in time to production. These gains accelerated market entry, reduced costs, and supported job creation and supply chain activation.

E10 has also strengthened the local investment ecosystem through digital tools such as geographic information system (GIS) mapping, electronic planning platforms, One Stop Centre (OSC) 3 Plus, and digitized workflows, improving data transparency and decision-making. Strong collaboration across federal, state, and local agencies has enabled coordinated approvals under a whole-of-government (WoG) approach. Consequently, E10 has become a national reference informing the MyMudah program and the MPC's National Policy on Good Regulatory Practice (MPC, 2021), offering a replicable model for APO member economies seeking to enhance regulatory agility, investment enablement, and economic resilience.

FIGURE 2

E10 SYSTEM.



Source: Reproduced from an internal presentation by Majlis Perbandaran Selayang (2024, pp. 6–7).
Note: E10, Express Construction Permit.

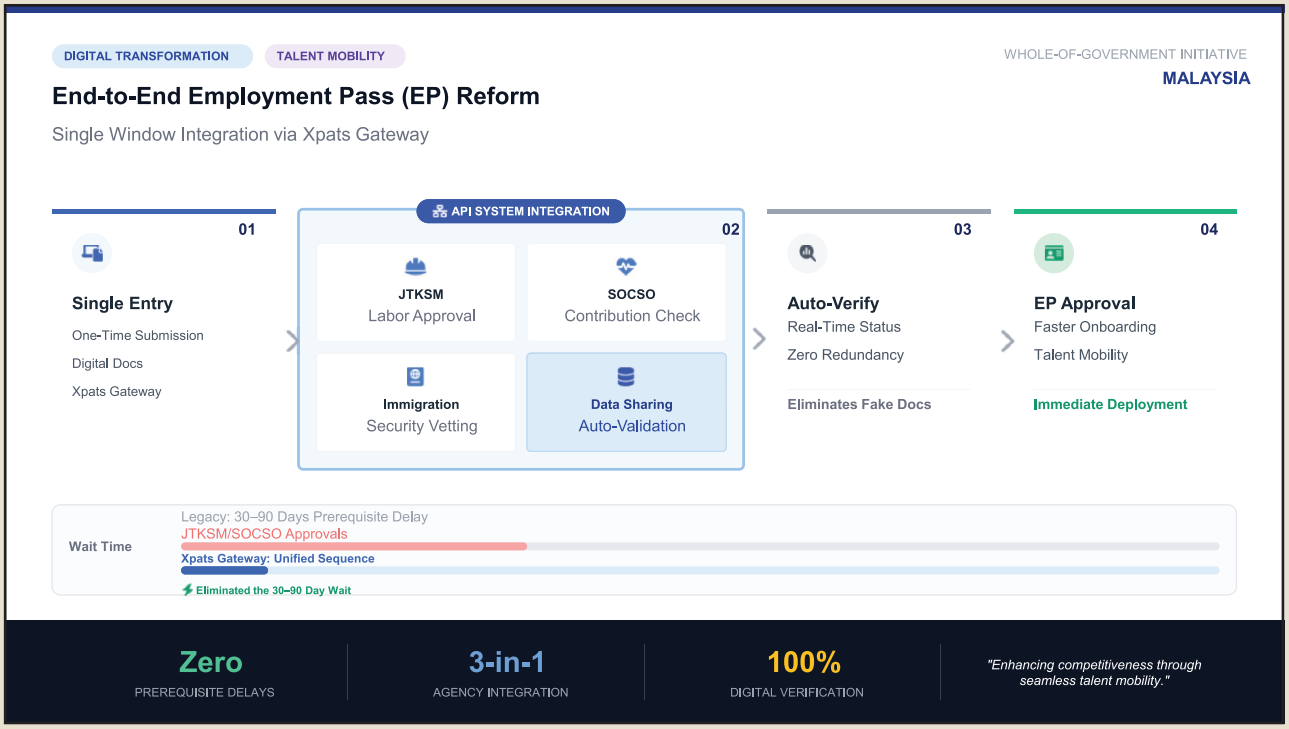
End-to-End Employment Pass (EP) Reform: Enhancing Human Capital Mobility and Administrative Efficiency

Malaysia's end-to-end EP reform represents a major federal innovation to modernize the expatriate approval ecosystem critical to national competitiveness in high-value industries. Previously, employers faced delays of 30 to 90 days due to fragmented systems, duplicate prerequisites under the Department of Labour of Peninsular Malaysia (JTKSM) and Social Security Organization (SOCSO), manual verification procedures, and fraud risks, constraining timely access to specialized global talent.

The end-to-end EP reform has reengineered this process by integrating JTKSM, SOCSO, and the Immigration Department into a single digital platform, namely, the Xpats Gateway (Figure 3). This single-window model removes redundancies; automates prerequisite sequencing, compliance checks, and data validation; and improves data sharing through application programming interface (API) integration. This platform reduces manual processes, mitigates fraud risks, and enables employers to track application status in real time.

FIGURE 3

END-TO-END EP REFORM.



Source: Author's compilation based on official information from Xpats Gateway, ESD, TalentCorp, JTKSM, and SOCSO.
Note: EP, Employment Pass; ESD, Expatriate Services Division; JTKSM, Department of Labour of Peninsular Malaysia; SOCSO, Social Security Organization.

The outcomes of this innovation demonstrate clear performance gains. Reduced processing times strengthen Malaysia's ability to attract and retain skilled expatriates in sectors such as technology, advanced manufacturing, and knowledge-based services. Improved data quality and automation enhance regulatory integrity and reduce enforcement burdens, while WoG coordination is reinforced through alignment with PEMUDAH, MPC support, and TalentCorp's facilitative role.

In policy terms, the reform operationalizes RKB objectives by simplifying processes, reducing compliance burdens, and improving administrative responsiveness. It provides a strong reference model for APO member economies seeking to modernize labor mobility systems and enhance investment attractiveness.

EXAMPLES OF INNOVATION OUTCOMES AND THEIR LINK TO PUBLIC SECTOR PERFORMANCE

KFL

KFL is a major local government innovation that has transformed industrial development approvals in Kulai. Developed by the MPKu, KFL has replaced legacy approval processes with a more agile and coordinated regulatory model, repositioning the local authority as an economic enabler.

This case study focuses on improvements to structures, processes, and outcomes; key institutional and contextual factors; and critical drivers of success. The analysis follows the APO framework, highlighting productivity gains, governance reform, and measurable impacts on business and local economic performance.

Innovation and Key Improvements in Structures, Processes, and Outcomes

KFL involved the end-to-end redesign of the industrial development approval cycle. Previously, applications moved through fragmented, sequential workflows involving multiple approvals and repeated reviews, often resulting in delays of 12–24 months, higher development costs, and investor uncertainty.

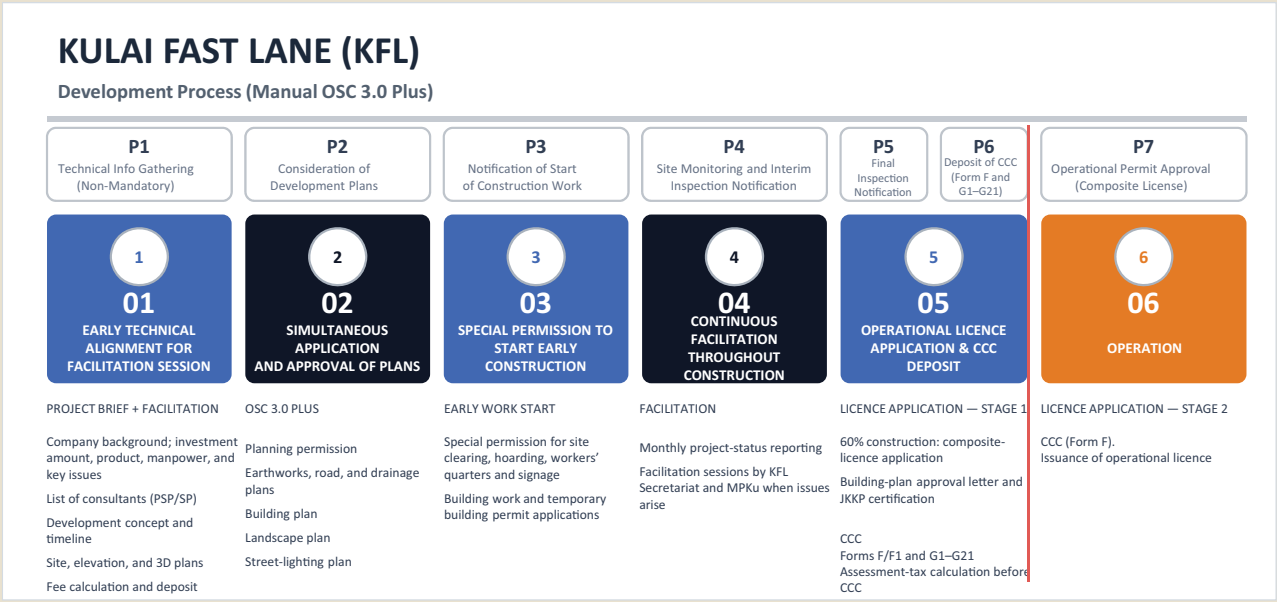
KFL has addressed these challenges through a model centered on regulatory agility and integrated facilitation. As Figure 4 shows, the process begins with a structured pre-consultation or Project Brief that brings together developers, PSPs, internal council units, and technical agencies to clarify scope, requirements, risks, and approval pathways before formal submission, thereby reducing rework and downstream delays.

A key innovation is parallel processing, which enables planning, engineering, infrastructure, and building approvals to be assessed concurrently. Controlled early works may also commence once critical technical elements are cleared, significantly compressing timelines for capital-intensive projects.

The KFL initiative has produced significant outcomes. Developers have reported time savings of 8–12 months, enabling faster project delivery, lower development risk, and earlier production. Continuous facilitation and multiagency engagement have repositioned the MPKu as a strategic partner in investment acceleration, strengthening investor confidence and economic activity in key industrial zones such as Sedenak Tech Park and Senai Airport City.

FIGURE 4

KFL DEVELOPMENT PROCESS.



Source: Reproduced from an internal MPKu presentation (MPKu, 2024, slides 11–12).
Note: CCC, Certificate of Completion and Compliance; JKKP, Department of Occupational Safety and Health; KFL, Kulai Fast Lane; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council); OSC, One Stop Centre; PSP, Principal Submitting Person; SP, Submitting Person.

Innovation Type, Sector, Level of Government, Contextual Factors, Organizations, and Key Actors Involved

KFL is a regulatory and administrative innovation that reconfigures industrial development approval workflows to improve productivity and reduce bureaucratic friction. While led by the MPKu, the initiative operates within a broader ecosystem involving federal, state, and private sector stakeholders.

Type of Innovation KFL reflects multiple forms of innovation:

- Process innovation, whereby redesigned workflows enable early technical alignment and parallel assessments;
- Structural innovation through the introduction of new coordination and governance arrangements integrating multiple agencies;
- Regulatory innovation via the introduction of flexible, outcome-oriented approval pathways; and
- Service innovation through the implementation of an investor-centered facilitation model that improves transparency and predictability.

Sector The initiative spans urban planning, construction, industrial development, and regulatory governance, integrating these domains into a streamlined approval environment.

Level of Government Implementation occurs at the local government level, with MPKu as the primary coordinator and decision center, supported by extensive cross-agency and cross-government collaboration.

Contextual Factors KFL emerged in response to

- Rapid industrial expansion and strong investor demand
- Intensifying regional competition from Johor Bahru, Iskandar Malaysia, Singapore, Batam, and other supply chain hubs
- The need to align local development strategies with national priorities under RKB

Organizations Involved Key organizations across the development value chain include

- The MPKu, which is the lead agency and implementer;
- The MPC, which provides regulatory reform and productivity guidance;
- State technical agencies and utility providers that support technical assessment and infrastructure readiness; and
- Private sector stakeholders, including developers, consultants, and investors.

Key Actors Critical contributors include

- MPKu leadership and senior management
- Division heads and technical officers responsible for planning, engineering, and building control
- External technical agency officers
- Developers and PSPs
- MPC officers who support process reengineering under RKB and MyMudah

Collectively, these public and private actors position KFL as a multilevel, multistakeholder innovation that extends beyond single-agency reform and reflects a systemic shift in regulatory practice (Figure 5).

FIGURE 5

COLLABORATION STRATEGY.

Source: Reproduced from an internal MPKu presentation (MPKu, 2024, slide 13).
Note: DDI, domestic direct investment; FDI, foreign direct investment; KFL, Kulai Fast Lane; MPC, Malaysia Productivity Corporation; PSP, Principal Submitting Person; SP Submitting Person.

Factors That Made the Innovation Successful

KFL's performance and sustainability are underpinned by a combination of structural, institutional, and operational enablers:

1. Leadership commitment and vision: Strong leadership from the MPKu was critical in aligning internal teams, securing agency buy-in, and positioning KFL as a strategic investment-enablement platform rather than a faster approval process. Clear decision rights and accountability ensured continuity and effective execution.

2. WoG collaboration: KFL replaced siloed approval processes with a WoG approach supported by regular cross-agency engagement, technical consultations, and coordinated monitoring. This reduced fragmentation, strengthened trust, and enabled synchronized approvals.

3. Process integration and early technical alignment: Structured pre-consultation and parallel processing improved information quality, reduced rework, and accelerated technical validation. Ongoing monitoring through scheduled reviews and progress tracking enabled timely issue escalation and resolution.

4. Regulatory flexibility and facilitation culture: The initiative operationalizes agile regulatory principles under RKB by allowing flexible sequencing, tailored requirements, and early works

approvals where appropriate. This reflects a shift from rule-based administration to facilitation-driven governance focused on outcomes.

5. Institutional capability and digital readiness: MPKu's capacity to deploy digital tools, standardized procedures, and monitoring dashboards enhanced efficiency, transparency, and consistency in implementation.

6. Stakeholder confidence and value proposition: Clear time savings, predictable approval pathways, and responsive facilitation strengthened investor confidence and reinforced Kulai's position as a competitive and investment-friendly jurisdiction.

Conclusion

KFL is a high-impact public sector innovation that addresses key governance challenges in industrial development. It demonstrates how local governments can improve productivity, reduce bureaucratic burden, and enhance regional competitiveness through integrated processes, regulatory agility, strong leadership, and stakeholder alignment (MPC, 2023). The initiative provides a practical reference model for APO member economies pursuing regulatory modernization and economic transformation (OECD, 2017; OECD Observatory of Public Sector Innovation, 2020).

E10 System (MPK)

The E10 system is one of Malaysia's most significant local-level regulatory innovations. It was introduced by the MPK to accelerate industrial construction and restore investor confidence during the economic disruption of the COVID-19 period. Faced with prolonged permit timelines of 30–44 months, stalled investments, and underutilized industrial land, Kulim required a structural response to revive industrial activity and competitiveness.

In response, the E10 model was designed as a high-impact process innovation enabling qualifying industrial projects to secure construction permits and commence production within a targeted timeframe of 10 months. Guided by principles of agile regulation, WoG coordination, process transparency, and investor-centered facilitation, E10 represents a major advance in regulatory modernization and institutional agility. The initiative provides a strong and replicable reference model for APO member economies seeking to modernize construction permitting and enhance industrial competitiveness.

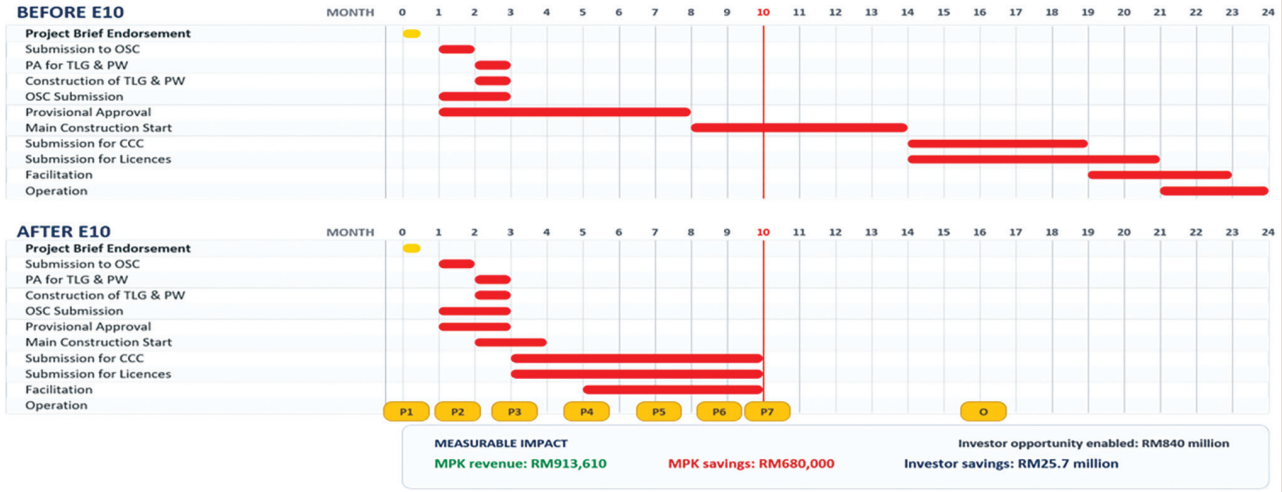
Innovation and Key Improvements in Structures, Processes, and Outcomes

The E10 model has restructured industrial construction approvals in Kulim by replacing fragmented, sequential processes with an integrated and digitally enabled regulatory workflow (Figure 6). Previously, investors faced multiple agency reviews, manual documentation, and repeated resubmissions, leading to high costs and long delays. E10 has addressed these constraints through structured pre-consultation and parallel processing. By aligning regulators and investors early on, technical requirements are clarified and issues resolved before formal submission. Redesigned workflows allow concurrent reviews across engineering, building, and utility functions, supported by clear milestones and active facilitation.

The model embeds agile regulatory principles focused on clarity, flexibility, and proactive problem-solving, with the objective of enabling factory operations within 10 months while maintaining safety standards. As a result, project timelines have been reduced from 30–44 months to 10–12 months, generating faster industrial activation, job creation, and stronger investor confidence in Kulim as a high-value manufacturing hub.

FIGURE 6

CONSTRUCTION APPROVAL TIMELINE BEFORE AND AFTER THE INTRODUCTION OF E10.



Source: Reproduced from an internal technical briefing by Majlis Perbandaran Selayang (2024, pp. 8–9).
Note: CCC, Certificate of Completion and Compliance; E10, Express Construction Permit; OSC, One Stop Centre; PA, provisional approval; PW, perimeter wall; TLG, temporary labor quarters.

Type of Innovation, Sector, Level of Government, Contextual Factors, Organizations, and Key Actors

The E10 is a multidimensional public sector innovation that integrates regulatory reengineering, digital enablement, and coordinated multiagency action to accelerate industrial activation and strengthen local competitiveness.

Type of Innovation E10 combines several innovation types:

- Regulatory and process innovation through simplified, accelerated, and reengineered approval workflows;
- Governance innovation via embedded multiagency coordination and joint decision-making; and
- Service and digital innovation through investor-facing facilitation mechanisms and online submission, tracking, and information-sharing tools.

Sector The E10 initiative spans construction, industrial development, engineering, and regulatory governance, directly supporting timely manufacturing activation and industrial value chains.

Level of Government E10 is led by the MPK at the local government level, with strong operational dependence on coordination with state and federal technical agencies, demonstrating integrated multitier governance.

Contextual Factors E10 was shaped by:

- Economic disruption during COVID-19
- Underutilized industrial land and stalled projects
- Intensifying regional competition for high-value investments
- Rising investor expectations for faster, more predictable approvals

Organizations and Key Actors Key participants include

- The MPK, as the lead coordinator;
- The MPC, which provides regulatory reform guidance;
- State technical agencies and utility providers that support compliance and infrastructure readiness;
- Private sector stakeholders, including developers, manufacturers, and PSPs; and
- Municipal leadership, division heads, technical officers, and MPC advisors, all of whom drive implementation.

In addition to institutional and regulatory innovation, E10's success reflects effective relationship management across government, industry, and professional actors (Figure 7), creating a coherent ecosystem for rapid industrial development.

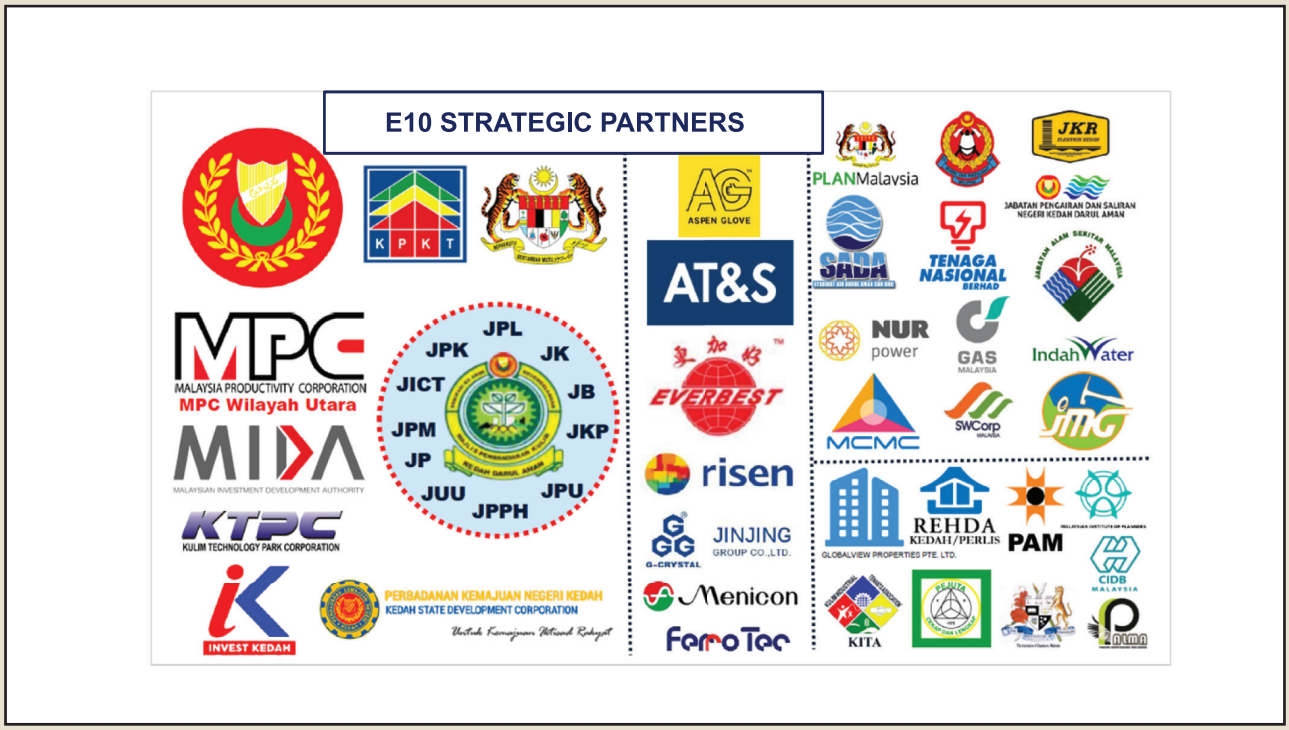
Factors That Made the Innovation Successful

The effectiveness of the E10 model is driven by a set of systemic, behavioral, and strategic enablers that have strengthened both implementation and outcomes:

1. Strong leadership and strategic mandate: Clear leadership direction established a shared performance objective, enabling factories to reach operational status within 10 months by aligning stakeholders and accelerating decision-making across the ecosystem.
2. Agile regulation and process flexibility: E10 applies adaptive regulatory practices that balance compliance with economic outcomes, empowering officers to resolve issues in real time while maintaining technical standards and minimizing procedural burden.
3. WoG collaboration: Integrated, multiagency decision-making replaced sequential approvals, reducing institutional fragmentation and accelerating cross-agency workflows.
4. Digital enablement and data transparency: Digital tools, including OSC 3 Plus, GIS mapping, and electronic planning systems, improved submission efficiency, visibility, and accountability while reducing duplication.

FIGURE 7

MPK STRATEGIC PARTNERS.



Source: Internal MPC/MPKu dataset reproduced from MPC (2024b, p. 3).
Note: MPC, Malaysia Productivity Corporation; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council).

5. Investor-centered facilitation: Dedicated facilitation mechanisms and continuous engagement repositioned government as an active partner, strengthening investor confidence and supporting sustained industrial growth.

6. Alignment with national reform agendas: The E10 initiative's strong alignment with the MPC's National Policy on Good Regulatory Practice (MPC, 2021), the RKB agenda, and the MyMudah program has reinforced policy legitimacy and enabled broader adoption across government.

Conclusion

The E10 system shows how local governments can achieve high-impact innovation by streamlining regulatory frameworks and aligning governance for faster, more predictable outcomes. By transforming a fragmented permitting process into a high-performance approval system, the MPK delivered tangible economic benefits. E10 provides a practical blueprint for APO member economies to accelerate industrial activation, strengthen investor confidence, and support economic growth through public sector innovation.

End-to-End EP Reform

Malaysia's end-to-end EP reform is a major public sector innovation in human capital governance, digital transformation, and regulatory modernization. Previously, the expatriate employment approval ecosystem was fragmented across multiple agencies, characterized by siloed systems,

manual documentation, inconsistent compliance requirements, and delays of 30 to 90 days at the prerequisite stages managed by JTKSM and SOCSO (MPC, 2023). These inefficiencies slowed talent recruitment, increased administrative burden on employers, and weakened Malaysia's competitiveness for high-skilled global talent.

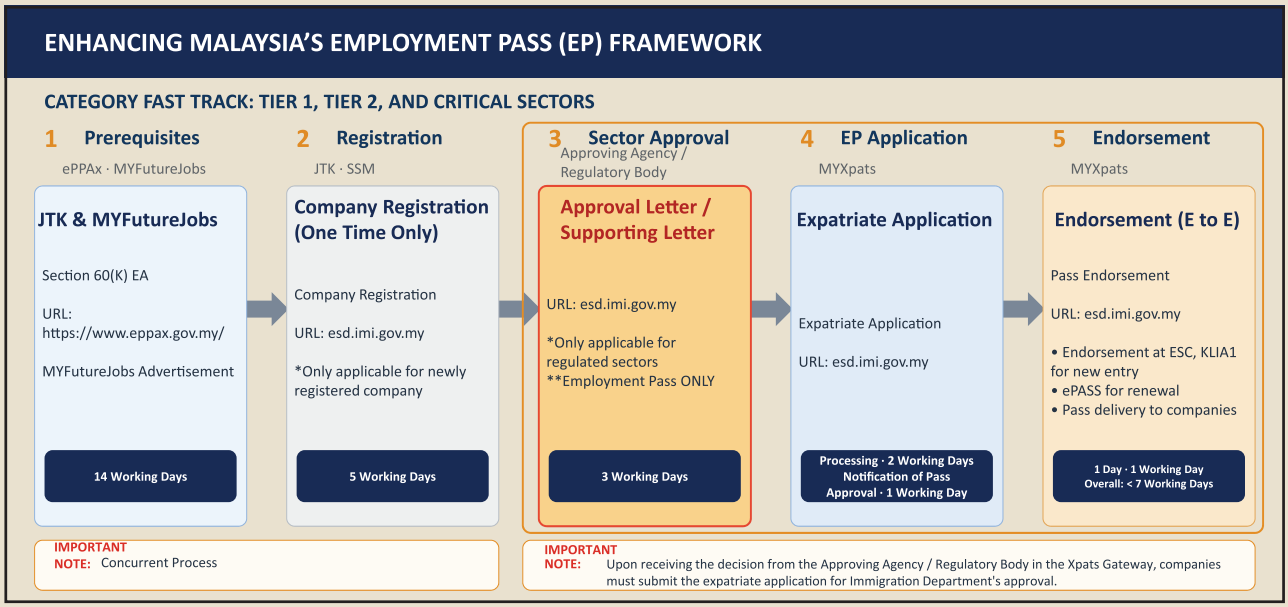
The end-to-end EP reform addresses these challenges through an integrated, technology-enabled workflow that connects multiple agencies into a single operational ecosystem (Figure 8). By streamlining processes and automating compliance, the reform has modernized expatriate management while advancing national priorities under the RKB agenda (Government of Malaysia, 2024a) and the MyDIGITAL strategy (Malaysia Digital Economy Corporation, 2021). It exemplifies a shift toward transparent, customer-centric, and digitally enabled public administration.

Innovation and Key Improvements in Structures, Processes, and Outcomes

At its core, the end-to-end EP reform introduces a single digital window for expatriate approvals through the Xpats Gateway. The platform coordinates the Immigration Department, TalentCorp's Expatriate Services Division (ESD), JTKSM, and SOCSO using API integration. This enables real-time data exchange, eliminates manual verification, and removes the need for duplicate document submissions by employers.

FIGURE 8

END-TO-END FRAMEWORK FOR EXPATRIATE APPLICATION.



Source: Reproduced from internal MPC validation materials (MPC, 2024b, p. 2).
Note: EP, Employment Pass; ePPAx, Integrated Foreign Workers Management System; ESC, ESD Satellite Centre; ESD, Expatriate Services Division; JTKSM, Department of Labour Peninsula Malaysia; KLIA, Kuala Lumpur International Airport; MYXpats, Malaysia Expatriate Services Centre; SSM, Companies Commission of Malaysia.
ESC is a satellite facility of the Immigration Department's ESD.

Structural Improvements The reform has replaced a fragmented, multisystem approval chain with a coordinated single-window governance architecture. It has consolidated previously separate processes for labor verification, SOCSO registration, immigration processing, and EP issuance, significantly reducing fragmentation and decision-making delays.

Process Improvements Workflow efficiency is enhanced through automation, pre-validation, and standardized documentation, including:

- Automated data matching across JTKSM, SOCSO, and the Immigration Department
- Elimination of redundant document checks
- Real-time compliance validation and fraud detection
- Clearer, structured digital guidance for employers

These changes deliver a more transparent, predictable, and efficient approval process aligned with global best practices.

Outcome Improvements Approval timelines, particularly at prerequisite stages, have been reduced from 30–90 days to as little as 10 days. Faster talent onboarding is supporting business continuity, strengthening competitiveness in high-value sectors, and improving national productivity. Enhanced data integrity and transparency have also reduced fraud risks, strengthened compliance, and increased employer confidence, reinforcing Malaysia's attractiveness as an investment destination.

Type of Innovation, Sector, Level of Government, Contextual Factors, Organizations, and Key Actors Involved

The end-to-end EP reform is a multidimensional public sector innovation that integrates digital, regulatory, governance, and service reforms to modernize expatriate management at the national level (Figure 9).

Type of Innovation The end-to-end EP reform combines:

- Digital innovation, through system integration, automation, and shared data platforms;
- Regulatory innovation by simplifying compliance pathways and removing redundant approvals;
- Governance innovation via the consolidation of multiagency processes into a unified operating model; and
- Service innovation by improving transparency, predictability, and employer experience.

Sector The reform operates across key strategic domains:

- Immigration and border governance
- Labor market regulation

- Investment facilitation and human capital development
- Digital government services

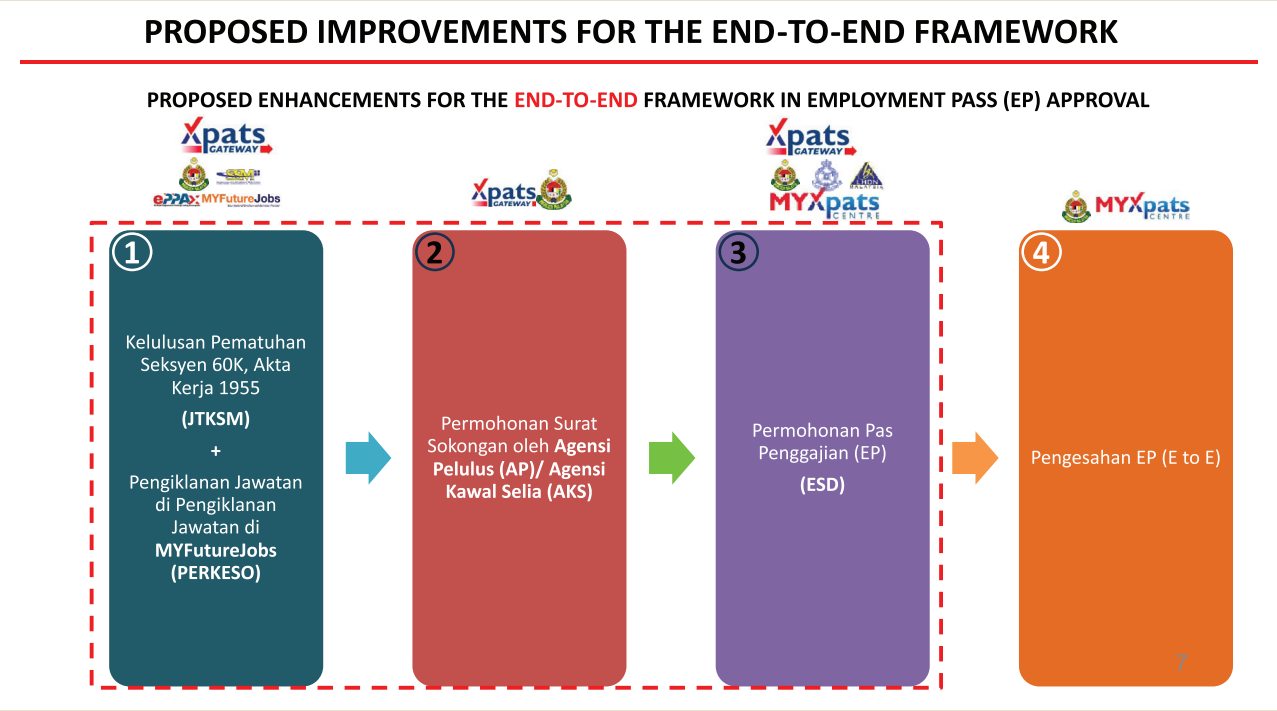
Level of Government The end-to-end EP reform is implemented at the federal level, requiring alignment of legal, administrative, and technological mandates across ministries and national agencies. It thus reflects a strong WoG approach.

Contextual Factors The reform was driven by:

- Intensifying global competition for high-skilled talent
- Employer demand for faster, clearer, and more predictable approvals
- Longstanding fragmentation across expatriate approval systems
- National priorities under MyDIGITAL and RKB
- The need to strengthen the ease of doing business for high-value industries

FIGURE 9

PROPOSED IMPROVEMENTS FOR THE END-TO-END FRAMEWORK IN EP APPROVAL.



Source: Reproduced from MPC internal recommendations (MPC, 2024b, p. 3).
Note: AKS, Agensi Kawal Selia; AP, Agensi Pelulus; ESD, Expatriate Services Division; EP, Employment Pass; JTKSM, Department of Labour of Peninsular Malaysia; MPC, Malaysia Productivity Corporation; PERKESO, Pertubuhan Keselamatan Sosial.

Organizations and Key Actors Core institutions and actors include

- Immigration Department of Malaysia and TalentCorp (ESD), which provide system ownership and governance;
- JTKSM and SOCSO, which ensure labor and social compliance;
- MPC and PEMUDAH, which support regulatory reform and coordination; and
- Senior policymakers, ICT teams, compliance officers, and employer representatives, who drive implementation and continuous improvement.

Collectively, this integrated institutional ecosystem underpins a major national transformation that strengthens regulatory integrity, talent mobility, and Malaysia's overall competitiveness.

Factors That Made the Innovation Successful

1. Strong alignment with national policy mandates: The end-to-end EP reform aligns closely with national priorities under RKB, MyDIGITAL, and Malaysia's talent attraction agenda. This alignment has strengthened policy legitimacy, leadership continuity, and cross-ministerial commitment.
2. Single digital window integration: Consolidating fragmented systems into a unified digital platform has eliminated duplication, reduced inconsistencies, implemented automated verification, and significantly accelerated decision-making, enabling substantial performance gains.
3. Regulatory and documentation standardization: Standardized documentation, reengineered workflows, and automated compliance checks have improved submission quality, reduced delays, and strengthened regulatory integrity across agencies.
4. Data sharing and API connectivity: Real-time data exchange through API integration has enhanced verification accuracy, reduced fraud risks, and removed manual cross-checking, thereby lowering administrative workload and preventing backlogs.
5. Stakeholder engagement and continuous improvement: Ongoing engagement led by TalentCorp's ESD has ensured that the system remains responsive, user-centered, and aligned with evolving employer and economic needs.
6. WoG operating model: Close coordination among the Immigration Department, TalentCorp, SOCSO, JTKSM, and MPC embedded collaborative governance, enabling the effective implementation of a large-scale, cross-agency reform.

Conclusion

The end-to-end EP reform marks a major advancement in Malaysia's public administration. The reform demonstrates how digital integration, regulatory streamlining, and coordinated governance can deliver rapid and measurable performance gains. By transforming a fragmented, manual system into a modern, automated, and transparent platform, the end-to-end EP reform strengthens Malaysia's competitiveness in attracting skilled global talent through single-window integration, automated compliance, and multiagency collaboration.

COMPARATIVE OVERVIEW OF MALAYSIA'S HIGH-IMPACT PUBLIC SECTOR INNOVATION MODELS

This section presents a comparative overview of Malaysia's three flagship public sector innovation initiatives, demonstrating how regulatory, digital, and governance reforms have been applied across different levels of government to address persistent administrative bottlenecks (Table 1). The comparison highlights innovation types, objectives, implementation levels, success factors, and measurable impacts, offering APO member economies a concise reference and practical blueprint for multiagency reforms that enhance productivity, reduce bureaucratic friction, and deliver high-value outcomes.

TABLE 1

SUMMARY OF THREE PUBLIC SECTOR INNOVATIONS IN MALAYSIA.

Dimension	KFL	E10	End-to-End EP Reform
Innovation type	Integrated, agile development approval	Accelerated, agile construction permitting	Digital single-window regulatory reform
Primary goal	Faster approvals and investment readiness	Faster construction and industrial revival	Faster expatriate approvals and ease of doing business
Level of government	Local (with state/federal coordination)	Local (with state/federal coordination)	Federal (multiagency)
Key success factor	Leadership and parallel processing	Agile regulation and WoG collaboration	Single-window integration and real-time data
Impact	Time savings of 8 to 12 months	Cycle cut from 30–44 to 10–12 months	Reduced delays and faster talent deployment

Source: Compiled by author using data from MPC (2024b, pp. 1–3), MPKu (2024), and Majlis Perbandaran Selayang (2024).
Note: E10, Express Construction Permit; EP, Employment Pass; KFL, Kulai Fast Lane; MPC, Malaysia Productivity Corporation; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council); WoG, whole-of-government.

Analysis of Innovation Types Associated with Public Sector Innovations

A review of the KFL, E10 system, and end-to-end EP reform shows how different innovation types can be combined to improve public sector productivity, regulatory efficiency, and service outcomes. Although each initiative reflects a distinct innovation focus, together, they demonstrate that system-level impact is achieved through the integration of regulatory, process, governance, service, and digital reforms.

As summarized in Table 2, KFL illustrates regulatory and process innovation by replacing sequential approvals with integrated parallel processing and facilitation, shifting local government toward an enabling, investor-oriented governance model. The E10 system represents governance and regulatory innovation, using WoG collaboration, structured pre-consultation, and milestone-based monitoring to remove bottlenecks and accelerate industrial activation. Meanwhile, the end-to-end EP reform is driven by digital and data-enabled regulatory innovation, integrating multiple agencies into a single digital window to modernize compliance and strengthen Malaysia's competitiveness for high-skilled talent.

Collectively, these cases show that effective public sector innovation is multidimensional. For APO member economies, these cases highlight the value of strategically aligned, integrated reforms in delivering operational, economic, and societal benefits.

TABLE 2

CROSS-CASE COMPARISON MATRIX: MALAYSIAN PUBLIC SECTOR INNOVATIONS.

Dimension	KFL	E10	End-to-End EP Reform
Innovation type	Process and regulatory integration	Governance and regulatory agility	Digital single-window reform
Problem addressed	Fragmented, slow development approvals	Prolonged construction permits	Fragmented expatriate approvals
Primary goal	Faster industrial development	Move from construction to production within 10 to 12 months	Faster, predictable EP approvals
Governance level	Local (multiagency)	Local (state and federal coordination)	Federal (multi-ministry)
Key change	Parallel processing and facilitation	Pre-consultation and WoG coordination	API-based system integration
Digital intensity	Low–moderate	Moderate	High
Key success factor	Leadership and early alignment	Agile regulation and crisis response	Digital interoperability
Impact	Time savings of 8–12 months	Timeline reduced by approximately 70%	Significant delay reduction
Replicability	High (industrial municipalities)	High (industrial regions)	Very high (national systems)

Source: Author's synthesis based on internal documents (MPC, 2024b; MPKu, 2024; Majlis Perbandaran Selayang, 2024).
Note: API, application programming interface; E10, Express Construction Permit; EP, Employment Pass; KFL, Kulai Fast Lane; MPC, Malaysia Productivity Corporation; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council); WoG, whole-of-government.

Analysis of Contextual Factors Affecting Public Sector Innovation

A review of the KFL, E10 system, and end-to-end EP reform reveals that contextual factors played a decisive role in shaping the design, urgency, and execution of each initiative. As Table 3 shows, national priorities, local economic dynamics, and institutional constraints collectively drove a shift from traditional bureaucracy toward more agile, integrated, and outcome-oriented governance models.

For KFL, strong industrial growth in Johor, particularly around Sedenak Tech Park and Senai Airport City (Department of Statistics Malaysia, 2024), intensified pressure on the local authority to accelerate development approvals. A legacy of sequential processes threatened Kulai's competitiveness relative to regional hubs, such as Iskandar, Singapore, and Batam. These pressures, reinforced by expectations under the RKB agenda, created the conditions for an integrated, facilitation-driven process innovation.

The E10 system emerged under crisis conditions during the COVID-19 pandemic. Economic disruption, underutilized industrial land, and approval delays of 30–44 months posed significant risks to Kulim's economic trajectory. Crisis urgency catalyzed rapid institutional reform, requiring deep multiagency collaboration, agile regulation, and milestone-based facilitation to restore industrial momentum.

The end-to-end EP reform was driven by national-level imperatives, including global competition for skilled talent, economic upgrading objectives, and digitalization priorities under MyDIGITAL and RKB. Fragmentation across the Immigration Department, TalentCorp, JTKSM, and SOCSO

created delays and compliance uncertainty that constrained high-value industries. These contextual factors reinforced the need for unified digital and regulatory reform.

Across all three cases, economic, institutional, and technological pressures acted as both triggers and enablers of innovation. Together, they demonstrate that effective public sector reform is highly context-dependent and most successful when aligned with national priorities, local development needs, and global competitiveness objectives, enabling government to act as a catalyst for productivity and economic growth.

TABLE 3

CONTEXTUAL FACTOR COMPARISON MATRIX

Contextual Dimension	KFL	E10	End-to-End EP Reform
Economic context	Rapid industrial growth and rising investor demand	COVID-19 economic shock and stalled projects	Global competition for skilled talent
Regulatory context	Fragmented approvals and RKB-driven burden reduction	Long approval cycles and need for predictability	Disconnected compliance across agencies
Institutional context	Strong local leadership and multiagency coordination	Crisis-driven need for agile governance	Strong federal mandate and WoG coordination
Technological context	Emerging digital tools and workflow integration	Moderate digitalization (OSC, GIS)	High digital readiness and API interoperability
Policy and political context	RKB mandate and Johor development priorities	Economic recovery imperative	MyDIGITAL, RKB, and investment facilitation
Stakeholder pressure	Investor demand for speed	Job creation urgency and industry pressure	Employer demand for transparency
Administrative culture	Shift to facilitation-oriented governance	Rapid, collaborative problem-solving	Digital-first, data-driven administration
Catalyst for innovation	Growth pressure and reform mandate	Economic crisis	Digital transformation and talent mobility

Source: Prepared using internal data from MPC (2024a, 2024b), MPKu (2024, 2025), and Majlis Perbandaran Selayang (2024).
Note: API, application programming interface; COVID-19, coronavirus disease 2019; E10, Express Construction Permit; EP, Employment Pass; GIS, geographic information system; KFL, Kulai Fast Lane; MPC, Malaysia Productivity Corporation; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council); MyDIGITAL, Malaysia Digital Economy Blueprint; OSC, One Stop Centre; RKB, Reformasi Karenah Birokrasi (Reform of Bureaucratic Burdens); WoG, whole-of-government.

KEY DRIVERS OF IMPROVEMENT

A comparative assessment of the KFL, E10 system, and end-to-end EP reform identifies a shared set of enablers that translated policy intent into measurable gains in productivity, regulatory throughput, and service delivery (Table 4). Collectively, the cases demonstrate how public institutions can transition from fragmented, compliance-driven models to integrated, agile, and outcome-oriented systems, offering scalable lessons for APO member economies.

First, across all three initiatives, leadership commitment and strategic clarity were central drivers. Clear outcome-based mandates aligned organizations, legitimized new operating models, and enabled agencies to move beyond legacy practices. This was reinforced by a WoG approach that reduced silos through shared objectives, accountability, and structured coordination.

Second, reforms were facilitated by regulatory and process agility. At the local level, KFL and E10 simplified requirements, enabled parallel processing, and empowered frontline decision-making. At the national level, the end-to-end EP reform achieved similar gains through regulatory standardization and automated compliance at scale.

Third, digital enablement acted as a critical performance multiplier. Single-window platforms, API integration, automated verification, and digital tools improved transparency, data integrity, and workflow efficiency while reducing manual effort and governance risk.

Finally, a facilitative, customer-focused service orientation, combined with strong alignment to national frameworks such as RKB and digital government priorities, provided legitimacy, urgency, and scalability.

Together, these enablers illustrate that sustainable public sector innovation depends on the integrated application of leadership, governance, regulation, technology, and service design to deliver system-wide impact.

TABLE 4

KEY DRIVERS OF IMPROVEMENT ACROSS THE THREE INNOVATIONS.

Key Driver	How It Enabled Improvement	Illustrative Examples
Leadership and strategic clarity	Aligned organizations, reduced resistance, and accelerated decisions	MPKu development of KFL, crisis leadership in E10, and federal backing for end-to-end EP reform
WoG collaboration	Reduced silos, synchronized approvals, and shared accountability	Multiagency coordination in KFL and E10; Immigration Department, TalentCorp, JTKSM, and SOCSO in end-to-end EP reform
Regulatory and process agility	Faster processing, fewer bottlenecks, and higher responsiveness	Parallel processing (KFL), agile regulation (E10), and automated checks (end-to-end EP reform)
Digital enablement	Automation, transparency, and efficiency gains	GIS and OSC 3.0 (E10), API integration (end-to-end EP reform), and digital monitoring (KFL)
Facilitation and user focus	Improved user experience, trust, and compliance	Project Brief (KFL), continuous engagement (E10), and Xpats Gateway guidance (end-to-end EP reform)
National policy alignment	Legitimized reform, enabled scaling, and reduced resistance	RKB shaped KFL and E10; MyDIGITAL enabled end-to-end EP reform
External pressure (crisis/ competition)	Created urgency and reform momentum	COVID-19 shock (E10) and global talent competition (end-to-end EP reform)
Institutional capability	Sustained implementation and performance	MPKu workflows, Kulim technical teams, and TalentCorp digital readiness
Monitoring and accountability	Performance discipline and rapid correction	Monthly reviews (KFL), milestones (E10), and real-time tracking (end-to-end EP reform)
Stakeholder engagement	Relevance, adoption, and reduced conflict	PSP consultations (KFL), investor engagement (E10), and employer feedback (end-to-end EP reform)

Source: Author's compilation based on findings from MPC (2024b, pp. 1–4), MPKu (2024), Majlis Perbandaran Selayang (2024).
Note: API, application programming interface; COVID-19, coronavirus disease 2019; E10, Express Construction Permit; EP, Employment Pass; GIS, geographic information system; JTKSM, Department of Labour of Peninsular Malaysia; KFL, Kulai Fast Lane; MPC, Malaysia Productivity Corporation; MPKu, Majlis Perbandaran Kulai (Kulai Municipal Council); MyDIGITAL, Malaysia Digital Economy Blueprint; OSC, One Stop Centre; PSP, Principal Submitting Person; RKB, Reformasi Karenah Birokrasi (Reform of Bureaucratic Burdens); SOCSO, ; WoG, whole-of-government.

RECOMMENDATIONS

This report's analysis of Malaysia's three innovation initiatives, namely, KFL, the E10 system, and the end-to-end EP reform, offers practical lessons for strengthening public sector innovation across APO member economies. The recommendations focus on institutional design, operational practice, and policy alignment to improve productivity and service outcomes.

First, governments should institutionalize WoG governance structures to address fragmentation across regulatory and service delivery systems. As the cases show, high-impact reform depends on multiagency coordination supported by joint steering mechanisms, shared decision rights, integrated review processes, and common performance indicators. Shared digital infrastructure should be prioritized to enable secure coordination and data exchange.

Second, governments should embed regulatory and process agility as standard practice. This includes parallel processing, early technical engagement, risk-based decision-making, and sandbox-style mechanisms that accelerate approvals while maintaining compliance. To ensure sustainability, agile approaches should be codified into standard operating procedures and institutional frameworks rather than relying on individual leadership.

Third, governments should accelerate digital transformation and data interoperability as core productivity levers. The end-to-end EP reform illustrates the scale of impact achievable through integrated platforms, API connectivity, and strong digital governance. Subnational governments should adopt phased approaches that progress from digital documentation and workflow tracking toward fully integrated end-to-end systems.

Fourth, governments should adopt a customer-centric facilitation culture across public services. Shifting from regulator-centric administration to facilitative governance through structured pre-consultation, proactive engagement, transparent communication, and predictable service commitments improves compliance, user satisfaction, and economic activation.

Fifth, governments should formalize performance monitoring and accountability mechanisms. Digital dashboards, milestone-based tracking, escalation protocols, and regular performance reviews are critical for sustaining momentum, reinforcing delivery discipline, and ensuring consistent service standards.

Finally, governments should ensure strong alignment with national policy frameworks. Alignment with regulatory reform agendas, digital government strategies, human capital policies, and economic development plans enhances legitimacy, mobilizes resources, and enables replication across jurisdictions. In Malaysia, alignment with RKB and MyDIGITAL accelerated reform across all three cases.

Taken together, these recommendations underscore that effective public sector innovation requires coordinated action across leadership, governance, regulation, technology, organizational culture, and policy. APO member economies can apply these insights in designing scalable and sustainable innovation ecosystems that deliver measurable productivity gains.

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BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF MONGOLIA

EXECUTIVE SUMMARY

This report aims to understand how member governments conceptualize, organize, and sustain innovation across public institutions. As Mongolia's national expert, I conducted desk research, policy and document analysis, reviews of legal and institutional frameworks, and interviews with practitioners and citizens to assess Mongolia's current progress in public sector innovation.

Mongolia is undergoing significant public sector transformation, driven by administrative reform, digitalization, and a shift toward citizen-centered governance. Anchored in long-term and sectoral policy instruments such as Vision 2050 (State Great Hural, 2020) and the "Digital Nation" guidelines (2022–2027) (Ministry of Digital Development and Communications, 2022), the government has established a policy foundation for continued modernization and public-service improvement.

This report defines public sector innovation as the systematic application of new or significantly improved ideas, technologies, and processes that deliver higher public value through more efficient, transparent, and inclusive services. To illustrate Mongolia's innovation trajectory, the study documents three flagship initiatives:

1. E-Mongolia platform: A national digital service portal offering more than 1,200 services from 80 agencies

2. "11-11" Citizens' Call Center (11-11 Center): A multichannel feedback and accountability mechanism connecting citizens with government

3. Ulaanbaatar One-Stop Service Centers: Decentralized service halls that co-locate municipal and national government services

These initiatives demonstrate how innovation manifests across technological, governance, and organizational dimensions. The collected evidence highlights several outcomes:

- Efficiency: Service processing times have been reduced by up to 95%, while annual transaction costs have been cut by tens of billions of Mongolian Tögrög.

- Transparency and accountability: Digital audit trails and citizen-feedback loops have reduced discretionary decision-making and improved responsiveness.

- Accessibility and inclusion: Equitable access is being expanded nationwide through a balanced mix of digital platforms and physical service centers.

- Citizen trust: Satisfaction levels consistently exceed 80% across major channels.

The analysis categorizes innovations by type (technological, process, organizational, service, and governance) and examines enabling conditions, such as political commitment, legal frameworks, cross-agency coordination, infrastructure, human capital, socio-cultural factors, and geography. Key drivers include strong national leadership, a unifying "Digital Nation" vision, continuous civil service capacity building, and collaboration with international partners.

Building on these foundations, this report offers recommendations for institutionalizing innovation governance, strengthening data systems, scaling service accessibility, and embedding evaluation mechanisms to ensure that innovation directly enhances productivity and citizen well-being.

I wish to extend my gratitude the Ministry of Digital Development, Innovation and Communications, the Cabinet Secretariat of the Government of Mongolia, the E-Mongolia Academy, and the Ulaanbaatar Mayor's Office, whose data and insights made this study possible.

BACKGROUND

Defining Public Sector Innovation in Mongolia

In Mongolia, public sector innovation refers to the systematic introduction of new or significantly improved ideas, processes, technologies, and organizational models that enhance efficiency, transparency, inclusiveness, and accountability in governance. This definition is consistent with the State Policy on Innovation (2018–2025) (Government of Mongolia, 2018) and the "Digital Nation" guidelines (2022–2027) (Ministry of Digital Development and Communications, 2022), which frame innovation and digital transformation as instruments for improving public-sector performance and service delivery.

Rather than focusing solely on digitalization, Mongolia conceptualizes innovation as an institutional transformation integrating technology, policy reform, and cultural change within the civil service. Advanced by the Digital Nation Vision (2020), this approach emphasizes interoperability, open data, and citizen-centered services as the foundations of modern governance.

Policy Framework and Institutional Architecture

Mongolia's public sector innovation ecosystem is guided by a set of strategic and policy instruments, notably Vision 2050, the State Policy on Innovation (2018–2025), and the "Digital Nation" guidelines (2022–2027). Together, these instruments provide direction for digital government, innovation, infrastructure and cybersecurity, and digital inclusion.

1. Digital government and governance modernization

2. Digital economy and innovation ecosystem development

3. Digital infrastructure and cybersecurity

4. Digital literacy and inclusion

The Ministry of Digital Development, Innovation and Communications (MDDIC) leads national coordination, while the E-Mongolia Academy, which integrates over 1,200 services from 80 organizations, serves as the main implementation agency. The Cabinet Secretariat of the Government of Mongolia (CSM) operates the 11-11 Center, strengthening accountability. The Ulaanbaatar Mayor's Office manages the One-Stop Service Centers (OSSCs), which extend innovation to the local level. Supporting institutions include the National Data Center, Cyber Security Agency, and Communications Regulatory Commission of Mongolia (CRC), ensuring secure and interoperable systems.

Legislative oversight is provided by the Standing Committee on Innovation and Digital Policy of Parliament, while the National Academy of Governance (NAOG) trains civil servants in digital governance and service design.

Table 1 summarizes the key actors and their roles in Mongolia's public sector innovation ecosystem.

TABLE 1

KEY ACTORS IN MONGOLIA'S PUBLIC SECTOR INNOVATION ECOSYSTEM.

Category	Key Actors	Primary Roles in Innovation
Government leadership	Prime Minister's Office and the Cabinet Secretariat	Strategic direction and coordination
Policy and coordination	MDDIC, Ministry of Economy and Development, and Ministry of Finance	Policy alignment, budgeting, and oversight
Implementation agencies	E-Mongolia Academy, National Data Center, and the Cyber Security Agency	Platform development, infrastructure, and security
Regulatory bodies	CRC and the Personal Data Protection Authority	Enforcement of standards and privacy compliance
Local governments	Ulaanbaatar Mayor's Office and Aimag/ District Administrations	OSSCs and local service delivery
Research and academia	National University of Mongolia, Mongolian University of Science and Technology, and NAOG	Training, research, and capacity building
International partners	APO, ADB, WB, UNDP, and the E-Governance Academy	Technical assistance, funding, and benchmarking

Source: Authors' compilation based on MDDIC and UNDP (2025).
Note: APO, Asian Productivity Organization; CRC, Communications Regulatory Commission of Mongolia; MDDIC, Ministry of Digital Development, Innovation and Communications; NAOG, National Academy of Governance OSSCs, One-Stop Service Centers.

Context and Enabling Conditions

Mongolia's vast territory, dispersed population, and nomadic heritage have encouraged a *hybrid innovation model* that blends digital platforms with physical service networks. A high mobile penetration rate (120%) and national digital identity (ID) system have accelerated the adoption of public sector innovations, while decentralization reforms empower local governments to adapt innovations to local needs.

Political commitment has been a significant enabling factor. The government formalized a national digital-transformation direction through the "Digital Nation" guidelines (2022–2027), which set objectives covering digital infrastructure, e-government, information security, digital literacy, innovation, and the digital economy (Ministry of Digital Development and Communications, 2022).

This policy direction has supported cross-agency coordination and the continued expansion of digital public services.

Continuous capacity development complements these investments. Through NAOG, thousands of civil servants have received training in digital literacy, service design, and innovation management, establishing the human-resource base required for long-term reform.

In summary, Mongolia's policy and institutional environment now provides the strategic, legal, and operational foundation for sustained public sector innovation supported by strong leadership, coherent coordination, and growing citizen engagement.

ANALYSIS OF INNOVATION RESULTS AND THEIR LINK TO OUTCOMES

Public sector innovation in Mongolia has advanced from scattered pilot projects to a coordinated, system-wide transformation. The combined outcomes of the E-Mongolia platform, 11-11 Center, and Ulaanbaatar's OSSCs reveal how integrated innovation can deliver measurable improvements in efficiency, transparency, accessibility, and citizen trust, that is, the four pillars of productivity identified in the APO framework.

Overall Performance Outcomes (2020–2024)

As shown in Table 2, the key performance indicators demonstrate significant improvements in innovation outcomes between 2020 and 2024.The overall trend confirms that innovation initiatives have contributed to greater output efficiency (reducing time and cost per transaction) and improved outcome effectiveness (improving quality, accessibility, and reliability).

TABLE 2

KEY PERFORMANCE INDICATORS OF INNOVATION OUTCOMES, 2020–2024.

Indicator	2020	2022	2024/Latest	Remarks
Public e-services available online (E-Mongolia)	181	571	1,200+	Integration of services from 80 agencies
Organizations connected to E-Mongolia	25	59	86	Cross-agency interoperability achieved
Verified digital ID users (million)	0.6	1.3	1.9	Active citizen accounts
Average service completion time (hours)	3.0	0.3	0.1	Over 95% reduction
Annual administrative cost savings (MNT billion)	—	52.6	75.4	Cumulative government and citizen savings
11-11 Center: Registered issues per year	—	—	66,332	93.5% resolution rate
11-11 Center: Individuals contacting per year	—	—	141,246	All communication channels combined
OSSCs: Average daily visits per site	—	—	200–300	Typical throughput per district center
Citizens' satisfaction with digital services (%)	67	78	85	National survey of users

Source: Compiled by the authors based on data from MDDIC (2025).
Note: MDDIC, Ministry of Digital Development, Innovation and Communications; MNT, Mongolian Tögrög; OSSCs, One-Stop Service Centers.

Efficiency and Productivity

The most visible effect of innovation has been the dramatic reduction in administrative workload and transaction time. Indeed, the E-Mongolia platform has automated more than 70 processes that

previously required manual verification, cutting processing times by an average of 95% (MDDIC, 2025). For example, land-use certificates that once took 3 days to secure can now be obtained in less than 30 min. Online document verification and e-payment functions also save both citizens and agencies travel, printing, and handling costs.

Internal efficiency has also improved. Government agencies have reported average workload reductions of 25–30% in front-office staff. The elimination of repetitive data entry has allowed civil servants to shift from clerical to analytical and citizen-advisory functions. These productivity gains have enabled civil servants to shift from clerical tasks to more analytical and citizen-advisory functions. These productivity gains are reflected in the APO's indicator of "output per public-employee hour."

At the local level, Ulaanbaatar's OSSCs increased throughput threefold between 2018 and 2024, handling approximately 2.5 million transactions annually. The integration of digital kiosks and quick response (QR) code-based queuing systems has further optimized staff allocation and queue management.

Transparency and Accountability

Innovation has also deepened institutional transparency and citizen oversight. The 11-11 Center, operated by the CSM, established a unified workflow connecting 70 ministries and agencies through a ticket-tracking system. Each submission receives a unique code and must be resolved within statutory timeframes. The system produces public dashboards showing complaint categories, responsible agencies, and resolution rates, thus turning citizen feedback into a measurable governance key performance indicator (KPI).

From 2020 to 2024, the 11-11 Center handled more than 260,000 cases. Of these, 93–95% have been resolved (CSM, 2025), with the remaining cases pending clarification. Integration with the E-Mongolia backend allows users to verify complaint status in real time, a practice now benchmarked by other government hotlines in the Asia-Pacific region.

The E-Mongolia Academy's internal audit module automatically logs each digital transaction, generating tamperproof records. This digital audit trail has become an invaluable tool for anti-corruption monitoring and performance-based budget allocation, thus institutionalizing accountability through technology.

Accessibility and Inclusion

Geographically, Mongolia is characterized by vast distances and a dispersed population. Consequently, the combination of digital and physical channels has been crucial to ensuring the accessibility of services across Mongolia. The E-Mongolia platform provides 24/7 access nationwide, while mobile network coverage exceeds 95%. In Ulaanbaatar and all 21 aimags, OSSCs ensure the inclusion of citizens lacking digital skills or reliable internet access. The 11-11 Center offers multichannel entry (phone, SMS, social media, web, and in-person visits), serving approximately 12,000 calls per month.

As a result of these innovations, access to public services has expanded sharply. Rural users now constitute 38% of E-Mongolia traffic, and 82% of surveyed rural residents rate service quality equal to that of their urban counterparts (E-Mongolia Academy, 2023). These data confirm that innovations have reduced spatial and social inequality, aligning with the APO's equity dimension of productivity.

Citizen Trust and Satisfaction

Citizen satisfaction serves as the ultimate measure of public sector innovation success. Annual nationwide surveys and platform feedback analytics show sustained improvement across all major channels:

- E-Mongolia: 85% of users rated their experience as "satisfactory" or "very satisfactory" in 2024, citing speed, simplicity, and reduced need for in-person visits.
- 11-11 Center: Over 90% of respondents agreed that the system improved government responsiveness.
- OSSCs: Customer flow data show an 87% overall satisfaction rate and a threefold reduction in average waiting time.

The available evidence provides stronger support for improvements in service satisfaction and user experience than for changes in generalized trust in government. The 2025 Artificial Intelligence Landscape Assessment of Mongolia identifies trust, inclusion, governance, and accountability as important conditions for responsible digital transformation (MDDIC & UNDP, 2025). Accordingly, the satisfaction indicators reported above are treated here as service-level evidence rather than as a direct national measure of institutional trust.

Institutional Impact and Productivity Gains

Beyond service-level outcomes, innovation has reconfigured organizational efficiency and knowledge management within government.

- Interoperable databases allow ministries to exchange real-time information, reducing redundant data requests by 40%.
- Shared digital ID via the Electronic Know Your Customer (e-KYC) process has streamlined verification across 86 agencies.
- The number of interagency memoranda of understanding required for data exchange fell from 60 in 2019 to just 8 in 2024.

These changes have produced measurable *institutional productivity gains*:

1. Resource optimization: Staff reallocated from counter operations to analytical tasks
2. Process standardization: Uniform digital templates reduce procedural variance
3. Decision-support capacity: AI-enabled dashboards in pilot ministries provide data for evidence-based policymaking

The combined effect is a leaner, data-driven public administration capable of continuous learning, an essential condition for sustaining innovation.

Results Pathway and Systems Integration

To visualize the cumulative relationships between inputs, innovations, and outcomes, Table 3 illustrates Mongolia's results pathway for public sector innovation.

TABLE 3

RESULTS PATHWAY OF MONGOLIA'S PUBLIC SECTOR INNOVATIONS.

Inputs	Innovation Mechanisms	Immediate Outputs	Intermediate Outcomes	Long-Term Impacts
Policy leadership and budget allocations (2020–2024)	Digital platforms (E-Mongolia), feedback systems (11-11), service integration (OSSCs)	Automated services, open dashboards, and co-located facilities	Reduced processing time, greater transparency, and improved access for citizens	Productivity growth, trust in institutions, and inclusive digital governance

Source: Authors' compilation based on MDDIC and UNDP (2025).
Note: MDDIC, Ministry of Digital Development, Innovation and Communications; OSSCs, One-Stop Service Centers.

Per the results pathway presented in Table 3, inputs (resources and policy mandates) enabled innovation mechanisms that produced measurable service outputs, which in turn generated intermediate outcomes (efficiency, transparency, and accessibility), culminating in broader socioeconomic impacts

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN MONGOLIA

Public sector innovation in Mongolia has evolved from isolated e-government pilots to a nationally integrated digital-governance ecosystem. Three flagship initiatives, namely, the E-Mongolia platform, the 11-11 Center, and Ulaanbaatar's OSSCs, illustrate technological, governance, and organizational innovation, respectively. Together, these innovations show how policy intent has translated into measurable structural, procedural, and outcome-level improvements across government.

E-Mongolia Platform

Description and Improvements

Launched in 2020 by the MDDIC and operated by the E-Mongolia Academy, the E-Mongolia platform integrates over 1,200 public services from 86 agencies through a single web and mobile gateway (E-Mongolia Academy, 2024). Its interoperability layer links core registries via secure application programming interfaces (APIs) hosted at the National Data Center, including citizen ID, property, social insurance, and taxation.

The innovation lies not merely in digitizing forms but in reengineering the bureaucratic architecture of service delivery. Processes once requiring physical queues and multiple stamps have been re-sequenced into straight-through digital workflows. This has reduced the average processing time for routine services by 95%, with service times shortened from 3 h to just 6 min. Meanwhile, annual administrative cost savings have reached MNT75 billion (E-Mongolia Academy, 2024).

Beyond efficiency, E-Mongolia has institutionalized real-time transparency: every transaction leaves a traceable audit trail, dashboards display daily usage statistics, and agencies are ranked on responsiveness. These structural and process reforms have produced outcome gains in citizen trust and accessibility.

Actors Involved

The development and rollout of E-Mongolia involved a coalition of actors led by the government. The Communications and Information Technology Authority, later elevated to the MDDIC, spearheaded the project. The project had high-level support from the minister and chief of the CSM and even the prime minister, who made digital government a top priority. The technical implementation was carried out by the E-Mongolia Academy, which coordinated a team of domestic IT companies and developers. Private sector partners contributed by building specific modules; for example, local tech firms helped integrate payment systems and facilitated mobile app development. Eighty-seven government organizations participated by digitizing their services and linking their backend databases to the platform, including ministries (issuing permits and licenses), the General Authority for State Registration (civil records), General Department of Taxation, Social Insurance General Office, and courts (for police clearances). Each had to adapt their procedures to align with the common platform, often with support from the E-Mongolia Academy's technical team.

Key Characteristics

Table 4 summarizes the key characteristics of the E-Mongolia platform.

TABLE 4

CHARACTERISTICS OF THE E-MONGOLIA DIGITAL PLATFORM.

Attribute	Description
Type of innovation	Digital service delivery and process integration
Sectors covered	Cross-sector (e.g., civil registry, taxation, welfare, permits, justice, and land records)
Level of government	National; connects central agencies and local administrations
Policy context	Digital Nation Agenda (2020–2028); coronavirus disease 2019 as an accelerator
Lead organizations	MDDIC and E-Mongolia Academy
Supporting actors	Prime Minister's Office, over 60 agencies, UNDP, ADB, and local IT firms
Target beneficiaries	Citizens and businesses nationwide

Source: Authors' compilation based on the CSM (2023, 2025) and E-Mongolia Academy (2024).
Note: CSM, Cabinet Secretariat of the Government of Mongolia; MDDIC, Ministry of Digital Development, Innovation and Communications.

Results and Outcomes

Table 5 summarizes the key results of the E-Mongolia platform, 2020–2024.

TABLE 5

E-MONGOLIA: KEY RESULTS, 2020–2024.

Indicator	2020	2024	Change
Services available	181	1,200+	+562%
Average processing time/transaction	3 h	6 min	–95%
Registered users (million)	0.6	1.9	+216%
Annual cost savings (MNT)	—	75.4 billion	New
Satisfaction (users rating "good/very good")	67%	85%	+18 percentage points

Source: Authors' compilation based on the E-Mongolia Academy (2024) data.
Note: MNT, Mongolian Tögrög.

Quantitative impacts illustrate the platform's transformative effect:

- User reach: 1.9 million accounts as of December 2024
- Transactions: 31.7 million completed since launch; average monthly volume approximately 1.2 million
- Service integration: More than 1,200 online services available through the E-Mongolia platform. Economic savings: MNT269 billion (USD77 million) in citizen cost savings
- Time efficiency: Typical certificate issuance reduced from 5 working days to 5 min
- Transparency: All applications traceable in real time through transaction IDs

Mongolia's ranking in the UN E-Government Development Index improved from 74th in 2022 to 46th in 2024 (UN Department of Economic and Social Affairs, 2024). This improvement documents progress in digital-government development; it should not, by itself, be interpreted as a direct measure of citizen trust.

Success Factors

- Political commitment: Strong leadership by the prime minister has ensured agency compliance and budget continuity.
- Dedicated institution: E-Mongolia Academy functions as a technical nerve center insulated from bureaucratic delays.
- Legal and regulatory enablers: The revised Law of Mongolia on Electronic Signatures (Unified Legal Information System, 2021a) and data-exchange protocols provide a legal framework for the recognition and use of electronic records and signatures.
- Infrastructure expansion: Nationwide fiber and 4G coverage (99% population reach) enable remote access.
- Citizen inclusion: Rural kiosks and public support desks have bridged digital divides.

Sustainability and Scalability

E-Mongolia is institutionalized through the Government Action Plan 2024–2028, which requires all remaining services to be digitized under its umbrella. Planned upgrades include AI-driven chat support and interoperability with private e-services (e.g., banks and utilities). The platform is financially sustainable through annual budget allocations and transaction-based operational savings of approximately MNT15 billion per year.

Lessons Learned

Mongolia's experience demonstrates that digital transformation in emerging economies requires not only technology but political alignment, legal certainty, and citizen readiness. E-Mongolia proves that rapid modernization is possible when these elements are synchronized.

"11-11" Citizens' Call Center

Context and Purpose

Public sector innovation in Mongolia has increasingly emphasized transparency and citizen engagement as governance principles. The 11-11 Center began receiving citizen feedback in 2012 and has since operated as a national multichannel interface for complaints, inquiries, and suggestions (Open Government Partnership [OGP], 2018; The General Authority for State Registration, 2012). The system provides a single-entry point through which submissions can be logged and routed to responsible public bodies.

Before the introduction of the 11-11 Center, individual citizens submitted written petitions to ministries, often resulting in lost or delayed responses. By introducing a unified hotline, online platform (www.11-11.mn), and mobile app, the CSM created a *single national entry point* for all complaints, inquiries, and suggestions. Every submission now receives a unique identification code and is automatically routed to the appropriate ministry, agency, or local office.

The 11-11 Center aligns with Mongolia's OGP commitments on participation, transparency, and responsiveness (OGP, 2018). Its multichannel and trackable workflow also reflects a broader shift toward citizen-oriented public administration and the use of feedback data in government decision-making.

Objectives and Innovation Design

The 11-11 Center aims to

1. Enhance public sector accountability by ensuring every citizen's query or complaint is registered and answered;

2. Improve service quality through real-time monitoring of agency responsiveness; and

3. Generate policy intelligence by aggregating feedback trends across sectors.

From an innovation typology perspective, the 11-11 Center represents a hybrid organizational and process innovation. It is an organizational innovation because it reconfigures the workflow between citizens and ministries, and a process innovation because it digitizes petition handling.

The system operates through three core components:

- Front-end communication: Citizens access the service via phone ("11-11"), web portal, mobile app, social media channels, email, or in-person visits.

- Backend database and workflow engine: Submissions are logged, coded by issue type, and automatically forwarded to designated focal points in over 75 agencies.

- Monitoring and reporting dashboard: Supervisors at the CSM monitor deadlines and generate weekly and monthly reports.

Operators work in shifts (08:00–22:00) handling an average of 350–400 calls per day. A dedicated Monitoring Division analyzes data and identifies systemic problems for follow-up at the prime

minister's weekly coordination meeting. In 2023, "hotline extension 5" was launched for anti-corruption tips, further broadening the platform's functionality (CSM, 2025).

Actors Involved

The 11-11 Center is operated by the CSM and reports to the Prime Minister's Office. The 11-11 Center falls under the CSM's Department of Public and Media Relations and is centrally managed to coordinate across ministries. The frontline staff comprise call operators and system administrators who handle citizen communications and maintain the database. Staff members need to be well-versed in government operations to properly route inquiries. The 75 participating organizations are critical actors. Participating organizations include every ministry (e.g. Ministry of Health for healthcare complaints, Ministry of Education for school issues), agencies (e.g., the General Department of Taxation and the Social Insurance General Office), Ulaanbaatar city and district offices (as municipal issues form a large share), as well as regional administrations for local issues. Each entity has focal persons responsible for receiving and addressing 11-11 referrals.

Quantitative Performance (2024–2025)

Table 6 presents a statistical overview of the 11-11 Center, 2023–2025.

TABLE 6

STATISTICAL OVERVIEW OF THE 11-11 CITIZENS' CALL CENTER.

Indicator	2023	2024	2025 (January–August)	Trend and Remarks
Total citizen contacts (all channels)	98,462	141,246	93,580	43% growth (2023–2024); steady use in 2025
Formal registered complaints	47,800	66,018	44,700	38% growth
Average daily calls	270	387	392	Stable capacity
Resolution rate (with official response)	92.1%	93.5%	94.0%	Slight improvement
Average response time	14 days	12 days	11.6 days	Process efficiency gained
Corruption/ethics tips	518	742	560	Used for policy and disciplinary actions
Share of Ulaanbaatar-related issues	54%	52%	49%	Indicates broader nationwide reach

Source: CSM (2024), unpublished weekly and monthly performance reports.
Note: CSM, Cabinet Secretariat of the Government of Mongolia.

In 2024, citizens accessed the 11-11 Center's services through multiple communication channels, including phone, the website, the mobile app, and social media. The remaining users (less than 1%) accessed services through walk-ins. Geographically, the 11-11 Center handled complaints from all 21 aimags and the capital, showing the effectiveness of telephone and digital reach.

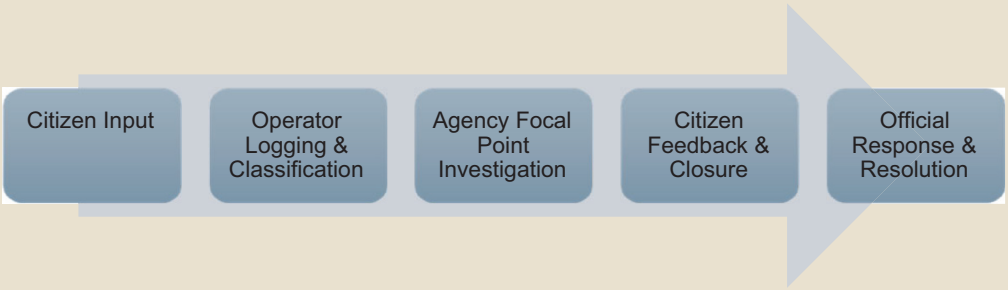
Governance and Workflow

Each participating agency appoints a "focal officer" responsible for handling incoming cases. The CSM's central dashboard monitors status as "open," "under review," "answered," or "closed." Automatic reminders and escalations are sent if no progress occurs after 7 working days. Weekly aggregated data feed into CSM sessions chaired by the prime minister.

Regarding case response, the legal basis is provided by the Law of Mongolia on Resolving Petitions and Complaints from Citizens to State Authorities and Public Officials (Unified Legal Information System, 1995), which establishes procedures and time limits for public bodies to receive and respond to petitions and complaints. The 11-11 Center therefore functions as both a service channel and a mechanism for monitoring the handling of citizen submissions.

FIGURE 1

FUNCTION WORKFLOW OF THE 11-11 CENTER.



Source: Authors' compilation based on CSM (2024).
Note: CSM, Cabinet Secretariat of the Government of Mongolia.

Outcomes and Impact

- Over 600,000 citizens have used the 11-11 Center since its launch (2012–2025).
- The average annual growth rate of contact volume is approximately 22%.
- The resolution rate has exceeded 90% for six consecutive years.
- Over 2,000 cases led to policy or administrative corrections identified through trend analysis (CSM, 2025).

Success Factors

- Political and institutional support: The prime minister's direct oversight ensures that ministries treat complaint resolution as a governance priority. Regular publication of resolution rates creates reputational incentives.
- Accessibility and equity: Multiple communication channels make the service inclusive, especially for citizens without internet access. The 11-11 Center operates in both Mongolian and Kazakh languages and provides translation support for disabled callers.
- Technological infrastructure: The 11-11 Center's custom-built customer relationship management (CRM) system, upgraded in 2021, tracks each case status and archives voice records for audit. AI-based keyword analysis, introduced in 2024, categorizes topics automatically, reducing operator workload by 20%.
- Transparency and open data: Weekly dashboards are published on 11-11.mn and social media. Independent media and civil society groups use the data to evaluate ministerial responsiveness.

A Transparency International Mongolia (2020) survey found that 78% of respondents believed that the 11-11 Center improves government openness.

- Professional capacity: Staff undergo continuous training in public communication and legal procedures. The average operator handles 30 calls per shift, with a customer satisfaction score of 92%.

- Integration with policy processes: Aggregated data directly inform policy interventions. For instance, frequent complaints about Ulaanbaatar heating and waste collection in 2023 led to the creation of a municipal task force to coordinate winter maintenance.

Challenges and Lessons Learned

Despite high utilization, challenges remain, including inconsistent response quality across ministries, delays in complex multiagency cases, and limited regional awareness outside Ulaanbaatar. To address these challenges, the CSM is developing regional satellite call centers and piloting integration with the E-Mongolia app to enable the digital tracking of complaints.

Lessons learned include the importance of high-level championship of innovation initiatives, public data transparency to sustain trust, and the use of feedback loops to inform policy. Mongolia's experience shows that citizen feedback systems can evolve from reactive complaint handling to proactive governance analytics.

Sustainability and Future Directions

The 11-11 Center has operated continuously through multiple administrations, indicating strong institutionalization. Its annual budget (approximately MNT1.6 billion in 2024) is secured under the CSM's line item. The model has proven financially sustainable due to low infrastructure costs and high social return.

Future plans (2025–2027) include the following:

- Integration with E-Mongolia for shared login and status tracking

- AI chatbot pilot for handling frequently asked questions

- Opening of regional subcenters in Darkhan, Erdenet, and Choibalsan

- Development of a public dashboard displaying real-time resolution rates

Through these developments, the 11-11 Center is evolving from a hotline to a data-driven citizen engagement system, emerging as an institutional pillar of Mongolia's open government architecture.

Ulaanbaatar's OSSCs

Background and Rationale

Mongolia's urban population is highly concentrated in Ulaanbaatar, creating strong demand for convenient access to public services. In response to fragmented service delivery, Ulaanbaatar introduced an integrated service-center model in 2016 to bring multiple national and municipal services together in one location (Ulaanbaatar City Governor's Office [UBCGO], 2024a). The city-level model builds on Mongolia's earlier one-stop-service framework, including Government

Resolution No. 153 of 2013 (Unified Legal Information System, 2013), and complements the later expansion of digital services through E-Mongolia.

The concept drew on lessons from Korea's Government 24 and Singapore's OneService models (ILO, 2016) and was adapted to Mongolia's administrative structure and socio-spatial constraints. Ulaanbaatar's OSSC initiative represented a shift from departmental silos toward citizen-centric design, aligning with the government's Digital Nation Vision and E-Mongolia's digital expansion.

Actors Involved

In Ulaanbaatar, the Ulaanbaatar City Mayor's Office coordinates the city's integrated service centers together with participating national and municipal agencies. Government Resolution No. 153 of 2013 established a national framework and operating arrangements for one-stop services, providing the legal basis for relevant government bodies and local administrations to implement the model (Unified Legal Information System, 2013). Participating counters include civil registration, social insurance, taxation, land administration, and other public services, with the service mix varying by branch.

Innovation Design and Governance Model

The UBCGO, through its Public Service Department, serves as the program's coordinator. It manages the facilities, budget, and staffing of OSSCs, and coordinates with national agencies. Each participating organization signs a memorandum defining its counter services, data-sharing protocols, and cost-sharing arrangements.

Table 7 summarizes the key characteristics of Ulaanbaatar's OSSCs.

TABLE 7

KEY CHARACTERISTICS OF ULAANBAATAR'S OSSCS.

Attribute	Description
Type of innovation	Institutional and service delivery innovation; multiagency co-location
Sectors covered	Municipal administration, social insurance, taxation, utilities, land management, and banking
Level of government	Local (metropolitan Ulaanbaatar) with national agency representation
Policy context	Smart Ulaanbaatar Program (2016–present), Public Service Reform Agenda, and Digital Nation
Lead organization	UBCGO/Public Service Department
Participating agencies	53 public and private organizations
Service reach (2023)	Together, six major centers and district branches process approximately 1 million transactions per year
Customer satisfaction (2023)	91% (annual city survey)

Source: Authors' compilation based on UBCGO (2024a, 2024b).
Note: OSSCs, One-Stop Service Centers; UBCGO, Ulaanbaatar City Governor's Office.

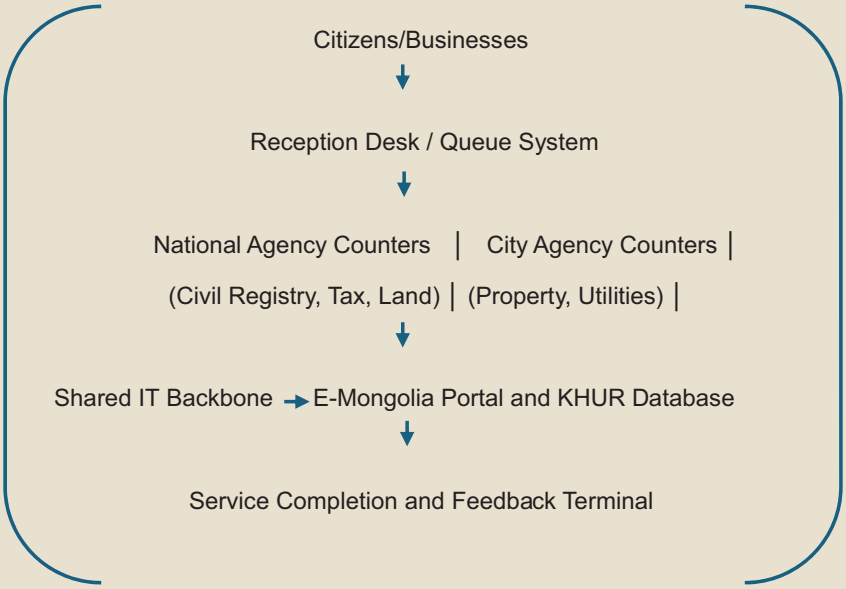
OSSCs are located in Dunjingarav, Dragon, State House, Misheel Expo, 25th District, and the Ulaanbaatar Service Complex. Each center hosts counters for the General Authority for State Registration, Social Insurance General Office, and General Department of Taxation, as well as land-use units and utility companies. Some also host commercial partners (e.g., banks, insurance, postal services).

Operational Structure

Figure 2 presents the Ulaanbaatar OSSC service integration and co-location model.

FIGURE 2

SERVICE INTEGRATION AND CO-LOCATION MODEL OF ULAANBAATAR OSSCS.



Source: Authors' compilation based on UBCGO (2024a).
Note: KHUR, National Data Exchange System of Mongolia; OSSCs, One-Stop Service Centers; UBCGO, Ulaanbaatar City Governor's Office.

Quantitative Performance and Results

In 2023, the OSSCs collectively processed 1.02 million transactions (an increase of 22% on 2022), with an estimated daily footfall of 4,000–4,500 visitors (Table 8).

TABLE 8

QUANTITATIVE PERFORMANCE INDICATORS OF ULAANBAATAR'S OSSCS, 2019–2023.

Indicator	2019	2022	2023	Change (2019–2023)
Number of centers	3	5	6	+100%
Agencies represented	37	49	53	+43%
Services offered	430	570	632	+47%
Annual transactions ('000)	620	830	1,020	+65%
Average waiting time (minutes)	72	36	28	–61%
Citizen satisfaction (%)	84	89	91	+7 percentage points

Source: Authors' compilation based on UBCGO (2024a, 2024b).
Note: OSSCs, One-Stop Service Centers; UBCGO, Ulaanbaatar City Governor's Office.

The integration of OSSC databases with E-Mongolia in 2022 enabled the automatic retrieval of personal and property data, reducing documentation time by 40%. During the 2020–2021

coronavirus disease 2019 pandemic, OSSCs remained partially open, operating via an appointment-based booking system and ensuring continuity of services.

Impact and Broader Significance

OSSCs have reduced transaction time for citizens by 60%, lowered informal costs, and improved satisfaction by 7 percentage points. They have also freed 250 city employees for higher-value tasks by eliminating duplicate clerical work. The Ulaanbaatar OSSCs demonstrate that public service innovation in a resource-constrained city can combine physical and digital integration to improve service efficiency and social outcomes.

Key Success Factors

- Political and administrative support: The Ulaanbaatar City Governor and CSM championed the initiative as a model for public service reform.
- Interagency agreements: Formal memoranda established cost and responsibility sharing for space and staffing.
- Citizen-centric design: OSSCs are located along major transport corridors (e.g., Dragon and Dunjingarav) to reduce travel time.
- Technology and data linkages: Integration with KHUR and E-Mongolia enabled digital document verification.
- Performance monitoring: Real-time dashboards display transactions and waiting times; weekly data review meetings address bottlenecks.
- Public–private co-location: The presence of banks and insurance desks encourages cross-sector convenience and cost sharing.

Sustainability and Future Outlook

Ulaanbaatar's Public Service Department has institutionalized OSSC operations with a dedicated budget line (MNT2.4 billion for 2024). Two new OSSC branches in Bayankhoshuu and Yarmag were opened in 2025. A "Smart Queue 2.0" project funded by the ADB will introduce AI-based demand forecasting to optimize staff allocation. The model is being replicated in Darkhan and Erdenet through the MDDIC and provincial governors. By 2027, every aimag center is expected to operate a regional one-stop facility linked to the national E-Mongolia system.

Challenges and Lessons Learned

- Space constraints in high-traffic centers limit comfort and privacy.
- Uneven digital literacy occasionally causes delays in self-service kiosks.
- Coordination complexity increases with agency turnover and thus requires continuous interministerial dialogue.
- Budget dependency on municipal appropriations can slow expansion.

Lessons from Ulaanbaatar show that physical service integration remains vital even in a digitizing context. The OSSC model builds trust by retaining human interaction while using digital backend integration for efficiency.

Synthesis of the Three Cases

As Table 9 shows, across E-Mongolia, the 11-11 Center, and the OSSCs, Mongolia has constructed a coherent innovation trajectory in public administration.

TABLE 9

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN MONGOLIA.

Dimension	E-Mongolia	11-11 Center	OSSCs
Innovation type	Digital process integration	Accountability and citizen feedback	Physical co-location and front-end integration
Primary goal	Efficiency and transparency	Responsiveness and trust	Accessibility and convenience
Level of government	National/cross-sector	National/cross-sector	Municipality with national participation
Main success factor	Legal framework and data interoperability	Political leadership and transparency	Citizen-centric design and interagency coordination
Impact	31.7 million digital transactions	93% complaint resolution rate	1 million annual transactions, 91% satisfaction rate

Source: Authors' compilation.
Note: OSSCs, One-Stop Service Centers.

ANALYSIS OF TYPES OF INNOVATION

Mongolia's public sector innovations can be classified into several types, including technological, process, organizational, and even conceptual innovations, reflecting a diversity of approaches to improving governance. This section analyzes the types of innovation represented by the examples discussed above and more broadly across Mongolia's public sector and evaluates their diversity and institutional reach.

Technological Innovation

Technological innovation refers to the introduction and use of new digital tools, software systems, and data infrastructures that transform public sector operations. In Mongolia, the E-Mongolia platform is a flagship example of technological innovation. It integrates over 1,200 government services through a unified web and mobile application, supported by secure APIs and KHUR. These technologies allow real-time verification of records from citizen ID, property, and tax registries, replacing paper-based submissions and eliminating redundant administrative steps. Similarly, the 11-11 Center introduced an integrated CRM database, digital logging, and AI-based keyword categorization. These technological upgrades replaced manual complaint registration. OSSCs have also implemented shared IT backbones that connect local counters to central databases via E-Mongolia and KHUR. Collectively, these systems have enabled secure data interoperability across 87 organizations, expanding digital governance throughout national and local institutions.

The institutional reach of technological innovation in Mongolia is significant. Indeed, 99% of the population now has access to digital services via the internet or kiosks, and most ministries have digitized their frontline functions. These efforts signal not only technological modernization but also the state's commitment to building a resilient, data-driven administrative architecture.

Process Innovation

Process innovation involves the redesign and simplification of workflows to improve efficiency, transparency, and citizen convenience. Mongolia's OSSCs embody this principle. By co-locating the service counters of multiple agencies, OSSCs have replaced sequential, paper-based procedures with integrated, citizen-centric workflows. A single visit now covers multiple processes, including registration, payment, and documentation, reducing waiting times by 60%.

The 11-11 Center is also a process innovation, as it has restructured how feedback is received and resolved by centralizing case intake, tracking, and reporting. Before its establishment, citizens submitted written petitions to individual ministries with no standard follow-up mechanism. The new model has introduced a uniform complaint-handling system with unique case IDs, automated routing, and real-time progress tracking, improving resolution rates to above 93% nationwide.

Likewise, E-Mongolia has revolutionized government procedures by introducing "digital-by-default" service workflows. Tasks that once required five signatures or three physical visits are now completed electronically within minutes. This process simplification has not only reduced administrative costs but also strengthened transparency through traceable digital transactions.

Therefore, process innovations in Mongolia have focused on workflow integration, citizen feedback loops, and interagency cooperation. They demonstrate that efficiency gains in the public sector emerge as much from rethinking procedures as they do from adopting new technology.

Organizational Innovation

Organizational innovation refers to the creation of new entities, structures, or governance mechanisms that enable or institutionalize change. The establishment of the E-Mongolia Academy as a dedicated digital services agency represents a key organizational reform, as it consolidated fragmented IT efforts under a single professional body responsible for developing and maintaining national e-services. Similarly, the creation of the Innovation Policy Department within the MDDIC in 2024 strengthened policy leadership and coordination across ministries.

At the service delivery level, the OSSC model itself is an organizational innovation as it introduced a new institutional form where national and local agencies operate jointly in shared facilities. The OSSC model required new memoranda of understanding, staff structures, and budget-sharing mechanisms. The 11-11 Center also reorganized interministerial coordination by establishing "focal officers" in each agency, ensuring standardized complaint responses and data feedback channels.

These structural innovations indicate a broader shift in Mongolia's public administration toward horizontal coordination, shared accountability, and specialized innovation institutions. From pilot projects to system-wide adoption, the replication of these structural innovations across aimags and districts demonstrates institutional maturity.

Governance and Policy Innovation

Mongolia's innovation trajectory has included governance-level reforms that have embedded transparency, participation, and open data principles in policymaking. Joining the OGP in 2013 encouraged the adoption of participatory and data-driven governance approaches. The integration of 11-11 Center feedback into CSM discussions exemplifies policy innovation in action, as citizen data now directly inform executive decisions.

Furthermore, Mongolia's "Digital Nation" guidelines (2022–2027), approved by Ministerial Order No. A/24, set a national direction for digital transformation (Ministry of Digital Development and Communications, 2022). This framework is complemented by legal and regulatory reforms, including the revised Law of Mongolia on Electronic Signatures (Unified Legal Information System, 2021a) and data-exchange arrangements supporting the legal recognition and secure use of electronic records. Together, these measures provide an enabling environment for digital public-service innovation.

Evaluation of Diversity and Institutional Reach

The typology of innovation in Mongolia's public sector demonstrates increasing diversity and cross-sector integration. Where early reforms (2012–2019) primarily focused on technological modernization, the post-2020 phase has emphasized process simplification, organizational restructuring, and citizen-centric design. The three case studies (E-Mongolia, 11-11 Center, and OSSCs) illustrate how different innovation types interact and reinforce one another: technological platforms enable new processes, organizational reforms institutionalize these processes, and governance frameworks sustain them.

In terms of institutional reach, these innovations now span all 21 aimags and the capital city, with nearly all ministries linked through shared digital systems. The 11-11 Center provides nationwide coverage through phone and digital channels; OSSCs serve more than 1 million clients annually; and E-Mongolia connects almost two million registered users. Although challenges remain, such as uneven adoption in rural soums and varying digital literacy levels, the trajectory is one of deepening inclusion and consolidation.

Conclusion

Mongolia's innovation landscape has evolved from isolated pilots to an integrated ecosystem characterized by multilevel, cross-sectoral reform. The balance between technology, process redesign, and organizational restructuring ensures that innovation produces systemic outcomes rather than isolated gains. By institutionalizing these reforms through dedicated agencies and national programs, Mongolia has laid a durable foundation for continuous public sector innovation.

ANALYSIS OF CONTEXTUAL FACTORS

Public sector innovation in Mongolia has evolved within a unique combination of institutional, political, economic, cultural, and technological conditions. These contextual factors have shaped both the opportunities for and constraints on innovation, influencing the pace, scale, and sustainability of reforms. Understanding these factors provides insight into how innovation becomes embedded (or delayed) within governance systems.

Institutional Factors

Mongolia's institutional framework both enables and constrains innovation. Its three main administrative tiers—central, aimag, and soum—can support relatively rapid nationwide implementation when mandates and resources are aligned. Government Resolution No. 153 of 2013 provided a formal framework for one-stop services (Unified Legal Information System, 2013), while the establishment of a dedicated digital-development ministry strengthened institutional ownership of digital-transformation policy. BTI 2024 also describes Mongolia's broader governance and administrative reform context (Bertelsmann Stiftung, 2024).

However, entrenched bureaucratic silos have posed persistent challenges. Agencies historically maintained separate information systems and faced technical and institutional barriers to integration into shared platforms such as E-Mongolia. Stronger coordination by the Cabinet Secretariat and formal data-exchange rules, including Government Resolution No. 196 of 2022, have supported greater interoperability (The General Authority for State Registration, 2023). Frequent administrative reorganizations can nevertheless interrupt institutional continuity and require repeated coordination across agencies.

Overall, Mongolia's institutional environment can be described as hierarchical but agile, with institutions capable of decisive top-down action when political direction is clear.

Political Factors

Political leadership has been an important enabling condition for Mongolia's digital-governance agenda. The "Digital Nation" guidelines (2022–2027) established national objectives for digital infrastructure, e-government, information security, digital inclusion, innovation, and the digital economy (Ministry of Digital Development and Communications, 2022). BTI 2024 provides additional context on Mongolia's governance and reform environment (Bertelsmann Stiftung, 2024). High-level endorsement can facilitate cross-agency coordination, although the durability of reforms also depends on institutional mandates, professional capacity, and consistent implementation.

Innovation also enjoys cross-party legitimacy, as service improvements have electoral appeal in a democracy where citizens value tangible outcomes. The 11-11 Center was initially expanded under a Democratic Party government (2012), while E-Mongolia was launched under the Mongolian People's Party administration (2020), illustrating bipartisan continuity. That said, political cycles can affect budget priorities and leadership focus. Nevertheless, to date, broad political consensus on transparency, anti-corruption, and digital efficiency has ensured program stability. In short, sustained top-level political commitment has been the single most enabling contextual factor of public sector innovation in Mongolia.

Economic Factors

Mongolia's resource-dependent economy, characterized by volatility linked to mining exports, has both enabled and constrained innovation. Fiscal tightening during downturns (e.g., 2014–2016) limited funding for IT upgrades, whereas periods of recovery expanded fiscal space for innovation. The coronavirus disease 2019 period paradoxically accelerated digitalization, as the government and donors prioritized e-governance to maintain service delivery under lockdown conditions. Launched in 2020, the E-Mongolia platform demonstrates how innovation could reduce long-term costs, saving an estimated MNT24 billion annually in paperwork and administrative overhead.

Economic policy initiatives such as the New Recovery Policy (State Great Khural of Mongolia, 2021) explicitly position digital transformation as a growth enabler. Mongolia's emerging ICT sector and skilled domestic workforce have further supported implementation, ensuring local capacity for system design and maintenance. While economic volatility remains a risk, the strategic framing of digital transformation as a cost-saving and productivity-enhancing investment has strengthened its fiscal justification. The growing digital economy also reinforces a virtuous cycle stimulating demand for e-services, local tech entrepreneurship, and data-driven policymaking.

Cultural and Social Factors

Mongolia's cultural landscape reflects both continuity and adaptation in response to modernization. While public administration retains elements of hierarchical, rule-bound bureaucracy, society at large has shown remarkable openness to technological change. Rapid adoption of social media, fintech, and e-commerce in the 2010s created a digitally literate population, especially among the youth. This social readiness increased expectations for efficient, transparent government services, pressuring institutions to modernize.

At the same time, traces of traditional patron–client culture persist, as citizens historically sought personal interactions with officials to resolve issues. The 11-11 Center modernized this cultural pattern by institutionalizing the "right to be heard" in a transparent and trackable system. Generational shifts in the civil service are also fostering a more innovation-friendly mindset: young, often foreign-educated professionals (e.g., teams within the MDDIC and the E-Mongolia Academy) have introduced agile management practices and public sector entrepreneurship. Although resistance remains among some older officials, continuous training and leadership renewal are gradually transforming administrative culture.

Socially, the growing demand for accountability after corruption scandals has strengthened public legitimacy for digitalization and transparency. Word-of-mouth networks and social media discourse have further accelerated the adoption of innovations such as E-Mongolia. Nonetheless, a digital divide persists, and older adults and rural citizens may feel excluded without physical assistance points. To address this, the government has maintained OSSCs and rural facilitation desks, blending inclusivity with modernization. In cultural terms, driven by citizen expectations and generational renewal, Mongolia's innovation climate is transitioning from compliance- to performance-oriented governance.

Technological Factors

The technological context has been a decisive enabler of Mongolia's innovation progress. Mongolia has broad mobile-network coverage and fiber-optic connectivity to provincial centers; official sector statistics provide the underlying telecommunications indicators (CRC, 2024). UN reporting on Mongolia's 2024 digitalization progress also notes 99% 4G/LTE population coverage (UN Department of Economic and Social Affairs, 2024). Widespread smartphone use and expanding internet access, especially in urban areas, have created a strong user base for E-Mongolia and related digital services.

As digital systems expand, cybersecurity, personal-data protection, and digital capability have become increasingly important to sustainable public-sector innovation. Mongolia adopted the Law on Cyber Security and the Law on Personal Data Protection in 2021 (Unified Legal Information System, 2021b, 2021c), while the revised Law on Electronic Signatures supports legally recognized

electronic transactions (Unified Legal Information System, 2021a). Connectivity and digital-literacy gaps, particularly outside major urban centers, remain implementation challenges that require continued investment in infrastructure and capacity development.

Overall, Mongolia's technological environment offers solid infrastructure and a receptive user base, conditions that make rapid innovation feasible. The key challenge is now one of capacity and sustainability rather than access.

KEY DRIVERS OF IMPROVEMENT

Across APO member economies, the evolution of public sector innovation has been driven by a combination of structural reforms, leadership commitment, and technological advancement. While institutional arrangements differ, several common factors consistently explain why some member economies have achieved greater improvement in innovation capacity, productivity, and service delivery outcomes.

Strong Political and Institutional Leadership

Sustained political commitment has been the most decisive factor enabling innovation in Mongolia. Clear national visions, such as Digital Nation, Smart Government, and Productivity 4.0, have set the policy direction and mobilized coordination across ministries. Senior political leaders act as visible champions, lending legitimacy to reform and encouraging risk-taking within bureaucracies traditionally oriented toward compliance. Many APO members have established central coordination bodies or digital ministries to institutionalize this leadership and maintain momentum across electoral cycles.

Enabling Legal and Regulatory Frameworks

Modernized legal foundations have accelerated innovation by creating an environment of trust and interoperability. Laws on digital ID, e-signatures, cybersecurity, and personal data protection ensure that digital services are secure and legally recognized. Regulatory sandboxes, piloted in several APO member economies, allow experimentation with new technologies such as AI applications, blockchain verification, or fintech solutions without exposing governments to systemic risk. A predictable and adaptive regulatory environment thus enables public organizations to innovate with confidence.

Investment in Shared Digital Infrastructure

Common digital assets such as integrated data exchange systems, digital ID platforms, cloud data centers, and online payment gateways have reduced duplication and enhanced efficiency. These shared infrastructures allow governments to scale innovation faster by providing reusable digital "building blocks." Investments in broadband expansion and 4G/5G connectivity have also closed rural gaps, supporting inclusion in service access.

Human Capital and Organizational Capability

Innovation in the public sector relies on people. Many APO member economies have prioritized civil service training in digital skills, data analytics, and change management. New career paths and rotation programs are helping to create an agile, cross-functional public workforce. Governments that nurture an internal innovation culture through idea challenges, labs, or reward systems tend to see sustained productivity gains beyond one-off projects.

User-Centered and Inclusive Service Design

A shift from government- to citizen-centric design has redefined how services are delivered. Governments are increasingly applying design thinking and behavioral insights to simplify procedures and improve accessibility. Omnichannel delivery combining mobile apps, web portals, and physical OSSCs ensures that innovation benefits all, including vulnerable or digitally limited groups.

Data-Driven Governance and Performance Culture

The use of data analytics and evidence-based decision-making has strengthened accountability and improved service quality. Real-time dashboards, performance scorecards, and open data platforms are now integral to managing results. Data-driven monitoring also supports policy learning, helping governments identify what works and scale successful innovations across sectors.

Together, these drivers form a reinforcing cycle of leadership, trust, capability, and evidence. When political will aligns with institutional capacity, digital infrastructure, and a learning-oriented culture, innovation becomes embedded in governance systems, enabling APO member economies to build more agile, efficient, and citizen-centered public sectors.

RECOMMENDATIONS

Building a productive and innovative public sector requires clear direction, capable institutions, and strong leadership. The following recommendations, categorized into foundations, enablers, and practices, summarize key actions for APO member economies.

Foundations: Setting the Direction

1. Adopt a national innovation and productivity strategy:
   a. Develop a coherent strategy linking innovation with fiscal reform, digital transformation, and good governance. Set measurable outcomes such as digital service coverage, processing time, and user satisfaction.
   b. Indicator: Strategy is approved and publicly reported

2. Establish or strengthen a central Innovation authority:
   a. Empower a national body to coordinate innovation policy, set digital standards, and monitor performance.
   b. Indicator: Legal mandate and cross-government compliance ensured

3. Legislate core enablers:
   a. Update laws on e-signatures, data exchange, privacy, and cybersecurity to provide legal trust and interoperability.
   b. Indicator: Modernized digital governance laws adopted

Enablers: Equipping the System

1. Create a public sector innovation fund:
   a. Finance pilot projects through stage-gated investment, scaling up successful cases and discontinuing non-performers.
   b. Indicator: Share of evaluated projects scaled

2. Build civil service capability:
   a. Introduce structured training in design, data, and agile delivery, supported by interagency mentorship and peer learning.
   b. Indicator: Training completion and participation rates

3. Reform procurement and develop shared infrastructure:
   a. Adopt outcome-based, modular procurement and invest in shared assets such as digital ID, payments, and cloud platforms.
   b. Indicator: Shorter procurement cycles and wider platform integration

Practices: Institutionalizing Innovation

1. Promote user-centered and inclusive design:
   a. Ensure all services are tested with users and accessible through both digital and assisted channels.
   b. Indicator: Share of services meeting user standards

2. Institutionalize evidence, learning, and trust:
   a. Use monitoring, open data, and sandboxes to support transparency and learning. Strengthen cybersecurity and privacy-by-design to sustain public trust.
   b. Indicator: Programs with KPIs and audit compliance

3. Align incentives and foster regional cooperation:
   a. Include innovation goals in senior officials' performance contracts and recognize effective teams. Encourage APO-wide collaboration, peer learning, and cross-border pilots.
   b. Indicator: Leaders with innovation KPIs and joint regional initiatives

In summary, APO member economies that align strong leadership, enabling frameworks, capable people, and data-driven accountability can evolve from an environment of isolated projects into a sustained culture of innovation, productivity, and citizen-focused governance.

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PUBLIC SECTOR INNOVATION AND CULTURE OF PRODUCTIVITY IN NEPAL

EXECUTIVE SUMMARY

This report examines public sector innovation in Nepal and its link to productivity gains and smarter governance. This report focuses on how institutional reforms, digital solutions, and administrative restructuring have collectively driven improvements in resource efficiency, transparency, and citizen-centric service delivery. Although not explicitly defined in law, public sector innovation in Nepal is embedded in constitutional, policy, and institutional frameworks that encourage technology-based governance and performance-driven administration. This analysis draws on policy documents, literature reviews, and key informant interviews to explore how innovation has improved structures, processes, and outcomes in Nepal's public administration. In this regard, three key cases are presented: Administrative Federalism, which devolved decision-making authority and improved responsiveness through subnational empowerment; the National Identity system, which created a unified digital identity platform and saved the state substantial revenue by eliminating duplication in social security payments; and the Company Administration Management Information System, which transformed business registration into a paperless, faceless, and time-efficient digital service. Together, these cases demonstrate measurable gains in service efficiency, accessibility, and accountability.

This report shows that innovation in Nepal has been enabled by five key drivers: institutional restructuring through federalization, strong policy and legal anchoring, whole-of-government coordination, technological modernization, and citizen-centric design. However, challenges persist, including limited digital literacy, inadequate infrastructure, and fragmented institutional coordination. This report concludes that innovation in Nepal's public sector is emerging as a systemic process rather than isolated initiatives. It recommends formulating a National Framework for Public Sector Innovation under the Office of the Prime Minister and Council of Ministers to promote coherence, coordination, and sustainability. This report further proposes strengthening the National Productivity and Economic Development Centre Ltd. as a Center of Excellence, institutionalizing innovation sandboxes, and promoting digital literacy across the bureaucracy and citizenry to sustain progress. Collectively, these steps can transform Nepal's federal governance into an agile, technology-driven, and productivity-oriented system aligned with the Asian Productivity Organization's broader vision of innovation-led public sector transformation.

BACKGROUND

Public sector innovation has become increasingly indispensable for strengthening governance and improving service delivery, particularly in Nepal, where structural impediments and resource gaps often undermine citizen trust. In recent years, digital transformation has emerged as a major driver of innovation, reshaping administrative processes through data, connectivity, and new technologies to enhance efficiency, transparency, and citizen engagement (Bagale, 2025).

Although the Government of Nepal (GoN) does not have an explicit national definition for public sector innovation, the concept is implicitly reflected in laws, policies, and institutional frameworks aimed at building more citizen-centric public services.

According to Khanal and Pokharel (2022), public sector innovation in Nepal is conceptualized as a transformative approach to improving public service delivery by making it more transparent, accountable, and effective, thereby ensuring better access for citizens. Public sector innovation involves public service agents adopting innovative, systems-based thinking to purposefully implement ideas that optimize opportunities and improve efficiency and accountability across sectors. In Nepal, innovation is understood as a continuous process of learning, testing, and refining solutions. This process of innovation requires collaboration, stakeholder engagement, and contextual understanding across Nepal's three-tier federal structure comprising federal, provincial, and local governments.

The Constitution of Nepal (Nepal Law Commission, 2015) established the foundational legal basis for public sector innovation; it enshrines access to quality public services as a fundamental right. Consequently, government institutions are constitutionally obligated to innovate to fulfill these rights. This constitutional essence is operationalized through a number of national policies and development plans:

1. The Sixteenth Periodic Plan (2024/25–2028/29) (National Planning Commission [NPC], 2024) underscores public sector innovation through structural reform, e-governance, and improved service delivery performance. It emphasizes technology-based service delivery, simplified procedures, prompt administrative structures, and a performance-driven bureaucracy, while promoting modern technologies, efficient intergovernmental coordination, and strengthened public finance systems to enhance productivity.

2. The National Science, Technology and Innovation Policy (Ministry of Education and Sports, 2019) seeks to promote technology-driven governance and service delivery, although it largely focuses on scientific and economic innovation.

3. Complementary frameworks such as the Digital Nepal Framework (DNF; Ministry of Communication and Information Technology [MoCIT], 2019), Nepal Trade Integration Strategy (Ministry of Industry and Commerce Supplies, 2023), and Industrial Policy (Nepal Law Commission, 2011) have introduced elements of innovation in their respective domains. Notably, the National Artificial Intelligence Policy (Ministry of Information and Communication, 2025) directly links AI with governance and service delivery reforms. This policy envisions the use of AI-powered tools such as chatbots and analytics to improve citizen access, responsiveness, and accountability, recognizing public service delivery as a core sectoral priority alongside agriculture, healthcare, and education (Mahat et al., 2025).

Public sector innovation in Nepal is inherently crosscutting. Indeed, the *Nepal Sarakar Karyabivajan Niyamawali* (Division of Work of Government of Nepal Rules) (Nepal Law Commission, 2017a) has not explicitly assigned a single ministry to lead innovation. However, the Office of the Prime Minister and Council of Ministers (OPMCM) holds a broad mandate to oversee governmental management, promote good governance, and implement administrative reforms, effectively acting as the orchestrator of innovative reforms. Therefore, public sector innovation initiatives in Nepal involve multiple entities across all line ministries and at various levels of government.

Multiple ministries and agencies contribute to the innovation ecosystem, including the NPC; Ministry of Education, Science and Technology; Nepal Academy of Science and Technology; and the MoCIT, including its subdepartment, the Department of Information Technology (DoIT). Additionally, NGOs such as the National Innovation Centre (NIC) and various universities play supportive roles in innovation initiatives.

Amid such diversity, however, the overall innovation architecture remains fragmented due to the absence of a single coordinating entity or institutional mechanism. Within Nepal's federal framework, provincial and local governments have significant autonomy to design and implement localized innovations, including digital governance platforms, participatory planning mechanisms, and service delivery tools tailored to local contexts. However, coordination across the three tiers of government remains a challenge because many innovative efforts are implemented independently rather than through a unified national approach.

According to the World Intellectual Property Organization (2025), Nepal's overall innovation performance remains modest. As per the Global Innovation Index 2025, Nepal ranks 107th out of 139 economies globally and 9th among 10 economies in Central and Southern Asia. Key enablers of innovation include a growing digital infrastructure, expanding human capital, and youthful population receptive to technological adoption:

1. Telecom liberalization in the late 1990s led to rapid growth in connectivity, with 18 million mobile internet and broadband subscriptions, equivalent to about two-thirds of the population (WB, 2021). Moreover, internet subscriber density has reached 143.8%, reflecting rapid internet adoption (Ministry of Finance, 2024).

2. Nepal has made significant progress in expanding broadband infrastructure, with broadband penetration reaching over 132% of the population by January 2024, reflecting widespread access to internet services (Nepal Telecommunications Authority, 2024). Fiber-optic networks have also been extended to local government centers, including ward offices, health centers, and schools, connecting the majority of administrative units and enabling improved digital service delivery (*Republica*, 2024).

3. Human capital improvements include a literacy rate of 71.2% among those aged 15 and older. Additionally, among Nepal's 27,990 community schools, 58.1% have developed ICT equipment and infrastructure (Ministry of Finance, 2024).

A WB (2025) report found that persistent challenges impede broader innovation, including the high cost of digital technologies, a weak regulatory environment in the ICT sector, and slow adoption of digital identifiers and digital signatures. These factors contribute to significant coverage and usage gaps in Nepal's digital landscape.

Nepal's efforts toward innovation are not new. The agenda of administrative reform and modernization dates back to the Rana regime, with successive initiatives reinforcing the push for better governance (Ghimire & Ashraf, 2016). Legal milestones include the National ICT Policy, 2015 (Ministry of Information and Communication, 2015); National Cyber Security Policy, 2023 (MoCIT, 2023); and the Electronic Transactions Act of 2008 (Nepal Law Commission, 2008), which recognized digital records. These policies and regulations laid the groundwork for ICT-based governance in Nepal.

In summary, although public sector innovation in Nepal is not formally defined, it is embedded in national legal frameworks, policies, and institutional practices aimed at improving service delivery and governance. While constitutional and policy commitments demonstrate strong intent, fragmented institutional setup, limited resources, and bureaucratic inertia have constrained progress. Moving forward, Nepal's public sector would benefit from a clear national definition of innovation, stronger intergovernmental coordination, and a more systematic framework to sustain innovation as a driver of efficient, transparent, and citizen-centered governance.

ANALYSIS OF THE RESULTS OF THE INNOVATIONS AND THEIR LINK TO OUTCOMES

Building on the section above, which outlined the enabling environment for public sector innovation in Nepal, this section presents an analytical overview of major innovations in public administration and their observable links to productivity, performance outcomes, and smarter governance in general. The analysis draws from key informant interviews (KIIs), policy documents, official websites, and literature reviews to identify patterns of innovation across governance, organizational structures, products, services, and processes. This section also examines how these innovations have contributed to improving institutional efficiency, administrative systems, and public service delivery outcomes. KIIs were conducted with senior officials and implementers across the Office of the Company Registrar (OCR), Department of National ID and Civil Registration (DoNIDCR), National Information Technology Center (NITC), and Ministry of Federal Affairs and General Administration (MoFAGA); their findings are treated as qualitative evidence and triangulated with official data and published sources wherever possible.

Public sector innovation in Nepal must be understood within the broader context of its politico-cum- administrative transformation following the promulgation of the Constitution of Nepal (Nepal Law Commission, 2015). The shift from a unitary to a federal democratic structure created both challenges and opportunities for innovation. Federalization required a fundamental reorganization of governmental institutions, mandates, and administrative systems. This transition laid the groundwork for a wave of reforms that spurred innovation across policy, organizational, and service delivery dimensions of governance.

Analysis of official sources reveals three major domains of innovation shaping Nepal's public sector:

1. Policy and governance innovation through administrative federalism;

2. Digital product and service innovation through platforms such as the Nagarik App, Immigration Portal (Nepali Port), Foreign Employment Management Information System (FEMIS), and Hello Sarkaar; and

3. Process innovation through systems such as the Company Administration Management Information System (CAMIS), Government Integrated Office Management Information System (GIOMS), Public Asset Management System (PAMS), and Line Ministry Budget Information System (LMBIS).

Each of these initiatives represents a distinct yet interconnected effort to address long-standing inefficiencies in public administration through mostly digital solutions.

At the structural level, the implementation of administrative federalism constitutes Nepal's most transformative governance innovation. Following the Constitution of Nepal (Nepal Law Commission, 2015), political, fiscal, and administrative powers were redistributed to provincial and local governments, enabling seven provincial governments and 753 local governments to assume new responsibilities in planning, budgeting, and service delivery (WB Group, 2019). This reform aimed to decentralize authority, reduce over-centralization in Kathmandu, and ensure that decision-making processes were brought closer to citizens.

A critical element of administrative federalism involved redefining human resources and administrative management. Under Article 302(2) of the Constitution of Nepal (Nepal Law Commission, 2015), civil servants working in government service at the time of commencement of the Constitution shall be adjusted at the federal units in accordance with the law. The Employee Adjustment Act of 2019 (Nepal Law Commission, 2019) was issued based on this constitutional provision. Pursuant to this act, organizational structure and employee positions required for service delivery at the federal level were approved, and employees were adjusted accordingly. This restructuring promoted efficiency by reducing overlap and duplication while encouraging specialization at the local level. However, challenges related to capacity, coordination, and clarity of functions persist, underscoring the need for continuous refinement of intergovernmental mechanisms (Devkota, 2023).

From an innovation perspective, federalism represents more than structural shift; it redefined how governance is conceptualized and practiced in Nepal. Devolution created space for localized experimentation and innovation. Many municipalities began adopting participatory planning tools, e-governance systems, and performance-based budgeting approaches. Through programs like the Provincial and Local Governance Support Programme (PLGSP), technical support was provided to establish digital record systems, automate revenue collection, and enhance transparency through online portals. These localized initiatives demonstrate that devolved governance can drive innovation when supported by adequate resources, technical assistance, and accountability frameworks.

This structural reform also yielded measurable productivity gains, including faster decision-making processes, more responsive resource allocation, and more efficient local service delivery. Previously, citizens frequently faced delays due to bureaucratic bottlenecks at the central level. The shift toward subnational autonomy reduced redundancies and empowered municipalities to manage education, health, and infrastructure projects independently. As a result, federal restructuring not only transformed governance structures but was also associated with measurable improvements in institutional productivity; however, isolating the specific contribution of restructuring from concurrent factors such as PLGSP capacity support and intergovernmental fiscal transfers remains an empirical challenge.

Alongside these structural governance reforms, Nepal has achieved significant progress in digital transformation, which has become one of the most visible forms of public sector innovation. The

Nagarik App, developed under the DNF (MoCIT, 2019), is Nepal's flagship initiative in digital governance. The app integrates multiple government services into a single platform and serves as a secure repository where citizens can access personal documents such as citizenship certificates, passports, Permanent Account Number (PAN), and licenses in a digital locker-like format.

This digital innovation and productivity have made a substantial impact. Integrating various government services into a unified system has eased access to personal records via a single government app. For citizens, round-the-clock access to services has expanded convenience and reduced the costs associated with traveling to or queuing in government offices.

Complementing the Nagarik App, CAMIS, GIOMS, PAMS, LMBIS, and Nepali Port represent process innovations that have modernized administrative workflows. Concrete evidence of outcomes is particularly visible in the case of CAMIS. Based on an interview conducted with an official from the OCR, CAMIS has significantly reduced approval layers and processing time. Previously, business registration typically required three levels of approval and often took several weeks to complete. According to a key informant from the Office of Company Registrar, after the implementation of CAMIS, around 80% of transactions now require only one level of approval, with a maximum of two levels for complex cases. The average registration time has been reduced to 3 days. In fully sequential system operations, registration can be completed in less than an hour.

Collectively, these three categories of innovation, namely, federal restructuring, digital service integration, and process automation, demonstrate how Nepal's public sector is evolving toward a more data-driven and smarter governance system. The relationship between innovation and outcomes can be examined in three dimensions:

1. Structures: New institutions and clearer functional delineations have been established to improve coordination and resource allocation between federal units.

2. Processes: Administrative workflows have been simplified and standardized through digital platforms.

3. Results: Service quality, accessibility, and responsiveness have improved, leading to greater citizen trust and satisfaction.

These reforms also illustrate the interdependence between policy, technological, and procedural innovation. Federal restructuring has created the institutional foundation for digital transformation, while digital platforms like the Nagarik App and CAMIS have facilitated decentralization by expanding access and traceability. The complementarity between structural and technological reforms demonstrates that innovation yields stronger productivity outcomes when pursued systemically rather than through isolated initiatives.

Nevertheless, implementation challenges remain. Limited digital literacy among public officials and service seekers constrains the adoption of new platforms, particularly in rural municipalities. Uneven internet infrastructure also restricts access to digital services. Additionally, although front-end systems such as the Nagarik App and CAMIS have improved citizen engagement, some back-end tasks still remain paper-based. Addressing these gaps will require continued investment in capacity building, ICT infrastructure, and policy harmonization.

Despite these challenges, Nepal's experience highlights a clear link between innovation and improved public sector performance. The effectiveness of the public sector has been improved through broader coverage and better-quality control, while transparency has been strengthened through online tracking and digital documentation. While comprehensive user satisfaction data remain limited, increased adoption rates suggest growing public confidence in digital services.

Overall, the analysis suggests that Nepal's innovation efforts are driven by three key factors:

1. Institutional reform through federalization, which enables local experimentation;

2. Leadership commitment from central agencies such as the OPMCM and MoCIT, which ensures the national prioritization of innovative projects; and

3. External collaboration, which provides technical and financial support for design and implementation.

Together, these drivers have generated measurable productivity improvements across multiple sectors and levels of government. Moreover, the emphasis on inclusivity and accountability observed in participatory local governance and transparent digital systems underscores that innovation in Nepal is not solely about technology or efficiency, but also about building trust and responsiveness in governance.

The insights drawn from this analysis set the stage for the next section, which focuses on the three best examples of innovation in Nepal's public sector. The following section provides a more detailed account of how each initiative, namely CAMIS, the National Identity (NID) system, and administrative federalism, has been conceptualized and implemented. Each case discusses the innovation's design, the sectors and organizations involved, the contextual factors that influenced its success, and the key drivers that led to measurable improvements in structures, processes, and outcomes. As illustrated by these case examples, Nepal's experience demonstrates how coordinated innovation can transform governance systems and enhance the productivity of public institutions.

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN NEPAL

Building on the preceding analysis of innovation trends and outcomes, this section illustrates how Nepal's public sector has operationalized innovation across different dimensions of governance. The presented cases were identified through a combination of desk review and KIIs conducted with government officials and innovation implementers directly involved in each initiative. The desk review mainly drew from news articles, research papers, and online publications, as public sector innovation and productivity in Nepal remain relatively under-researched. Meanwhile, the KIIs provided qualitative and quantitative insights into implementation challenges, decision-making processes, and tangible results that are not always reflected in formal documentation.

The following subsections detail the three cases selected for this study: CAMIS as a process innovation, the NID system as a product and service innovation, and administrative federalism as a policy and governance innovation. For each case, the discussion comprises three parts: (1) a description of the innovation and its contributions to improved performance; (2) an overview

of its type, sectoral scope, level of government, contextual factors, and key actors involved; and (3) a synthesis of the factors that enabled its success. These cases collectively demonstrate how a culture of productivity and innovation is being cultivated within Nepal's public sector.

Case 1. CAMIS: Faceless and Paperless Company-Related Public Services

Description of the Innovation and Improvements in Structures, Processes, and Outcomes

The OCR, under the Ministry of Industry, Commerce, and Supplies (MoICS), developed CAMIS as part of Nepal's commitment to digital governance and public service modernization. The initiative addressed long-standing inefficiencies in the manual company registration process. Previously, all submissions were paper-based and required several in-person interactions with OCR staff. Applicants submitted 40–50 pages per registration and queues were long, with around 100 applications per day. The process involved multiple approval layers and was prone to delays, document mismanagement, and unethical practices due to heavy reliance on physical interaction. Therefore, there was an urgent need for innovation to create a faceless and paperless model that would streamline the entire company registration process.

CAMIS enables online name reservation, electronic submission of documents of incorporation, digital payment of fees, and real-time tracking of application status. Since its launch, more than 300,000 company registrations and 34,000 name reservations have been processed through the CAMIS platform. The transition from manual to automated processes significantly shortened the processing time. Based on OCR data and validation by private sector users, the registration period dropped from several weeks to just 3 days, with some applications completed within an hour if documents are accurate. According to KIIs, the reduction in turnaround time increased user satisfaction, strengthened trust in public services, and encouraged new entrepreneurs to formalize their businesses. It also substantially reduced OCR's operational costs related to paper, printing, and archive management. In addition to greatly improving crowd management in the OCR, this model has streamlined coordination between the OCR and other government agencies such as the Inland Revenue Department, Department of Industry, and Department of Customs through electronic data sharing. These improvements have enhanced accuracy and reduced human error, which were major issues in the paper-based model.

Structurally, the innovation has simplified the decision-making chain. Before CAMIS, company registration required up to three levels of approval. The new system has reduced this to a maximum of two levels, with around 80% of transactions now requiring only one level of approval. This reorganization has accelerated workflows and empowered mid-level staff (Section Officers) to make operational decisions directly. CAMIS also incorporates digital signatures, allowing approvals and documentation to be processed electronically.

Supporting legislation, including the Electronic Transactions Act, 2008, legally recognized digital documentation and electronic signatures (*Republica*, 2025). This reform created the legal foundation for the OCR's transition to a fully digital model.

The system's launch represented a turning point in the OCR's modernization. It made business registration accessible nationwide, aligning with Nepal's broader DNF (MoCIT, 2019). The digital registry replaced fragmented paper records with a centralized online database, ensuring consistency and transparency. This also made it easier to retrieve and verify old data. According to KIIs, data reliability and retrieval improved significantly, helping ensure that records could be easily accessed

across multiple agencies. Respondents also highlighted that crowd management has become easier due to substantially fewer in-person service seekers.

Type, Sector, Level of Government, Contextual Factors, Organizations Involved, and Key Actors

CAMIS is a digital governance innovation focused on improving public administration in Nepal's industry sector. It was implemented at the federal level by the OCR under the MoICS. The initiative originated from the GoN's annual plans and programs and was conceptualized as part of the OCR modernization agenda. The tender procurement process started in fiscal year (FY) 2021/2022, and full rollout took place in FY 2024/25.

The OCR led the system's conceptualization and execution, with guidance from the MoICS to align with national e-governance standards. Local IT firms developed the system under the supervision of the OCR's ICT Division. KIIs emphasized the collective effort of the OCR team at the time, noting the team's instrumental role in championing the project, coordinating departments, and resolving administrative bottlenecks. Proactive leadership and openness to change motivated staff and strengthened internal ownership of the system.

Partnerships also played a major role. Private law firms, business associations, and private firms were consulted during the testing phase to identify usability issues and ensure the system met user needs. Their feedback was used to improve workflows, document upload formats, and user interface design. Contextual factors further supported implementation. The coronavirus disease 2019 (COVID-19) pandemic underscored the urgency of digital solutions as face-to-face transactions became impractical. According to KIIs, the lockdown period also accelerated internal discussions and prompted the OCR to fast-track CAMIS development. This created momentum for digitalization and reinforced high-level bureaucratic support.

Resistance was initially encountered from certain associations, middlemen, and some internal staff accustomed to manual processes. Informants noted that these challenges were addressed through public–private dialogues and capacity-building initiatives for OCR employees. Training sessions improved technical competence and helped users adapt to the new system. Over time, both staff and service beneficiaries became more comfortable with online processes, resulting in broader acceptance.

Interagency coordination was another essential factor. CAMIS now connects with several systems, including the Inland Revenue Department's tax portal, the Department of Customs' Nepal National Single Window System, the Department of Industry's foreign direct investment information platform, and the NID database. KIIs highlighted that this integration improved cross-system data sharing, reduced duplication, and strengthened coordination in regulatory compliance and investment promotion.

Factors Contributing to the Success of CAMIS

The success of CAMIS stems from a mix of leadership, collective institutional commitment, legal readiness, and user-centered design. Alignment with the DNF (MoCIT, 2019) provided strategic direction and interministerial support. Informants noted that linking CAMIS with national digital priorities made it easier to secure funding and political endorsement.

OCR leadership was a critical factor. The Registrar General and ICT Division led system implementation with perseverance and accountability. They coordinated with IT developers,

monitored technical issues, and ensured that reforms aligned with administrative needs. Informants emphasized that leadership commitment and bureaucratic will were essential to sustaining reform momentum and overcoming resistance.

Legal reforms also enabled success. The passage of the Electronic Transactions Act, 2008 (*Republica*, 2025) gave legal standing to electronic submissions, which increased public confidence. Moreover, the introduction of digital audit trails, which allow users to track applications, has significantly enhanced transparency. According to KIIs, citizens appreciate the ability to monitor application status online and avoid physical queues. These results have strengthened public trust in the OCR's services and demonstrate that digital systems can effectively reduce corruption opportunities and human error.

However, CAMIS still faces a number of operational challenges. As Nepal Lawyer (2025) noted, limited adoption of digital signatures, reliance on intermediaries, and cost barriers constrain full digital participation. Institutional and data security capacities also need to be reinforced. The system holds sensitive corporate data, yet no comprehensive public audit of CAMIS's cybersecurity standards has been published. Nepal's digital divide also remains a persistent challenge, especially for users in rural areas with poor connectivity and low digital literacy. Informants acknowledged that further investments in cybersecurity, infrastructure, and user training are needed to sustain progress.

In conclusion, CAMIS is a major public sector innovation that transformed company registration into a digital, efficient, and transparent system. It has modernized the OCR's institutional structure, streamlined processes, and improved service outcomes. The success of CAMIS can be attributed to strong leadership, policy alignment, capacity building, and user engagement. At the same time, sustaining this reform requires addressing technical limitations, ensuring equitable access, retaining capable personnel, and building robust cybersecurity systems. CAMIS offers a model for how digital public administration reforms can deliver real improvements in efficiency, accountability, and citizen trust in Nepal's governance system.

Case 2. NID: A Foundational Digital Identity for Nepalis

Description of the Innovation and Improvements in Structures, Processes, and Outcomes

Nepal's NID system is a foundational digital ID platform. It was established to create a unified, secure, and efficient digital identity framework for all citizens. Initiated under the National Identity Card and Registration Act of 2016 (Ministry of Law, Justice and Parliamentary Affairs, 2020), the system sought to introduce a centralized biometric database linking citizens to multiple public services through a unique digital identifier.

Structurally, this innovation has reshaped institutional arrangements in Nepal's identity management system. The creation of the DoNIDCR under the Ministry of Home Affairs (MoHA) consolidated responsibilities that had previously been dispersed across agencies handling voter registration, citizenship records, and civil status documentation. This restructuring aimed to consolidate responsibilities and improve coordination in identity management (WB, 2025). The integration of biometric features such as fingerprint and iris data improved data accuracy, minimized identity fraud, and provided a technical foundation for interoperable e-governance systems.

In terms of outcomes, the NID system has delivered measurable improvements in governance and service delivery. By 2024, over 15 million citizens, that is, more than half of Nepal's adult population, had been enrolled (DoNIDCR, 2024). This digital identity framework enhanced inclusion by formally recognizing previously undocumented citizens, especially those in remote and marginalized areas. It also improved fiscal governance by reducing duplicate records in government payrolls and beneficiary databases.

With respect to processes, the NID system modernized the way in which the Nepali government identifies and serves its citizens. The biometric enrollment process, supported by real-time data verification, streamlined registration and service authentication. Integration with digital platforms such as the Nagarik App and the Social Security Fund (SSF) enables citizens to access services through a single verified identity, making service access more convenient and transparent. For instance, the use of NID-linked accounts in social protection payments has significantly reduced leakages and administrative overhead.

The GoN reported significant fiscal savings and improved transparency in social protection delivery following the introduction of the NID Card. In June 2024, the Cabinet (Council of Ministers) decided to make the National Identity (NID) Card mandatory for accessing public services, including pensions and social security allowances. Implementation was scheduled to begin in 28 districts in mid-July 2024, extend to another 38 districts in January 2025, and reach nationwide coverage by mid-July 2025 (Achhami, 2024). According to the DoNIDCR, the requirement has helped reduce duplicate claims, as beneficiaries can no longer register under different names or in multiple districts, saving the state around NPR4.71 billion. This figure is an official government estimate reported by the DoNIDCR and has not been independently audited.. The number of social security beneficiaries, which had previously increased by 150,000–200,000 annually, fell from 3.83 million in FY 2023/24 to 3.50 million by late September 2024 (Achhami, 2024). However, DoNIDCR officials cautioned that this decline could not be attributed solely to the NID requirement, as unreported deaths and beneficiaries moving abroad may also have contributed. Social security allowances are provided to groups including senior citizens, single women, persons with disabilities, and economically disadvantaged individuals. By helping prevent claims under multiple identities or from multiple locations, the NID system is intended to improve the transparency of allowance distribution. Its implementation has nevertheless faced challenges. Following concerns that older citizens could lose access to their allowances, the Supreme Court issued an interim order in August 2024 suspending the mandatory NID requirement for social security allowances. The government subsequently sought to have the order vacated (Achhami, 2024).

Type, Sector, Level of Government, Contextual Factors, Organizations Involved, and Key Actors

According to Article 51 of the Constitution of Nepal (Nepal Law Commission, 2015), the state envisioned "an integrated national identity management information system that manages all kinds of information and data of the citizens in an integrated manner, and linking such system with the services and facilities provided by the state and with national development plans." In accordance with this constitutional policy, the NID system was introduced as a cross-sectoral digital governance initiative integrating the administrative, security, and service delivery sectors. It is a public sector innovation led by the federal government through the MoHA, and its implementing agency, the NITC. The reform marked a structural shift from fragmented, paper-based identity systems to a

technology-enabled framework designed to enhance the efficiency and transparency of public administration.

At the federal level, the DoNIDCR serves as the focal agency overseeing policy implementation and the monitoring of the NID Card system. It was mandated to consolidate multiple identity-related databases into a single digital registry. The Cabinet's approval of the National Identity Management Framework in 2018 established the direction of biometric enrollment and digital ID integration across government systems.

At the provincial and local levels, implementation relies on district administration offices (DAOs) and local government units that facilitate citizen registration and data verification. This multilevel governance model ensures consistency in implementation and enables outreach to remote municipalities. Local officials manage enrollment drives and coordinate with provincial authorities to maintain uniform data standards (DoNIDCR, 2024).

Several contextual factors influenced the success of the NID system. Nepal's transition to federalism in 2015 created a strong institutional demand to modernize citizen registries. The DNF (MoCIT, 2019) provided a policy environment for e-governance expansion (MoCIT, 2019). Moreover, the COVID-19 pandemic accelerated the adoption of the system, as digital ID became crucial for verifying beneficiaries in social assistance and vaccination programs (Independent Evaluation Group, 2023).

Other key actors include the MoHA, which provided policy oversight and interministerial coordination; and the NITC, which oversaw system architecture, cybersecurity, and integration with applications such as the Nagarik App. Implementation also required collaboration with the Election Commission of Nepal and the Department of Passports to harmonize legacy data systems. Collectively, these efforts institutionalized the NID as a core pillar of Nepal's digital state-building, linking governance innovation with improved administrative efficiency, data accuracy, and citizen trust.

Factors Contributing to the Success of the NID System

The success of Nepal's NID system can be attributed to strategic policy vision, institutional leadership, coordinated implementation, and adaptive technology, all of which combined to improve efficiency, inclusiveness, and governance outcomes.

Strong institutional coordination was a key success factor. The DoNIDCR offered centralized leadership, managing biometric data collection and system integration. Collaboration with the NITC under the MoCIT ensured that cybersecurity, data storage, and system interoperability were technically robust. DAOs and local governments supported on-the-ground registration, extending the system's reach nationwide. By 2024, enrollment exceeded 15 million citizens, covering over half of the adult population (DoNIDCR, 2024).

The deployment of a biometric digital ID platform has paved the way for a major leap in accuracy and fraud prevention in Nepal. The integration of NID with the Nagarik App and SSF portal enabled citizens to access multiple services through a single ID, thereby improving transparency and convenience (Independent Evaluation Group, 2023; NITC, 2024).

The NID system also streamlined service delivery by linking welfare programs to verified beneficiaries, reducing duplication and fiscal leakages. It expanded social inclusion by providing formal digital IDs

to citizens lacking documentation and strengthened public trust through transparent verification mechanisms. As a foundational digital infrastructure, it now underpins broader governance innovations, including e-passports, digital payments, and electronic health records.

The success of the NID initiative aligns with Nepal's broader DNF (MoCIT, 2019), which promotes data-driven governance and citizen-centric administration. The NID serves as a core enabler of other digital initiatives, such as e-passports, e-health records, and digital payments, linking administrative reform with socioeconomic modernization. While full-scale deployment and interoperability challenges remain, Nepal's NID system is a transformative model demonstrating how foundational innovations can play an anchoring role in generating and improving productivity gains.

Through coherent policymaking, robust institutional frameworks, and appropriate technology, Nepal's NID system presents a model of governance innovation, showing how digital transformation can lead to enduring improvements in efficiency, accountability, and citizen empowerment.

Case 3. Administrative Federalism: Improving Productivity Gains in Bureaucracy

Description of the Innovation and Improvements in Structures, Processes, and Outcomes

Federalism involves a set of institutional arrangements for dividing power, functions, and authorities between national and subnational governments (Burris, 2015). The Constitution of Nepal restructured the administrative system from a unitary system into a three-tier federal system consisting of 1 federal government, 7 provincial governments, and 753 local governments (Nepal Law Commission, 2015). This reorganization was explicitly intended to devolve decision-making and resources closer to citizens, thereby improving the responsiveness, accountability, and effectiveness of public service delivery (WB Group, 2019). This reform can be considered a governance innovation because it restructured state functions and created new administrative units for service delivery, procedurally devolving fiscal and functional authority to the federal units to strengthen proximity between the state and the public.

In their study, Guragain and Pokharel (2024) found that 81% of respondents supported federalism as an appropriate system to address various needs, including ensuring local autonomy to meet community needs; enhancing governance effectiveness, responsiveness, and accountability; preventing elite group domination; promoting inclusive democracy; and fostering social harmony. Administrative federalism in Nepal captures the essence of the "principle of subsidiarity," which emphasizes that decisions should be made as close to citizens as possible. The PLGSP's Local Government Institutional Capacity Self-Assessment found that local governments experienced improvements in planning, budgeting, and project implementation, including faster procurement processes and clearer development planning. Additionally, the service delivery indicator showed significant improvement from 51.71% to 73.93% (MoFAGA, 2023). The development of an Integrated Local Governance Mobile Application for all 119 local governments has further enhanced citizen engagement and accessibility through digital means (UNDP Nepal, 2023). Additionally, an e-Governance Master Plan (DoIT, 2015) provided policy-level foundations for ICT-based governance at the subnational level.

Early studies have documented increased local planning and some gains in service access, while also noting variability across localities and the need for stronger coordination and financing norms (Chen et al., 2023; WB Group, 2023). Nevertheless, sectoral outcomes show mixed but substantive improvements where responsibilities were clearly devolved and capacity was strengthened. For example, health system reforms under federalization expanded local control over the workforce

and service delivery. In health and education, greater local autonomy enabled services to become more accessible and culturally responsive (Rijal, 2024). Similarly, the federalization of the agriculture sector improved delivery timeliness. Bishwakarma (2022) observed that local governments provided faster access to agricultural inputs such as seeds and fertilizers. Improvements in health outcomes over the same period further reinforce this case. Saito et al. (2023) showed that institutional deliveries among the poorest quintile rose from 33.9% to 65.8% between 2016 and 2022, while under-5 mortality fell from 39 to 33 per 1,000 live births. These gains are consistent with, though not solely attributable to, more locally accountable health service delivery. At the administrative level, Dahal (2024) documented that Pokhara Metropolitan City alone enacted 98 local laws in its first five-year tenure (2017–2022), while ward-level registration services for births, deaths, and marriages can now completed in under 20 min; this is a direct function of constitutionally devolved administrative authority.

Type, Sector, Level of Government, Contextual Factors, Organizations, and Key Actors

The contextual foundation of this reform lies in Nepal's sociopolitical and historical landscape. According to Pelletier (2021), the transition to federalism was driven by aspirations for equitable representation and a departure from a historically centralized system that marginalized diverse ethnic and linguistic groups. Administrative federalism emerged as both a structural and normative reform addressing inefficiencies and patronage under the old system while institutionalizing inclusiveness, pluralism, and participatory governance. The reform aimed to ensure that the delivery of public services reflected the diverse needs of Nepal's population and that decision-making authority was distributed to ensure fairness and equity.

Several institutions and organizations played critical roles in implementing administrative federalism. The National Natural Resources and Fiscal Commission (NNRFC) is constitutionally mandated to recommend revenue-sharing formulas and guide fiscal transfers, while the Intergovernmental Fiscal Council (IGFC) coordinates budgetary and fiscal matters across all levels of government (Niti Foundation, 2024). The Inter-Provincial Council, chaired by the prime minister, serves as a high-level platform to mediate disputes and foster cooperation among provinces. The National Coordination Council facilitates administrative dialogue and coherence in policy execution. The MoFAGA standardizes administrative procedures, while the PLGSP provides capacity-building support through digital tools like the Subnational Treasury Regulatory Application (SuTRA), which digitized budgeting and accounting (MoFAGA, 2023). Approximately 90% of local governments have since adopted structured administrative procedures and digital systems, enhancing efficiency and coordination.

Administrative federalism is characterized by the intricate division of power and functions. It is specified constitutionally and elaborated through legislation such as the Local Government Operation Act of 2017 (Nepal Law Commission, 2017b) and the Intergovernmental Fiscal Arrangement Act of 2017 (Ministry of Finance, 2017). Administrative federalism has completely transformed the domain of governance innovation.

The implementation of administrative federalism has been led by multiple key actors, with elected representatives, bureaucrats, and political figures across all three tiers of government driving the reform process (Shrestha, 2025). Federal parliamentarians, provincial assemblies, and local councils have translated constitutional mandates into practice, while the civil service underwent significant restructuring through the Employee Adjustment Act (2019), redistributing personnel to align with the new system. Political parties and civil society also contributed by advocating for

inclusive governance and transparency. Institutions such as provincial ministries, chief administrative offices, and integrated service centers have become the operational arms of subnational governance, while intergovernmental mechanisms like the National Coordination Council have ensured smooth cooperation among tiers (ADB, 2022).

Factors that Made the Reform Successful

Several interrelated factors explain the success of the shift to administrative federalism in Nepal. First, institutional restructuring created clarity, specialization, and coordination across all government levels. The redistribution of administrative functions reduced procedural delays, strengthened subnational offices, and improved accountability. Decentralization through the Local Government Operation Act of 2017 (Nepal Law Commission, 2017b) ensured that administrative decisions were made closer to citizens, empowering local governments to respond to local priorities more effectively. The Employee Adjustment Act of 2019 and the creation of provincial ministries and integrated service centers enabled the bureaucracy to function more efficiently.

Second, reform was anchored by robust legislative and policy frameworks. Laws such as the Intergovernmental Fiscal Arrangement Act of 2017 (Ministry of Finance, 2017) and the Local Government Operation Act (Nepal Law Commission, 2017b) provided stability and predictability in intergovernmental relations. Mechanisms like the NNRFC, IGFC, and the Inter-Provincial Council institutionalized fiscal coordination, dispute resolution, and consultation, ensuring coherence among the three tiers (Niti Foundation, 2024). These institutionalized arrangements also support continuous learning and adaptation across subnational governments.

Third, capacity building and digitalization have strengthened administrative performance. The PLGSP, implemented with UNDP support, standardized local governance processes through training and digitization. Tools like SuTRA have streamlined budget reporting, while digital platforms like the Nagarik App and provincial e-administration portals have improved citizen access to services (UNDP Nepal, 2023). Between FY2018/19 and FY2022/23, local government budget absorption rates increased from 67% to 76% (Bhattarai, 2024). Meanwhile, satisfaction surveys found that 57.2% of respondents perceived improvements in service delivery (Asia Foundation, 2023).

Fourth, contextual and political drivers sustained momentum. Nepal's transition to federalism was underpinned by social movements advocating for inclusion and equitable governance (Pelletier, 2021). The reform thus carried both political legitimacy and broad citizen support, making it resilient to administrative challenges. Local governments demonstrated adaptability during crises, such as the COVID-19 pandemic, where decentralized structures enabled rapid response, including food distribution, quarantine management, and public information dissemination (Adhikari, 2020; Pokharel et al., 2023).

Finally, outcome-based evidence reinforces the success of administrative federalism. Improvements in revenue collection at the subnational level, with own-source revenue rising from 2.1% to 3.1% of general government revenue between FY2018/19 and FY2021/22 (WB Group, 2023), are consistent with improved fiscal autonomy, although concurrent factors, including PLGSP technical support and improved revenue administration, also contributed to this trend. Service satisfaction and responsiveness metrics further confirm that local governments now play a stronger role in improving quality of life. Empirical research covering the first five-year tenure of local governments (2017–2022) confirms this mixed but directionally positive trajectory: Bhusal and Acharya (2024)

found meaningful, if uneven, progress in local democratic capacity, noting particular gains in participatory planning and social inclusion mechanisms. At the same time, the literature consistently emphasizes that the productivity benefits of fiscal devolution are most pronounced when accompanied by targeted capacity-building (Kharel & Rodríguez-Pose, 2025), a finding that lends further support to the PLGSP investment model described above. Essentially, by restructuring the state, embedding accountability through law and technology, and building local capacity, administrative federalism has become a cornerstone of Nepal's governance innovation and a model of institutional transformation in South Asia.

Administrative federalism in Nepal is shaped by the combined efforts of elected representatives, bureaucrats, and political actors across all three tiers of government. As Shrestha (2025) noted, federal parliamentarians, provincial assemblies, and local officials play pivotal roles in translating constitutional mandates into administrative practice. The civil service has undergone significant restructuring to align with the new federal setup, a process involving staff redistribution and adjustments in authority. Nonetheless, challenges persist, including uneven personnel deployment and limited administrative capacity in some provinces. Political parties and civil society continue to influence this transition through advocacy and negotiation around governance reforms, making them key drivers of Nepal's evolving federal administration (Shrestha, 2025).

Administrative federalism in Nepal has redefined how public administration operates, transforming a once highly centralized bureaucracy into a more decentralized and responsive system. The conceptual foundation of this reform rests on the belief that empowering subnational administrative bodies enhances efficiency, accountability, and inclusiveness. The Local Government Operation Act of 2017 (Nepal Law Commission, 2017b) implemented the constitutional vision by granting local governments authority over planning, staffing, and service delivery, thereby ensuring that administrative decisions are made closer to citizens.

Comparative Synthesis of the Three Public Sector Innovation Cases in Nepal

Table 1 presents a comparative synthesis of the three public sector innovation cases discussed in this section.

TABLE 1

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN NEPAL.

Dimension	CAMIS	NID System	Administrative Federalism
Innovation type	Digital process and service automation	Foundational digital identity system	Policy and governance innovation
Primary goal	Faster, transparent, and paperless company registration	Secure and unified citizen identification for service delivery	Decentralized, responsive, and accountable governance
Level of government	Federal	Federal with provincial and local implementation	Federal, provincial, and local
Main success factor	Strong OCR leadership, legal backing of digital transactions, and user-centered design	Constitutional mandate, centralized coordination, and biometric technology	Constitutional reform, enabling legislation, and capacity-building programs

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Dimension	CAMIS	NID System	Administrative Federalism
Impact	Over 300,000 company registrations and 34,000 name reservations	15 million enrolled citizens; eliminated fraudulent claims and saved the government NPR4 billion annually	753 local governments operational

Source: Compiled by the author based on information provided by key informants and the Ministry of information and Communication (2025).
Note: CAMIS, Company Administration Management Information System; NID System, National Identity System; NPR, Nepalese Rupee; OCR, Office of the Company Registrar.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATION IN NEPAL

The typology of innovations, which ranges from process and product to governance, policy, organizational, and conceptual innovations, offers an analytical lens through which Nepal's evolving public sector can be understood. Each innovation contributes distinctively to public sector productivity and service transformation. In Nepal, innovations have not emerged in isolation but within an interconnected ecosystem shaped by administrative federalism, digital transformation, and institutional restructuring. Therefore, the link between innovation type and productivity is best understood as a systemic interaction, where governance and policy innovations create the enabling environment, while process and product innovations operationalize efficiency and accountability within this framework.

Process innovations have been the most visible drivers of productivity in Nepal's public sector. Systems such as CAMIS, GIOMS, and LMBIS exemplify how digitization and automation have modernized bureaucratic routines. These platforms have transformed traditionally paper-based workflows into integrated, real-time, and traceable processes, reducing administrative redundancies and discretionary decision-making. For instance, CAMIS has shortened company registration time from several weeks to as little as 3 days, thereby improving business formalization, reducing costs, and enhancing transparency. Similarly, GIOMS and PAMS have standardized administrative and asset management functions across ministries, enabling faster document handling, better data accuracy, and digital audit trails.

Such process innovations directly contribute to productivity by streamlining transactions, improving data reliability, and enhancing coordination among agencies. They reduce the human and financial resources required for routine administrative tasks, allowing personnel to focus on analytical and service-oriented functions. Furthermore, the adoption of these systems is fostering a culture of results-based management, where performance can be objectively monitored and evaluated through data analytics. These improvements collectively align with the government's Sixteenth Periodic Plan (2024/25–2028/29) objective of building a performance-driven and technology-enabled bureaucracy (NPC, 2024).

Closely associated with process reforms are product and service innovations, most prominently reflected in the Nagarik App and the NID system. These innovations have redefined the interface between citizens and the state, making public services accessible, transparent, and inclusive. The Nagarik App integrates over a dozen essential government services, including citizenship

verification, PAN registration, social security details, and license renewal, into a single digital platform. It represents a service innovation that not only increases convenience but also standardizes citizen experience across administrative boundaries.

The NID system is both a product and an institutional innovation, establishing a unified digital ID infrastructure linked with multiple government databases. With over 15 million citizens enrolled by 2024, the NID framework has enabled efficiency in welfare disbursement, payroll verification, and public record management. By eliminating duplicate records and improving targeting accuracy, it has advanced fiscal discipline and inclusion, which are key dimensions of productivity in public administration. Product and service innovations thus generate measurable governance outcomes, including reduced transaction costs, improved accessibility, and heightened citizen satisfaction through evidence-based service delivery.

At the structural level, administrative federalism constitutes Nepal's most transformative governance innovation. The Constitution of Nepal (Nepal Law Commission, 2015) and subsequent legislation, including the Local Government Operation Act of 2017 (Nepal Law Commission, 2017b), reorganized the state into three tiers of government, devolving authority, fiscal power, and decision-making to provincial and local levels. This restructuring improved government responsiveness, enhanced service proximity, and fostered experimentation in local governance.

Governance innovations of this nature strengthen institutional productivity by reducing bureaucratic congestion and clarifying functional responsibilities. Administrative federalism has also enhanced coordination and flexibility, allowing local governments to tailor service delivery to context-specific needs. For instance, local governments have reported more timely provision of agricultural inputs and localized health services. These reforms reveal how governance innovations yield systemic productivity improvements by aligning authority with accountability and enabling cross-level coordination through bodies such as the National Coordination Council and the IGFC.

Supporting these broader reforms are organizational and conceptual innovations that have redefined institutional culture and administrative behavior. The establishment of entities like the DoNIDCR served to consolidate fragmented registries into a unified agency, while the integration of the OCR's ICT Division empowered internal teams to manage digital reforms in a sustainable manner. Similarly, the institutionalization of interagency cooperation under the OPMCM has promoted a "whole-of-government" approach that transcends ministerial silos.

Conceptually, Nepal's adoption of systems thinking and citizen-centric design frameworks represents a cognitive shift within bureaucracy. These approaches encourage iterative problem-solving, stakeholder collaboration, and adaptive policymaking, all of which are crucial traits for sustaining innovation in complex governance environments. The convergence of conceptual and organizational innovations thus strengthens the absorptive capacity of institutions to adapt and scale new ideas.

Across Nepal's public sector, process, governance, and service innovations have emerged as the most frequent and impactful drivers of productivity. Process innovations directly reduce inefficiencies and enhance measurable outputs, while governance innovations create an enabling environment for decentralized decision-making and accountability. Service innovations bridge the interface between citizens and administration, improving inclusion and satisfaction. Although less

visible, organizational and conceptual changes form the cognitive and structural foundation sustaining these transformations.

The evidence suggests that Nepal's productivity improvements stem not from isolated innovations but from the synergy among multiple innovation types. Policy and governance innovations provide structural legitimacy, process innovations operationalize efficiency, and product innovations enhance accessibility. To consolidate these gains, Nepal should prioritize hybrid innovation models linking policy reform with digital process redesign to sustain systemic improvements. Institutionalizing innovation through clear mandates, coordinated leadership, and data-driven evaluation will ensure that productivity growth becomes an enduring feature of Nepal's evolving governance landscape.

ANALYSIS OF CONTEXTUAL FACTORS

The emergence and performance of public sector innovation in Nepal have been shaped by a unique mix of contextual factors that define both the opportunities and constraints for productivity enhancement across government systems. Understanding these determinants is essential for interpreting why certain innovations, such as administrative federalism, the NID system, and digital service platforms like CAMIS, have succeeded while others have faced adoption hurdles. In Nepal's case, these contextual elements have acted not merely as background conditions but as dynamic enablers and mediators of institutional transformation.

Nepal's fiscal and developmental landscape plays a pivotal role in defining the scope and sustainability of public sector innovation. As a lower-middle-income economy with constrained fiscal space, its public investment capacity directly influences the pace and depth of reform. Nevertheless, the government's commitment to channeling Nepal's limited resources toward digital transformation and administrative modernization through frameworks such as the DNF (MoCIT, 2019) and the Sixteenth Periodic Plan (2024/25–2028/29) (NPC, 2024) demonstrates its strategic prioritization of innovation as a productivity multiplier.

Economic constraints have also encouraged efficiency-driven reforms. The transition to digital systems such as CAMIS, LMBIS, and PAMS reflects efforts to reduce operational costs, improve revenue mobilization, and streamline administrative expenditures. The expansion of fiscal decentralization under federalism has further enabled local governments to generate own-source revenues, reflecting enhanced financial autonomy and a stronger incentive for innovation at the subnational level.

However, economic limitations constrain infrastructure development and human capital investment, leading to uneven innovation diffusion. The digital divide between urban and rural municipalities remains pronounced, and resource-poor local governments often lack the financial flexibility to sustain technological systems without central assistance. Therefore, while economic necessity has spurred innovation in some areas, fiscal disparities continue to limit universal productivity gains.

The political transformation following the promulgation of the Constitution of Nepal (Nepal Law Commission, 2015) fundamentally reshaped the country's governance architecture. The establishment of a three-tier federal system created a decentralized institutional framework that redefined accountability, planning, and decision-making structures. This reconfiguration became a

foundational enabler of innovation, particularly through the shift to administrative federalism. The devolution of power to 753 local governments fostered localized experimentation in digital governance, participatory planning, and service automation. Programmatic interventions such as the PLGSP provided both technical and fiscal support for such initiatives, helping align innovation with local needs and political ownership.

Administrative leadership has also been a decisive determinant of innovation success. Initiatives such as CAMIS and the NID system advanced rapidly because of high-level commitment from central authorities, particularly the OPMCM and MoICS, as well as the leadership within implementing agencies like the DoNIDCR and OCR. The alignment between bureaucratic and political leadership produced reform momentum that transcended administrative inertia. Conversely, innovation efforts remain fragmented in areas lacking such commitment or coordination, particularly in terms of interministerial integration.

Institutionally, Nepal's bureaucratic tradition has gradually adapted to new paradigms of performance-based governance and citizen-centric service design. However, institutional inertia and inconsistent accountability mechanisms continue to pose challenges. Despite legal provisions under the Civil Service Adjustment Act of 2019 and the Intergovernmental Fiscal Arrangement Act of 2017 (Ministry of Finance, 2017), overlapping mandates and capacity gaps in some provinces have impeded uniform implementation. The broader political context, characterized by frequent administrative reshuffling, has also disrupted continuity in innovative leadership. Nonetheless, the gradual institutionalization of federal mechanisms and policy coherence indicates growing political maturity toward sustaining innovation-driven productivity in Nepal.

Nepal's complex topography and spatial disparities significantly shape innovation outcomes. The country's mountainous terrain and dispersed settlements present logistical challenges for both physical and digital service delivery. Telecommunication liberalization and broadband expansion have improved connectivity, resulting in an internet user density of 144.23% of the population (Ministry of Finance, 2025). However, remote municipalities in Karnali and Sudurpashchim provinces still face connectivity gaps that limit the adoption of systems like CAMIS or the use of online service portals. Paradoxically, however, these geographic constraints have catalyzed innovation in localized governance. The federal model allows local governments to tailor digital solutions to their contexts, as seen in the development of local e-governance platforms and integrated mobile applications for municipal services. The use of digital tools for participatory planning in geographically remote areas illustrates how spatial challenges can spur adaptive innovation. Additionally, fiber-optic network expansion to local administrative centers, schools, and health posts has begun to reduce geographic inequalities in access, suggesting that infrastructure investment remains a key contextual driver of productivity.

Comprising demographic structure, education, and digital literacy, the social dimension significantly influences innovation uptake and productivity outcomes. Nepal's youthful population and expanding literacy base, with a 71.2% literacy rate among those aged 15 and above (WB, 2024), provide a favorable demographic foundation for technology-driven governance. Moreover, the growing receptivity to digital tools, particularly among young entrepreneurs and students, has facilitated the acceptance of online platforms such as CAMIS and the Nagarik App. Furthermore, social inclusion remains central to the innovation agenda. The NID system's ability to register previously undocumented citizens demonstrates how technological innovations can correct social inequities and expand formal participation in governance.

Nevertheless, limited digital literacy among public servants and citizens continues to hinder the full utilization of e-governance systems. Although training and capacity-building programs under the PLGSP and DNF (MoCIT, 2019) have begun addressing this challenge, the pace of progress remains uneven. Cultural attitudes toward bureaucratic procedures remain shaped by face-to-face service expectations, underscoring the need for behavioral adaptation if digital models are to succeed.

Analysis of Nepal's contextual environment reveals that innovation and productivity are not products of technology alone but outcomes of dynamic interactions among political will, fiscal capacity, institutional design, and social readiness. Political decentralization and leadership commitment emerge as the strongest enabling factors, while economic and geographic constraints define the limits of scalability. The interplay of these factors suggests that innovation success in Nepal is contingent on adaptive governance, whereby institutions align policies, resources, and technology with the diversity of local realities.

To sustain progress, Nepal must continue to leverage the strengths of federalism, improve digital infrastructure in remote regions, and prioritize human capital development to bridge the literacy gap. By aligning contextual strengths with institutional reform, Nepal can transform contextual challenges into drivers of enduring productivity and innovation.

KEY DRIVERS OF IMPROVEMENTS

1. Institutional restructuring and decentralization of authority
   a. Basis: Administrative federalism as enshrined by the Constitution of Nepal (Nepal Law Commission, 2015)
   b. The shift from a unitary to three-tier federal system devolved power, resources, and decision-making to local governments. This institutional restructuring brought governance closer to citizens, improved responsiveness, and strengthened accountability.

2. Policy and legislative anchoring of reforms
   a. Basis: Cited legal basis of CAMIS and the NID system
   b. Clear legal frameworks such as the Electronic Transactions Act, 2008 and National Identity Card and Registration Act of 2016 provided legitimacy and stability to reforms. These laws ensured the alignment of innovative initiatives with national policy goals and protected continuity across administrative transitions.

3. Whole-of-government coordination and integration
   a. Basis: Interagency cooperation in all three cases
   b. Interministerial collaboration between agencies (e.g., the MoHA, MoCIT, and OCR) ensured coherence and interoperability across systems. Such coordination minimized redundancy, harmonized databases, and supported unified service delivery.

4. Technological modernization and digital transformation
   a. Basis: KIIs and desk research
   b. The adoption of digital platforms, biometric systems, and data integration tools has improved public sector efficiency, transparency, and accessibility in Nepal. Digital transformation has shifted manual, paper-based processes into real-time, automated systems that have reduced administrative burden and errors.

5. Integration of service delivery platforms
   a. Basis: CAMIS integration with the Inland Revenue Department, Customs, and Foreign Direct Investment platforms; National ID System integration with Nagarik App, SSF, and Passport/Civil Registration databases
   b. Linking multiple services (e.g., Nagarik App, SSF, and company registration) through a unified digital identity or database has improved citizen convenience, reduced duplication, and created a seamless service experience.

6. Citizen-centric design and accessibility improvements
   a. Basis: Public–private consultations in developing CAMIS, local government involvement in administrative federalism, and NID enrollment drives
   b. Innovations focused on improving accessibility, reducing transaction costs, and increasing inclusion, especially for marginalized groups, were more successful in building public trust and encouraging uptake.

RECOMMENDATIONS

Establishing a strong culture of productivity and innovation in Nepal's public sector requires a coherent national framework that defines, enables, and sustains innovative practices across all levels of government. To this end, the GoN should formulate a national framework for public sector innovation that clearly defines innovation within the governance context, sets measurable indicators of success, and delineates institutional responsibilities. Anchoring this initiative under the OPMCM would promote interministerial coordination and ensure that innovation strategies align with broader national goals, such as the Sixteenth Periodic Plan (NPC, 2024) and the DNF (MoCIT, 2019). As Burris (2015) emphasized, well-structured administrative arrangements are essential in federal systems to maintain policy coherence and prevent the duplication of efforts. Formalizing collaboration mechanisms between federal, provincial, and local tiers would operationalize this principle and institutionalize innovation as a shared national agenda rather than an isolated practice within specific agencies. The CAMIS experience offers a direct institutional model for this framework: a clearly mandated agency (OCR), a defined scope, and measurable output targets drove coherent reform across ministerial, technical, and user dimensions.

Expanding the mandate and capacity of the National Productivity and Economic Development Centre Ltd. (NPEDC) is equally vital. As a technical institution with a long-standing role in promoting productivity, NPEDC is well-positioned to evolve into a national focal point for innovation and productivity enhancement. Its mandate can be broadened to function as a Center of Excellence for Public Sector Productivity, responsible for developing productivity metrics, managing innovation funds, and facilitating knowledge exchange across sectors. As Acharya and Zafarullah (2020) noted, strengthening institutional capacity is a critical step in ensuring that productivity reforms are not only introduced but sustained through continuous learning and benchmarking. With the support of the Asian Productivity Organization (APO), NPEDC can expand its technical cooperation programs and integrate international best practices into national reform initiatives, thereby bridging the gap between policy formulation and implementation. The NID system demonstrates how a centrally led agency with a clear productivity mandate can generate measurable fiscal outcomes: NPR4 billion in annual savings through the elimination of duplicate social security claims. NPEDC should develop a similar evidence-based productivity reporting function, tracking and publicizing gains from public sector innovations to build institutional accountability.

To accelerate experimentation and learning, Nepal should institutionalize a regulatory sandbox for public sector innovation. This mechanism could provide a controlled policy environment for testing new governance tools such as digital signatures, AI-based service analytics, or process automation before they are scaled nationally. Acharya (2018) argued that the transition toward federalism in Nepal requires adaptive governance models that encourage experimentation within safe boundaries. Regulatory sandboxes, already practiced in other APO member economies, could help Nepal generate evidence-based insights and minimize the risks associated with innovation. This mechanism could also build the confidence of policymakers in scaling successful initiatives, particularly at the provincial and local levels, where policy flexibility is often greater. CAMIS illustrates this directly: the limited adoption of digital signatures, identified as a constraint in the KIIs, persists partly because there was no controlled testing environment to build user and institutional confidence before mandatory rollout. A sandbox would have accelerated that readiness.

Strengthening digital and innovation literacy across the public sector is also crucial for fostering innovation. Leadership commitment and human capital are core drivers of productivity in government institutions. Therefore, in collaboration with the APO, the GoN should design a National Digital and Innovation Literacy Program targeting public servants at all levels. Providing training modules focusing on data management, AI literacy, and service design would equip public officials with the skills necessary to sustain ongoing digital reforms, including initiatives like CAMIS and the NID system. Beyond technical capacity, such a program can help build employee morale and cultivate a mindset open to technological change, creating an enabling environment for innovation to flourish organically. Both the CAMIS and NID KIIs identified limited digital literacy among public officials and citizens as a binding constraint on adoption, particularly in rural municipalities. Addressing this systematically, rather than through ad hoc training, is a precondition for the sustainability of both reforms.

Finally, Nepal's administrative federalism provides fertile ground for localized experimentation. The government, through APO's facilitation, should empower subnational governments to act as innovation laboratories by implementing challenge grants that reward measurable productivity improvements in service delivery, fiscal management, or citizen engagement. This approach will likely encourage competitive learning among provinces and municipalities while reinforcing the principle of local autonomy that federalism seeks to promote. Both Burris (2015) and Acharya (2018) emphasized that decentralized systems thrive when local entities have the flexibility to innovate within clear policy boundaries.

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BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF PAKISTAN

EXECUTIVE SUMMARY

Public sector innovation is the cornerstone of socioeconomic transformation and a key determinant of national competitiveness in the global knowledge economy. Globally, innovation in the public domain has become synonymous with efficiency, transparency, and responsiveness to citizens' evolving needs. However, despite this growing awareness, significant disparities persist among countries regarding innovation capacity and outcomes.

Pakistan's investment in research and development (R&D) remains low. Accounting for only 0.16% of its GDP, Pakistan's R&D investment is significantly lower than that of its regional counterparts, including India (approximately 0.7%), Malaysia (1.0%), and Thailand (1.2%). Pakistan's R&D investment is well below that of leading innovation economies such as South Korea, which invests nearly 5% of its GDP; the OECD average is 2.5–3% (Asian Productivity Organization [APO], 2023a; WB, 2023). This wide gap underscores the urgent need for Pakistan to strengthen its institutional framework, funding mechanisms, and innovation ecosystems.

Under the APO framework, public sector innovation encompasses a range of strategic initiatives, including digital transformation, human capital development, and productivity enhancement. These innovations are particularly evident in Japan, South Korea, Singapore, and Malaysia. These APO member economies have systematically embedded innovation into their governance systems through structured programs, such as the APO's "Digital Innovation Process Guide" and the "Public Policy Innovation for Human Capital Development." These initiatives emphasize the integration of technology, research, and governance reforms to drive continuous improvements in public service delivery and productivity. These models demonstrate that innovation flourishes when governments consistently invest in knowledge creation, digital infrastructure, and skill development.

In Pakistan, public sector innovation refers to the introduction of new ideas, policies, technologies, and institutional reforms by the government to improve governance, efficiency, and citizen satisfaction. It extends across domains, such as digital transformation, social protection, financial inclusion, environmental sustainability, and administrative reforms. Landmark initiatives such as the National Database and Registration Authority digital identity services, Pakistan Citizen Portal, Roshan Digital Account, Raast instant payment system, Ehsaas social protection program, and the Billion Tree Tsunami initiative exemplify the country's commitment to modernization and inclusive development. These projects enhanced transparency, expanded access to public services, and fostered financial inclusion by facilitating real-time, secure, and cost-effective transactions.

This report synthesizes comparative insights from regional and global experiences to highlight the critical gaps in Pakistan's public sector innovation architecture. It examines governance reforms, technology infrastructure, enterprise resource planning adoption, and civil service modernization

as essential components for enhancing productivity and citizen trust. The findings reveal that, while Pakistan has made measurable progress in digitalization and AI policy formulation, sustained progress remains impeded by structural weaknesses such as underinvestment, regulatory inertia, and weak coordination mechanisms.

To move toward an innovation-driven, knowledge-based economy, Pakistan must institutionalize R&D funding mechanisms, strengthen public–private partnerships, modernize its bureaucracy, and promote a culture of evidence-based policymaking. Encouraging data-driven decision-making, building digital capacity within public institutions, and ensuring transparency in innovation funding can accelerate progress. While public sector innovation in Pakistan is reshaping governance, service delivery, and social protection, its full potential can only be realized through strategic reforms that foster sustainability, inclusivity, and long-term economic resilience.

BACKGROUND

Government Definition of Public Sector Innovation

In Pakistan, public sector innovation is defined as new approaches, policies, technologies, and institutional reforms introduced by the government to improve service delivery, governance, efficiency, and citizen satisfaction. This broad definition encompasses a spectrum of activities, including digital transformation, social protection enhancements, financial inclusion mechanisms, governance reforms, and sustainability initiatives. While Pakistan's public sector has embarked on several high-profile innovation initiatives, their impact has been moderated by structural challenges such as low R&D funding, bureaucratic inertia, and coordination issues. The factors driving the success of these innovations include strong political will, institutional support, investment in human capital and digital infrastructure, and multi-stakeholder collaboration. Despite these advancements, Pakistan faces significant barriers, including limited R&D funding, infrastructural constraints, fragmented policies, and weak private sector engagement in innovation.

Innovation Policy and Management in Pakistan

Institutional Infrastructure for Innovation

Pakistan has launched several key institutions to support innovation:

- Special Technology Zones Authority (STZA): The STZA is a government entity responsible for establishing technology parks and innovation hubs in Islamabad, Lahore, and Haripur, thereby fostering startups and tech firms.

- National Aerospace Science and Technology Park (NASTP): The NASTP focuses on aerospace industry clusters in Islamabad, Karachi, Lahore, and Kamra to facilitate R&D and technology commercialization.

- An agritech initiative called Digital Dera provides digital advisory services to farmers in South Punjab to improve productivity and supply chains. (Internet Society, n.d.).

- Pakistan Digital Authority (PDA): Established in 2025, the PDA drives digital governance reforms and coordinates government digital initiatives under the Digital Pakistan Vision.

Provincial Level Innovations

Provincial governments have initiated innovation strategies aligned with federal objectives, but customized to local contexts:

- Through the Punjab Innovation Fund and Punjab Information Technology Board, Punjab supports startups, digital labs, and public service innovations.
- Sindh focuses on e-governance improvements and public service digitization through the Sindh IT Board.
- The Khyber Pakhtunkhwa Innovation Fund supports entrepreneurship and digital transformation projects.
- Balochistan is making efforts to promote IT and innovation through its provincial IT departments.

Stronger coordination among provincial and federal levels could amplify the impact of the abovementioned strategies.

Specific Policies

Most innovation policies have been introduced at the public sector level. Innovation is also featured as an element of other policies such as the Pakistan National Artificial Intelligence Policy 2025 (Regulations.ai, 2025), Digital Pakistan Policy (Ministry of Information Technology and Telecommunication [MoITT], 2018), and the National Economic Transformation Plan, 2024–2029. Under the Ministry of Planning, Development, and Special Initiatives, the National Economic Transformation Plan, also known as URAAN Pakistan, highlights the need to bring creative industries such as music, art, design, and gaming under a strategic roadmap to develop the creative economy (Ministry of Planning, Development, and Special Initiatives, 2024).

Subnational and Extra-Governmental Public Sector Innovation Units

The Pakistan government has established public sector innovation units. For example, the Ministry of Planning, Development, and Special Initiatives launched the Governance Innovation Lab to enhance transparency and service delivery. The government also established the Pakistani Public Administration Research Centre to conduct research on improving public administration. Other important initiatives include the National Task Force on AI; the National Task Force on Productivity, Quality, and Innovation; smart city projects; and Higher Education Commission R&D programs.

Outside the government, initiatives include the National Incubation Center for Aerospace Technologies and AI Technology Parks, which focus on innovation and entrepreneurship. The outputs of these initiatives may also benefit the public sector.

National Traditions, History, and Resources Influencing Innovation in Pakistan

Tables 1–3 present the innovation pillar rankings across seven innovation dimensions as measured by the Global Innovation Index, key indicators, and resource allocation gaps in Pakistan, respectively.

TABLE 1

INNOVATION PILLAR RANKINGS.

Pillar	Pakistan's Rank
Institutions	127
Human capital and research	123
Infrastructure	123
Market sophistication	101
Business sophistication	94
Knowledge and technology outputs	69
Creative outputs	80

Source: World Intellectual Property Organization (2025).

TABLE 2

KEY INDICATORS.

Metric	Pakistan
HDI (2023–24)	0.544
Global Innovation Index	99/139
R&D spending (% GDP)	0.16%
Public digital literacy (%)	50
Innovation readiness score	Medium

Source: UNDP (2024), WB (2024), and World Intellectual Property Organization (2024, 2025).
Note: R&D, research and development.

TABLE 3

RESOURCE ALLOCATION GAPS.

Innovation Pillar	Current → Required % of GDP
Institutions	0.03 → 0.2
Human capital (R&D)	0.16 → 1.0
Infrastructure	0.3 → 1.0
Market sophistication	0.05 → 0.2
Business sophistication	0.05 → 0.1
Knowledge and technology outputs	0.05 → 0.2
Creative outputs	< 0.01 → 0.05

Source: Dutta et al. *(2024),* Ministry of Finance (2024), *and* Planning Commission (2025), UNESCO Institute for Statistics (2025), and WB (2025).
Note: R&D, research and development.

Key Actors in the National Innovation System

Pakistan's national innovation system involves a range of actors:

- Government agencies: Prime Minister's Office (PMO), National Database and Registration Authority (NADRA), MoITT, State Bank of Pakistan (SBP), and line ministries
- Academic and research institutions: Universities and Higher Education Commission Offices of Research, Innovation, and Commercialization

- International organizations: The APO, WB, and UNDP
- Private sector: Technology firms and startups are involved but to a limited extent

ANALYSIS OF THE RESULTS OF INNOVATIONS AND THEIR LINK TO OUTCOMES

Public sector innovation and digital transformation have emerged as pivotal factors for effective governance and socioeconomic development, particularly in South Asia. Countries such as India, Bangladesh, Sri Lanka, and Pakistan are actively adopting digital tools, AI policies, and sectoral innovation strategies to address governance inefficiencies and improve public service delivery (Arfeen & Khan, 2009). This report focuses on Pakistan's innovation landscape across the following core domains: governance innovation and digital transformation; sectoral innovation and infrastructure development; IT system modernization, including enterprise resource planning (ERP) adoption; public spending efficiency and social outcomes; and civil service reform and stakeholder engagement.

Innovation is an engine for sustainable growth that enables countries to address digital transformation challenges, climate change, and social equity concerns. For Pakistan, transitioning from a low-innovation to a knowledge-based economy requires urgent reforms and significant investments in institutions, human capital, and technology infrastructure (APO, 2023b).

Public sector innovations in Pakistan have resulted in improvements in their structures, processes, and outcomes. Although their impact is moderated by systemic challenges, an analysis of these initiatives reveals significant gains in efficiency, transparency, and citizen-centric service delivery.

Digital Public Sector Innovation and Socioeconomic Development

Pakistan's Digital Pakistan Vision 2025 is a government roadmap aiming to foster digital economy growth, improve e-governance, and enhance public service delivery through ICT adoption (MoITT, 2018). Despite strategic planning, barriers to adoption persist, including infrastructure deficits, low digital literacy, and limited institutional capacity. Provincial governments have initiated innovation strategies aligned with federal objectives but are customized to local contexts.

Prominent Initiatives

- NADRA: A landmark initiative, NADRA has revolutionized national identity management using biometric technology to provide secure citizen identity verification and digital record keeping, enabling e-governance and social welfare targeting.
- Roshan Digital Account (RDA): Introduced in 2020, the RDA enables digital banking and investment in Pakistan for overseas Pakistanis through digital banking solutions, boosting remittances.
- Pakistan Citizen Portal (PCP): The PCP aggregates citizen complaints and feedback and promotes transparency, citizen engagement, and government accountability.
- The Ehsaas Program: As Pakistan's flagship social protection initiative, the program utilizes biometric verification and digital platforms to ensure efficient welfare distribution and cash transfers to vulnerable populations.

- Billion Tree Tsunami: An environmental restoration project, the Billion Tree Tsunami leveraged digital monitoring tools and systems to track reforestation efforts and promote sustainability and citizen participation.

- Raast instant payment system: The Raast system has transformed the financial landscape of Pakistan by enabling real-time digital transactions and facilitating person-to-person (P2P) and government-to-person (G2P) payments.

Improvements in Processes and Outcomes

Digital platforms have enabled scale and transparency, while biometric and AI technologies have enhanced service delivery. Programs such as the PCP, NADRA, and Raast have produced measurable improvements in efficiency and citizen satisfaction.

Although process and outcome innovations are more visible, efforts have been made to improve their structures. Dedicated institutions, such as STZA, NASTP, and PDA, are structural innovations designed to create a supportive environment in which new ideas can be developed, tested, and scaled more effectively. Pakistan has begun developing innovation labs and partnerships with the aim of centralizing expertise and resources for digital tool testing and citizen co-design.

Innovations such as NADRA's biometric database have fundamentally reshaped the structural architecture of Pakistan's public sector. By creating a centralized, secure, and verifiable digital identity for over 230 million citizens, NADRA did not simply digitize an existing process; it developed a new foundational infrastructure. This structural innovation has been a critical enabler for subsequent programs. In addition to dramatically reducing identity fraud by up to 70%, NADRA has established a platform upon which other services, such as the Ehsaas social protection program and the Raast system, have been built.

Regional Benchmarking and R&D Investment Patterns

R&D investment is a critical indicator of innovation capacity. Pakistan's R&D expenditures are markedly low, comprising only 0.16% of GDP. Pakistan's innovation labs and partnerships can be summarized as follows.

- Pilots: Islamabad, Lahore, and Peshawar

- Purpose: Citizen co-design and digital tool testing

- Benefits: Reduced rollout risks and increased satisfaction

- Global models: Laboratories in South Korea and Malaysia showing 30–40% efficiency gains

- Best practices: Examples include regular citizen feedback workshops, collaboration with academia/startups, and agile innovation processes.

Public Sector Innovation Models in Pakistan

Table 4 summarizes the significant innovation programs in Punjab, Khyber Pakhtunkhwa, Sindh, and Balochistan, including key performance indicators (KPIs), impacts, gaps, and recommendations.

TABLE 4

PROVINCE-WISE INNOVATION-RELATED PROGRAMS ALONG WITH KPIS, IMPACTS, GAPS, AND RECOMMENDATIONS.

Province	Programs	Key Departments	KPIs	Impacts	Gaps	Recommendations
Punjab	Citizen portal; Punjab Information Technology Board initiatives	Punjab Information Technology Board and Punjab Literacy and Non Formal Basic Education Department	4-day resolution, 65% literacy	Fast resolution and strong adoption	Urban–rural access gap	Expand rural digital services
Khyber Pakhtunkhwa	NADRA digitization; E-Health	NADRA, Khyber Pakhtunkhwa Health Department and KPITB	6-day resolution, 55% literacy	Better access to IDs and health data	Infrastructure limitations	Invest in broadband
Sindh	E-Governance	The centralized Chief Minister's Complaint Cell and Sindh Education and Literacy Department	7-day resolution, 56% literacy	Moderate service quality	Inconsistent services	Standardize delivery mechanisms
Balochistan	DigiBizz Freelancing Program	Science and Information Technology Department	10-day resolution, 30% literacy	Low service quality	Lack of skills and funding	Training and budget allocation

Source: Prime Minister's Performance Delivery Unit (PMDU, n.d), PITB (2023), Pakistan Bureau of Statistics (PBS, 2021), NADRA (2022), KPITB (2023), Pakistan Bureau of Statistics. (2025), Science and Information Technology Department (2021).
Note: KPITB, Khyber Pakhtunkhwa Information Technology Board.

Analysis of Key Innovation Domains

- Governance innovation and digital transformation: Pakistan's efforts to digitize government services aim to enhance transparency, reduce corruption, and improve efficiency. The PCP exemplifies this progress by allowing citizens to submit complaints directly to government officials, thereby increasing accountability. However, widespread adoption is hindered by infrastructural challenges such as inconsistent Internet access and resistance to change within bureaucracies (Arfeen & Khan, 2009).

- Sectoral innovation and infrastructure development: Pakistan's digital infrastructure development remains uneven, with urban centers benefiting more than rural areas. Programs promoting e-governance and digital health show potential but require expansion and integration with national systems (WB, 2022).

- IT system modernization and ERP adoption: In selected government departments, IT systems have been modernized and ERP systems introduced to improve financial management and resource allocation. However, the slow pace of ERP integration and lack of trained personnel limit its effectiveness (Ministry of Finance, 2023).

- Public spending efficiency and social outcomes: Programs such as Ehsaas utilize digital platforms to improve the targeting and delivery of social welfare. While the initial results are promising, inefficiencies and leakage remain concerns due to governance weaknesses (Rahman, 2025).

- Civil service reform and stakeholder engagement: Civil service reforms aimed at building capacity and promoting innovative culture are nascent. Training programs and innovation labs have been introduced but require scaling and institutional support (APO, 2023c).

Literature Review

This study conducted a qualitative analysis of government documents, policy briefs, and international reports from the UNDP, WB, and ADB.

Overview of Public Sector Innovation and R&D Investment

Public sector innovation is the process through which governments develop and implement new ideas, methods, or technologies to improve public services, policy effectiveness, and governance outcomes. It encompasses digital transformation, institutional reforms, and the adoption of emerging technologies, such as AI, blockchain, and IoT.

R&D investment is internationally recognized as a key driver of innovation and economic competitiveness. There is a correlation between higher R&D intensity, measured as R&D expenditure as a percentage of GDP, and enhanced technological capabilities, productivity gains, and socioeconomic development (OECD, 2023). Understanding R&D patterns is crucial for developing effective innovation strategies in Pakistan.

R&D Investment: Cross-Country Comparisons

Pakistan's R&D expenditure is among the lowest globally and regionally. According to Trading Economics (n.d.), R&D investment accounted for approximately 0.16% of Pakistan's GDP in 2023. This figure is consistent with the data reported by TheGlobalEconomy.com (n.d.), which places Pakistan's R&D intensity at 0.16% of GDP in 2023.

Institutional Innovation Frameworks in APO Member Countries

As a regional intergovernmental body dedicated to enhancing productivity and innovation, the APO (2022) has developed frameworks and conducted extensive research on public sector innovation in member economies.

Key Initiatives

- NADRA has revolutionized national identity management using biometric technology, enabling e-governance and social welfare targeting.

- Introduced in 2020, the RDA facilitates digital banking for Pakistanis overseas, boosting remittances with deposits exceeding USD2 billion by 2021 (SBP, 2021).

- The PCP aggregates citizen complaints and feedback, promoting transparency and government accountability (Accountability Lab Pakistan, 2023).

- Ehsaas Program: Pakistan's flagship social protection scheme utilizes biometric verification and digital databases to efficiently deliver cash transfers to vulnerable populations (Ministry of Poverty Alleviation and Social Safety, n.d.).

- The Billion-Tree Tsunami is an environmental restoration project that leverages digital monitoring tools to promote sustainability and citizen participation (International Union for Conservation of Nature, 2021).

Digital Public Sector Innovation and Socioeconomic Development

Pakistan's Digital Pakistan Vision 2025 is a government roadmap aimed at fostering digital economic growth, improving e-governance, and enhancing public service delivery through ICT adoption (MoITT, 2023). Despite strategic planning, barriers to adoption persist, including infrastructure deficits, low digital literacy, and limited institutional capacity.

Pakistan's Innovation Infrastructure and Sectoral Readiness

Pakistan has launched several key institutions to support innovation:

- STZA is a government entity responsible for establishing technology parks and innovation hubs in Islamabad, Lahore, and Haripur, aimed at fostering startups and technology firms (STZA, n.d.).

- The NASTP focuses on aerospace industry clusters in Islamabad, Karachi, Lahore, and Kamra, with the aim of fostering R&D and technology commercialization (NASTP, n.d.).

- Digital Dera is an agritech initiative that provides digital advisory services to farmers in South Punjab to improve productivity and supply chains (Internet Society, n.d.).

- Established in 2025, the PDA will drive digital governance reforms and coordinate government digital initiatives under the Digital Pakistan Vision (PDA, n.d.).

Table 5 presents departmental scores of Pakistan's Innovation Readiness Index.

TABLE 5

INNOVATION READINESS INDEX: DEPARTMENTAL SCORES (PAKISTAN).

Department	Infrastructure (15)	Skills (15)	Leadership (10)	Engagement (10)	Total (50)	Rank
NADRA	14	13	9	8	44	1
Punjab IT Board	13	12	8	7	40	2
KPITB	12	11	6	6	35	3
MoITT (Federal)	11	10	6	6	33	4
Sindh IT Department	10	9	5	5	29	5
Balochistan IT Department	8	7	2	2	19	6

Source: Compiled and accessed by the author based on data in this report and KPITB (2023), Government of Balochistan (2023), Government of Sindh (2023), MoITT (2023), NADRA (2023), Punjab Information Technology Board (2023), and UNDP (2022), WB (2023).
Note: KPITB, Khyber Pakhtunkhwa Information Technology Board; MoITT, Ministry of Information Technology and Telecommunication; NADRA, National Database and Registration Authority.

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN PAKISTAN

Raast Instant Payment System

Description

Pakistan has made remarkable advancements in its financial transformation through Raast, Pakistan's first instant payment system. Raast was developed by the SBP with support from partners such as Karandaaz Pakistan, the Bill and Melinda Gates Foundation, and the WB (ProPakistani, 2022; Wikipedia, n.d.).

The Raast system enables real-time peer-to-peer transfers and instant digital payments. The system was designed to create secure and fast digital transactions for Pakistani individuals, enterprises, and official organizations. It has been a pivotal driver of financial inclusion, helping to reduce reliance on cash and enabling smoother digital transactions.

Function

The Raast identification (ID) system functions as an easy-to-use identifier through which users can access payments using their linked mobile numbers. As this new payment method uses a modern ID system, users no longer need to manage or transmit complicated bank account numbers or International Bank Account Numbers (IBANs). Users who register their Raast ID can easily send and receive funds through a mobile number without requiring additional payment information.

Purpose and Design

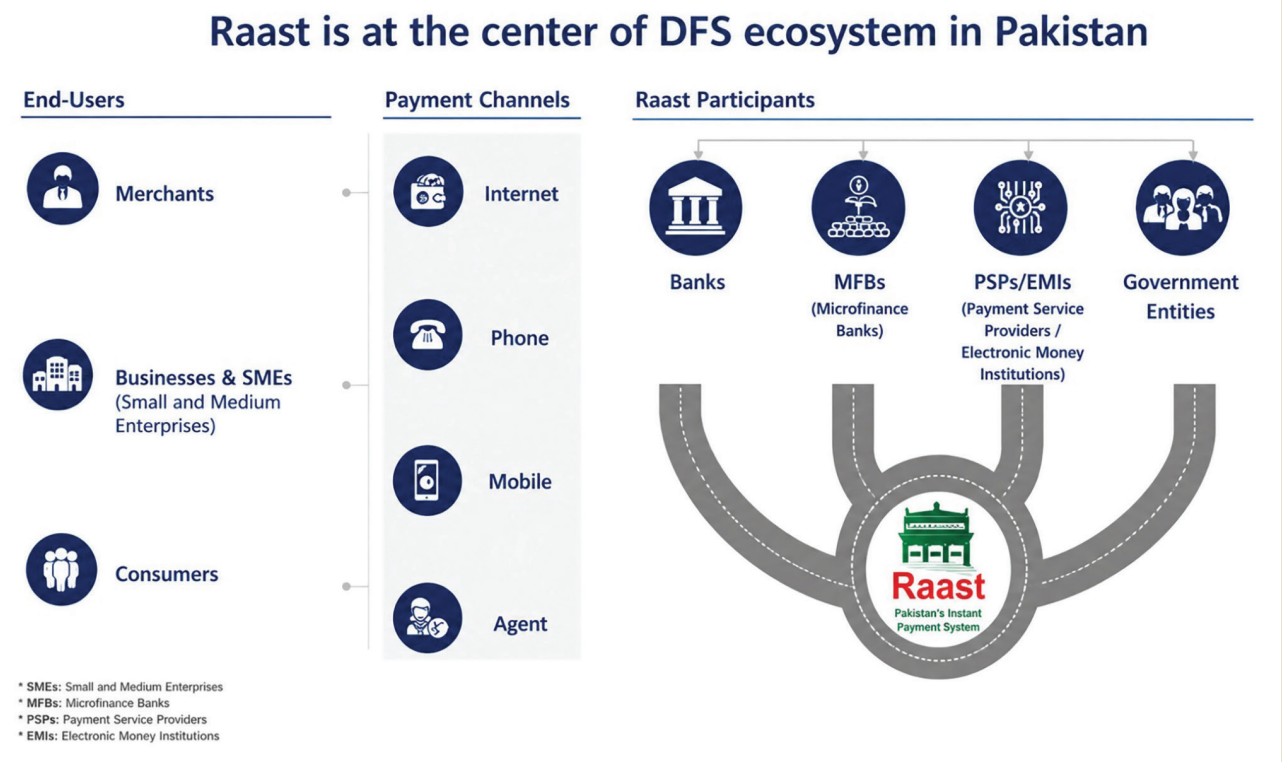
Raast enables the near real-time settlement of small-value P2P, person-to-merchant (P2M), and G2P transfers across banks, microfinance institutions, and financial technology (fintech) companies using a centralized infrastructure called the Pakistan Faster Payment System (SBP, n.d.a). Figure 1 shows the Raast interface.

Key Features

- Instant and secure: Raast enables secure real-time transfers among individuals, merchants, businesses, and government entities (SBP, n.d.a).
- Cost-efficient: Raast operates on a cost-recovery basis, making it free for end users (SBP, n.d.a; Tax News & Updates Pakistan, 2021).
- Interoperability: All participating institutions connect to the Raast system through a centralized infrastructure, enabling seamless payments across different platforms (SBP, n.d.a, SBP, 2023b).
- User-centric: Payments can be made via Raast IDs, typically mobile numbers linked to bank accounts, or through an IBAN via participating banks' digital channels, including mobile applications and internet banking (SBP, n.d.b).
- P2M capabilities: Merchants can accept payments via Raast through quick-response (QR) codes, aliases, IBAN, or "Request to Pay" free of cost and with real-time confirmation SBP, 2023b; The Nation, 2023).
- Security and fraud prevention: Raast enforces enhanced data protection, payer authorization checks, and fraud detection measures (SBP, 2023b; SBP, n.d.a).

FIGURE 1

RAAST INTERFACE.



Source: SBP (n.d.a).
Note: DFS, Digital Financial Services; SBP, State Bank of Pakistan.

Expansion of the Raast Ecosystem

- Institutional integration: By early 2025, Raast onboarding included over 36 banks, 841,000 merchants, and approximately 43 million consumers (Business Recorder, 2025).
- ID registrations: By September 2024, there were 39.5 million registered Raast IDs (Development Asia, 2025).
- Account accessibility: Raast is usable directly through mobile and Internet banking, and even at the branch counters of integrated institutions.

Growth and Economic Impact

Table 6 illustrates the rapid scaling of the Raast system from 2022 to 2025.

TABLE 6

RAPID SCALING, 2022–2025.

Financial Year	Transactions (P2P) Million	Transactions (PKR)
2022	7.9	102.1 billion
2023	147	3,074 billion

(Continued on next page)

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Financial Year	Transactions (P2P) Million	Transactions (PKR)
2024	496	11,558 billion
2025 (Q1)	371	8.5 trillion
2025 (Q2)	795.7	6.4 trillion

Source: SBP (2023a, 2024, 2025).
Note: P2P, person-to-person; PKR, Pakistani Rupee; Q1, first quarter; Q2, second quarter; SBP, State Bank of Pakistan.

- Total volume: To date, Raast has processed over 892 million transactions exceeding PKR20 trillion in total value (Iqbal, 2025; Profit by Pakistan Today, 2025; Siddiqui, 2024).

- Surge speed: Raast processed PKR1 trillion in just 16 days compared with the 336 days required to process the same amount before the innovation, representing a remarkable acceleration in transaction velocity (Profit by Pakistan Today, 2024; Siddiqui, 2024).

- Broad penetration: By Q1 2025, Raast processed 1.5 billion transactions, tallied at over PKR34 trillion. It also saw a 16% increase in digital retail payment volume and a 22% increase in value compared to the previous quarter (Qureshi, 2025).

Broader Impact on Pakistan's Economy

- Greater financial inclusion: Raast has played a pivotal role in bringing digital payments to underserved rural populations. Mobile and online transaction usage has increased from 17% in early 2020 to 75% by September 2024 (Development Asia, 2025).

- E-commerce enablement: Over 7,300 e-commerce merchants were connected by mid-2024, enabling swift, cost-free payments that streamlined checkouts and settlements for small online retailers (SBP, 2023b).

- Government and cashless economy support: Raast is integral to the SBP's "Go Cashless" campaign, and broader financial literacy is driving Pakistan to shift toward a predominantly digital payment ecosystem (SBP, 2023b.; Iqbal, 2025; Profit by Pakistan Today, 2025).

- Enabling innovation: The platform lowers the barriers to innovation by offering application programming interfaces (APIs) and simplified integration paths for banks, fintech companies, and payment providers, thereby fostering a more vibrant digital payment landscape (SBP, 2023b; SBP, n.d.a).

Key Success Factors

- Simplified transactions: The conventional method of transferring funds requires users to exchange extensive bank details, resulting in a high level of complexity and the likelihood of errors. To simplify matters, Raast ID allows users to conduct transactions using easily memorable phone numbers. This enhances user convenience and decreases errors in the fund transfer processes.

- Instantaneous payments: The speed of processing financial transactions is an important requirement in today's fast-moving global economy. Raast allows users to make instant digital

payments and complete transactions within seconds. Raast's instant processing mechanism accelerates P2P and P2M transfers, making financial processes more efficient.

- Free transactions: Raast establishes financial inclusion practices by making payments free of charge. Raast does not charge any fees for digital payments, improves the accessibility of electronic payments, and encourages users to switch to non-cash transactions.

- Enhanced security: Security concerns have frequently prevented people from accepting digital payment methods. Raast provides advanced security systems through a combination of data protection solutions and fraud prevention tools. The authorization process for each transaction originates from the payer, keeping funds and personal information secure from unauthorized users.

- Universal accessibility: Raast's system ensures full connectivity with every bank and financial institution in Pakistan. The system enables users to make payments to any account holder through a single standard platform regardless of where the account is located, thereby creating an open and comprehensive financial network.

- 24/7 availability: Financial needs extend beyond the standard banking operating hours. Raast maintains continuous operation such that users can perform transactions at any time. Raast provides unreserved access to user funds at all times, aligning with the requirements of modern life.

- No minimum transaction threshold: The Raast payment system supports small value transfers and does not set a minimum transaction threshold. This additional capability benefits both people and small companies transferring minimal amounts of money.

- Integration with multiple banking channels: The Raast system integrates banking services through mobile apps, Internet banking, and specific counter-based services. Multiple access points enhance access to services, convenience, and user engagement.

Impact of Raast ID on Pakistan's Financial Landscape

- Raast ID has made digital payments accessible and cost-free, enabling members of society without bank access, including marginalized communities, to engage in traditional banking.

- Raast drives consumers toward digital payment. It reduces cash dependency while aligning with global payment methods and standards, and improves transparency in economic processes.

- The platform enables small and medium-sized enterprises (SMEs) to accomplish free instant transactions, improving their business cash flow and operational performance.

- Government payments are now distributed using the Raast platform. Government payments are now more efficient, with salaries and pensions being paid through instant and transparent transactions.

An innovation in the digital payment infrastructure, the Raast system has produced crucial benefits for individuals, businesses, and public entities in Pakistan. This payment system functions as a

market disruptor through simple and swift operations, secure procedures, and budget-friendly solutions, thus promoting economic inclusion (Sidekick Pakistan, 2025).

PCP

Description

The PCP is a national e-governance platform developed to provide citizens with a unified interface for registering grievances, seeking information, and providing feedback about public services. Launched in 2018, the portal links citizens to federal, provincial, and local government departments and offers real-time tracking, escalation mechanisms, and performance dashboards for public officials. This section provides a comprehensive review of the PCP, including its design, functioning, measurable outcomes, strengths, and limitations, and offers practical recommendations and a roadmap for improving its impact on public sector productivity and citizen satisfaction.

The PCP has improved visibility and responsiveness across multiple government domains and fostered a stronger performance culture. Digital workflows and analytics have helped identify recurring service delivery bottlenecks and supported data-driven decision-making. However, the reported high-resolution rates have been accompanied by lower-than-expected satisfaction scores and concerns regarding data integrity in some instances. To maximize impact, the PCP requires investments in data validation, a more user-centered design, inclusive access, capacity building, and institutional incentives to address root causes, rather than only log closures.

Rationale

Traditionally, complaint handling in Pakistan has been fragmented, paper-intensive, and slow. The PCP was designed to streamline the process, increase transparency, and use citizen feedback to improve public services and official accountability.

Target Users

The PCP's intended users include ordinary citizens (urban and rural), businesses and service providers, overseas Pakistanis, civil society organizations and media, and government departments and officials.

Primary Objectives

The PCP's primary objectives are to provide a single-window grievance redressal mechanism, improve responsiveness, reduce bureaucratic delays, increase transparency and public accountability, collect structured data for policy and operational improvements, and facilitate two-way communication between the government and citizens.

Scope

In terms of scope, the PCP covers all of Pakistan, with complaints routed to federal, provincial, and local authorities. It encompasses multiple service domains including municipal services, utilities (power/water), health, education, policing, revenue, transport, licensing, and social protection programs.

The platform is overseen by the PMO via the Prime Minister's Performance Delivery Unit. Operational roles include system administrators, department coordinators, and field-level officers responsible for handling complaints.

Key Features of the PCP

- Centralized complaint system: The PCP provides a single national platform for citizens to lodge complaints, suggestions, or requests regarding any government department at the federal, provincial, or local level. This eliminates the need to approach multiple offices manually.

- Integration with government departments: The PCP connects to over 8,000 government offices encompassing ministries, provincial departments, and district-level organizations. This ensures cross-departmental coordination for quicker problem-solving.

- User-friendly mobile application: PCP is available on Android, iOS, and the web, enabling citizens at home and abroad to access government services anytime. The platform offers Urdu and English language support, ensuring inclusivity.

- Real-time tracking and transparency: Citizens can track complaints from submission to resolution. Feedback options rate satisfaction with the outcome and promote accountability.

- Performance evaluation dashboard: This system automatically generates performance reports for government officers based on complaint-handling efficiency and citizen satisfaction. The Prime Minister's Performance Delivery Unit uses these data to enhance its performance-based governance.

- Data-driven decision-making: Complaints are categorized and analyzed to identify policy gaps, service inefficiencies, and recurring administrative challenges.

- Inclusivity and accessibility: PCP is accessible overseas by Pakistanis and people in remote areas. It was designed to encourage citizen participation in the governance.

- Grievance redressal: PCP standardizes the time limits for complaint resolution to improve responsiveness and enhance public trust.

- Feedback and reopening options: Citizens can reopen complaints if they are dissatisfied with the response, ensuring follow-up and genuine accountability.

- Security and confidentiality: User data and complaint details are protected using a secure database and government-level encryption systems.

Key Success Factors

- Improved governance efficiency: The portal streamlines communication between citizens and government departments, reducing bureaucratic delays and manual paperwork and enabling faster decision-making. Automation of grievance redressal increases administrative productivity and accountability. In terms of impact, more efficient service delivery lowers transaction costs for businesses and citizens, leading to an improved ease of doing business and greater trust in government institutions.

- Enhanced transparency and accountability: Every complaint and its outcomes are digitally recorded and traceable, minimizing corruption and manipulation. Citizens can rate services and hold officials accountable via public feedback loops. The Prime Minister's Performance

Delivery Unit dashboard identifies high- and low-performing departments and officers; the resulting transparency improves public sector credibility and helps attract investments by showcasing good governance practices.

- Citizen empowerment and inclusion: The PCP grants every Pakistani, including those overseas, direct access to government decisionmakers, encouraging public participation and strengthening democratic governance. The platform bridges the gap between citizens and state institutions through real-time digital communication. In terms of impact, empowered citizens contribute ideas, feedback, and solutions, fostering social cohesion and responsive public administration.

- Cost and time savings: PCP has replaced traditional paper-based and in-person complaint systems with digital platforms. The government saves money through reduced operational costs (e.g., stationery, staff time, and transport), while citizens save travel time and resources by submitting complaints at home. These efficiencies translate into national productivity gains and budgetary savings for administrative operations.

- Data-driven policy reforms: Complaint analytics provide valuable insights into service delivery bottlenecks and citizen needs, helping policymakers prioritize resource allocation and introduce the most needed reforms. By helping improve policy effectiveness and public investment efficiency, PCP contributes to sustainable economic growth.

- Promotion of digital governance: The PCP has accelerated the digital transformation of the public sector, fostering a culture of innovation and encouraging departments to adopt e-governance tools, performance tracking, and online service delivery. In this respect, the PCP supports Pakistan's digital vision by improving its competitiveness and innovation capacity.

- Boosting public trust and investor confidence: PCP cultivates a transparent, accountable government environment, boosting citizen trust and investor confidence. The consistent resolution of these issues indicates institutional stability, which is a key factor in economic development.

NADRA Digital Services

Description

NADRA is Pakistan's premier organization responsible for citizen registration, identity management, and database services. Established in 2000, NADRA operates under the NADRA Ordinance and serves as the backbone of Pakistan's digital identity infrastructure. Its core mission is to maintain a secure, accurate, and accessible citizen identity system that enables efficient delivery of public services, social protection programs, and e-governance initiatives. NADRA has evolved from manual registration systems to fully digitized identity and data services, making it one of the most advanced digital identity ecosystems in South Asia.

Type and Sector

Pak Identity Mobile Application Launched in 2021 and upgraded in 2025, this application allows citizens and Pakistanis to apply, renew, or modify their National Identity Cards, National Identity Card for Overseas Pakistanis, and Family Registration Certificates through their mobile devices. In January 2025, NADRA shifted all registration services from its website to the Pak Identity application, thereby increasing security and usability.

Through the app, users can apply for National Identity Cards, National Identity Card for Overseas Pakistanis, Pakistan Origin Card, and Child Registration Certificates; upload photographs, fingerprints, and documents digitally; pay fees using digital payment gateways (e.g., JazzCash, Easypaisa, or credit/debit cards); and track the application progress in real time.

Simply put, the Pak Identity mobile app simplifies access to over nine million Pakistanis overseas and reduces queues at NADRA offices.

Dematerialized (Digital) ID Card In March 2025, NADRA launched Pakistan's first dematerialized or digital ID card available on the Pak Identity app. Digital ID is recognized as a legal form of ID that reduces reliance on physical cards. It integrates government and private systems, such as banks, telecommunications, and public utilities, for digital verification. Digital ID cards are a major step toward paperless governance and digital citizenship, supporting Pakistan's Digital Transformation Vision 2030.

Digital Payment Integration NADRA has implemented cashless transactions for all of its services. Fees can now be paid through mobile wallets, online banking, or credit cards. This feature reduces fraud, enhances convenience, and supports financial inclusion.

"Proof of Life" for Senior Citizens Introduced in 2024, this service helps pensioners verify their identity digitally without having to visit NADRA offices. Accessible through the Pak Identity app, this service uses facial recognition for senior citizens with worn fingerprints. This service improves accessibility, reduces travel needs, and supports the welfare of seniors.

Nishan Pakistan Platform (Digital Verification API) Nishan Pakistan is a digital identity verification platform that allows businesses and organizations to integrate NADRA's authentication services via APIs.

The platform enables electronic Know Your Customer and biometric verification for banks and financial institutions, telecom operators, fintech companies, and government departments. It promotes entrepreneurship by allowing startups to access secure ID verification APIs, strengthens digital economy infrastructure, and increases trust in online transactions.

Nishan Pakistan has also provided biometric and security enhancements. Specifically, multifactor authentication (i.e., facial, iris, and fingerprint authentication) ensures robust identity validation. For overseas Pakistanis, login from a new device requires biometric confirmation. Advanced AI systems can detect duplicate or fraudulent entries. Thus, Nishan has enhanced data integrity, security, and citizen trust in digital governance.

Self-Service Kiosks and Mobile Registration Units NADRA is expanding the availability of self-service kiosks and mobile registration vans at airports, malls, and rural areas. Citizens can renew or update their IDs through kiosks and mobile units without visiting the office. This will increase the accessibility for remote populations in Gilgit-Baltistan, Balochistan, and Azad Jammu and Kashmir.

Data Protection and Regulatory Framework

NADRA operates under the NADRA Ordinance 2000, Citizenship Act, and Data Protection and Security Regulations (internal NADRA charter). All systems comply with policies regarding

encrypted data handling, biometric verification, and confidential storage of citizen information. NADRA's Service Charter (NADRA, 2024) ensures transparency, the ethical use of data, and accountability in identity management.

Challenges and Limitations

Despite major progress, challenges remain:

- Digital literacy: Many rural citizens lack access or skills to use mobile services
- Connectivity issues: Low Internet coverage in remote areas limits service reach
- Biometric difficulties: Older adults or those in labor-intensive employment often experience fingerprint verification failures
- Adoption barriers: Some institutions still demand physical ID cards, slowing digital adoption
- Data security risks: There is a growing need for cybersecurity and citizen data protection laws

Key Success Factors

Table 7 summarizes NADRA's key impact areas and outcomes.

TABLE 7

IMPACT AREAS AND OUTCOMES OF NADRA DIGITAL SERVICES.

Impact Area	Key Outcomes
Accessibility and convenience	Citizens can apply for IDs from home or abroad without physical visits
Administrative efficiency	Digital workflows reduce paperwork and processing time
Economic productivity	Supports e-commerce, banking, and investment through secure digital identity verification
Public trust and transparency	Digital tracking and biometric authentication minimize corruption and fraud
Financial inclusion	Links identity with mobile wallets and digital payments
Innovation ecosystem	Enables startups to build secure platforms using NADRA APIs (Nishan Pakistan)
Sustainability	Reduces use of paper, printing, and physical logistics in ID issuance

Source: NADRA (n.d.b).
Note: APIs, application programming interfaces; IDs, identification documents; NADRA, National Database and Registration Authority.

Economic and Governance Impact

NADRA's digital services have reduced government operational costs by digitizing registration processes, creating opportunities for public–private partnerships through data services, and strengthening Pakistan's regional position in digital identity innovation. It has also supported national programs such as Ehsaas, the Benazir Income Support Program, Sehat Sahulat, and e-voting systems.

The resulting transformation aligns with Pakistan Vision 2025 (Ministry of Planning, Development and Reform, 2014) and SDG-16 (Peace, Justice, and Strong Institutions), promoting transparency, inclusion, and economic growth.

NADRA's transition from traditional registration to digital-first services has revolutionized identity management in Pakistan. NADRA is driving Pakistan's journey towards e-governance, digital

inclusion, and economic resilience through mobile platforms, digital payments, biometric security, and open verification APIs. By merging technology with citizen-centric service delivery, NADRA has become a pillar of Pakistan's digital transformation, enhancing national productivity, transparency, and global credibility.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN PAKISTAN

Case Comparison: Before and After the Innovation

Table 8 summarizes the cases, state of affairs before and after implementation, improvements, impacts, and ongoing challenges.

TABLE 8

COMPARISON OF SELECTED INNOVATION CASES.

Program	Before	After	Improvement	Impact	Challenges
PCP	Manual complaints; 10-day average	Digital; 4-day average	60% faster	Greater satisfaction and transparency	Digital literacy and Internet access
NADRA services	Manual ID issuance	Automated digital services	80% automation	Faster issuance and lower incidence of fraud	System integration
Raast payments	Manual, cash-based transactions	Real-time digital payments	70% adoption	Financial inclusion and faster transactions	User training and trust

Source: Compiled by the author based on publicly available news reports, media publications, and official documents: Dawn (2019), NADRA (n.d.a), Prime Minister's Performance Delivery Unit (n.d., 2024), and SBP (2024).
Note: ID, identification document; NADRA, National Database and Registration Authority; PCP, Pakistan Citizen Portal.

Synthesis

Table 9 presents a comparative synthesis of public sector innovation cases in Pakistan. It provides a cross-case synthesis of three major public sector innovations in Pakistan, comparing their innovation type, policy objectives, governance level, implementation mechanisms, and measurable impact.

TABLE 9

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATIONS IN PAKISTAN.

Feature	PCP	Raast	NADRA Digital Services
Innovation Type	Real-time citizen feedback system	Real-time, interoperable payment rails	Digital identity and online public service delivery platform
Primary Goal	Grievance redressal and accountability	Financial inclusion and instant payments	Facilitate secure identity verification and provide online citizen services
Level of Government	National/cross-sector	National/international	National
Main Success Factors	Government mobile app for citizens to connect with government, raise issues, and make suggestions	Instant, free, and secure transactions combined with high interoperability across all financial institutions	Biometric verification system, centralized national database, and online/mobile access to services (e.g., Computerized National Identity Card issuance, renewal, verification)

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Feature	PCP	Raast	NADRA Digital Services
Impact	Over 4 million complaints processed	Over 892 million transactions processed	Over 120 million Computerized National Identity Cards issued; millions of online applications processed annually through Pak Identity; significantly reduced processing time and improved nationwide access to identity services

Source: Compiled by the author based on publicly available news reports, media publications, and official documents: NADRA (n.d.a, n.d.c, 2023, 2025, 2026), PMDU (2023), and SBP (2022, 2023, 2024, 2025).
Note: CNIC, Computerized National Identity Card.

Key Public Sector Innovations

Table 10 summarizes the key innovations, implementation timelines, measurable outcomes, and governance impacts of the selected digital public sector transformation initiatives in Pakistan.

TABLE 10

KEY INNOVATION, OUTCOMES, AND IMPACT OF SELECTED CASE STUDIES.

Case Study	Innovation	Outcomes	Impact
PCP	Complaint platform integrated across more than 8,000 departments	4.9 million complaints logged, with a 91% resolution rate	Increased transparency and public trust
NADRA e-Services	AI and biometric-based ID services	70% fraud reduction and improved diaspora access	Efficiency and trust in ID management
Raast system	Real-time P2P and G2P payment system	PKR20 trillion processed; 32 million accounts	Financial inclusion and more efficient welfare

Source: NADRA (2023), Prime Minister's Performance Delivery Unit (2024), and SBP (2024, 2025).
Note: G2P, government-to-person; ID, identification; NADRA, National Database and Registration Authority; P2P, person-to-person; PCP, Pakistan Citizen Portal; PKR, Pakistani Rupee.

ANALYSIS OF CONTEXTUAL FACTORS

Enabling Actors

- Political will and institutional strength: Support from high-level leadership and the leveraging of existing structures such as NADRA and the Computerized National Identity Card database have ensured faster deployment and continuity across political cycles.

- Investment in technology and infrastructure: Investment in AI, digital platforms, satellite monitoring, and payment infrastructure has enabled Pakistan to leapfrog inefficient systems, optimize service delivery, and improve citizen outreach.

Ongoing Challenges: Equity, Skills, and Stability

- Literacy and educational disparities: Pakistan's literacy rate remains around 60–61%, with striking urban–rural and gender gaps. Urban areas (approximately 74%) fare significantly better than rural areas (approximately 51%), and female literacy (approximately 52–53%) lags behind male literacy (approximately 68%) (Qadri, 2021). Basic amenities such as clean water, electricity, and secure school buildings are lacking, limiting inclusive access to digital platforms.

- Limited higher education capacity: Higher education remains constrained. In Pakistan, only about 38% of university faculty hold PhDs, while academic emphasis remains skewed toward traditional fields, driving a brain drain without corresponding upskilling in innovation domains.

- Weak regional and global innovation standing: Pakistan trails its regional neighbors in education and innovation. That said, initiatives like Raast and Ehsaas represent scalable models for the Global South.

- Political instability and governance fragility: Frequent policy shifts and institutional volatility limit the long-term sustainability of innovation, requiring stronger legal and institutional foundations to protect gains.

Role of Education in Innovation and Economic Growth

- Education as foundational to innovation success: Digital initiatives demand user ability. Low literacy, especially among rural and female populations, is hindering the inclusive uptake of platforms like Raast and PCP.

- Skills–market mismatch: Current academic offerings are misaligned with emerging fields (e.g., AI, climate studies, and digital governance), limiting the potential for innovation.

- Diaspora engagement and knowledge transfer: RDA has successfully mobilized diaspora capital. A similar focus on Science, Technology, Engineering, and Mathematics and innovation could harness diaspora talent for knowledge exchange and system strengthening.

- Infrastructure deficits in schools: Without adequate facilities, rural and underprivileged students are excluded from innovation ecosystems. This is a major barrier to achieving equitable progress.

Policy Ideas for Inclusive Innovation

- Increase education funding from the current level of approximately 0.8% of GDP to 4–6%.

- Improve school infrastructure in rural areas including water, electricity, sanitation, and safety.

- Promote literacy equity through targeted programs for rural women and marginalized groups.

- Align education with innovation needs by placing greater emphasis on ICT, climate studies, AI, and research capacity.

- Bridge the digital divide by establishing community e-hubs and rural digital literacy centers.

- Leverage innovation for regional learning by sharing models (e.g., Raast and Ehsaas) with other developing nations.

- Institutionalize stability by enacting legal frameworks to sustain innovation beyond electoral cycles.

Summary of Key Insights

Table 11 summarizes the key insights drawn from the analysis of public sector innovation in Pakistan.

TABLE 11

KEY INSIGHTS.

Theme	Insight
Digital innovation	The Raast system and PCP have modernized service delivery
Education and literacy	Low literacy and inequality limit access to innovation
Skills and higher education	University quality and relevance to innovation drive capacity issues
Governance stability	Political instability undermines long-term innovation sustainability
Regional potential	Pakistani innovations offer scalable examples for developing contexts
Policy direction	Long-term, cross-sector reforms are needed for inclusive and sustained innovation

Source: Compiled by the author.
Note: PCP, Pakistan Citizen Portal.

Scalability and Replicability of Innovations

Pakistan's digital governance models are highly replicable, particularly its innovative digital grievance systems (such as the PCP), biometric welfare and registry frameworks (such as NADRA programs), and instant financial inclusion platforms (such as the Raast system). However, successfully scaling them further requires improving digital literacy, strengthening infrastructure in remote areas, and enhancing adaptive institutional governance.

KEY DRIVERS OF IMPROVEMENTS

Key Trends and Main Themes in Public Sector Innovation

Pakistan has introduced several flagship digital platforms to enhance public service delivery, including the PCP, Raast system, and NADRA e-services. By leveraging biometric verification, mobile apps, AI, and real-time data, these innovations have dramatically improved transparency, accessibility, and trust in public institutions.

Key Factors Supporting Innovation in Pakistan

Table 12 presents an overview of the key factors that support the success of public sector innovation in Pakistan.

TABLE 12

KEY ASSOCIATED FACTORS.

Dimension	Pakistan: Enablers and Reforms	Challenges/Barriers	Global Ranking	Peer Country Case Study	Source
Institutional Capacity	NADRA, Computerized National Identity Card system, Prime Minister's Performance Delivery Unit, and policy dashboard	Weak interministerial coordination and political volatility	Global Innovation Index, Institutions: 113/132	Malaysia: Long-term institutional reforms via Productivity Master Plan	APO (2022), World Intellectual Property Organization (2024)

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Dimension	Pakistan: Enablers and Reforms	Challenges/Barriers	Global Ranking	Peer Country Case Study	Source
Technology and Infrastructure	Raast digital payments; satellite and AI use in public programs	Urban–rural digital divide and reliance on donor-funded infrastructure	Global Innovation Index, Infrastructure: 120/132	Thailand: Smart governance via digital transformation of local governments	APO (2022), SBP (2024), World Intellectual Property Organization (2024)
Human Capital and Education	Youthful population and vocational training potential	Low literacy level (approximately 61%), outdated public service curricula, and gender disparities	Education rank: ~136 Global Innovation Index, Human Capital: 117/132	South Korea: AI and data training for civil servants raised productivity	APO (2022), World Intellectual Property Organization (2024)
Equity and Inclusion	Ehsaas program with biometric targeting; Benazir Income Support Program	Urban–rural divide, 52% female literacy rate, and inadequate rural school infrastructure	Gender Gap Index: 145/146	India (Kerala): Decentralized e-kiosks in rural areas for access	ADB (2021), WEF (2024)
Diaspora Engagement	RDAs (over USD6 billion); diaspora capital inflow	No formal knowledge-transfer programs from diaspora	Not ranked	Philippines: Government-structured diaspora mentoring and training programs	APO (2022), SBP (2024)
Public Sector Reform	KPIs, dashboards, and e-office rollout	Resistance to reform and limited capacity in subnational units	Global Innovation Index, Public Sector Reform: Low (estimated)	Singapore: Continuous public servant upskilling via Civil Service College	Civil Service College, Singapore (2023), World Intellectual Property Organization (2024)
Innovation Readiness	Platforms like Raast, Geographic Information System, and Ehsaas labs	Weak R&D investment and lack of scale in innovation ecosystems	Global Innovation Index, overall: 88/132	Thailand: Public–private policy innovation labs	APO (2022), World Intellectual Property Organization (2024)

Source: APO (2022), Dutta et al. (2024), SBP (2024), and WEF (2024).
Note: KPIs, key performance indicators; NADRA, National Database and Registration Authority; R&D, research and development; RDA, Roshan Digital Account; SBP, State Bank of Pakistan; USD, United States Dollar.

RECOMMENDATIONS

To accelerate Pakistan's public sector innovation, the following strategies are proposed:

- Increased R&D investment: Pakistan should increase its R&D investment from the current level of 0.16% of GDP to at least 1% within the next five years, thereby aligning with regional benchmarks (APO, 2023a).
- Strengthen governance frameworks: Implement coordinated mission-driven innovation strategies modeled in Japan and South Korea (APO, 2023b).
- Expand public–private partnerships: Foster collaboration between government, academia, and the private sector to develop innovation labs and pilot programs (MoITT, 2023).

- Invest in digital infrastructure: Enhance broadband access nationwide to support e-governance and digital services, especially in rural areas (WB, 2022).

- Capacity building and civil service reform: Scale innovation training programs and embed innovation culture within public administration (APO, 2024).

- Promote data-driven policies: Utilize digital platforms for the real-time monitoring and evaluation of social programs (Rahman, 2025).

Public sector innovation is indispensable for Pakistan's socioeconomic advancement and the modernization of governance. Although Pakistan has initiated several commendable digital transformation programs, systemic barriers have limited their impact, including low R&D investment, infrastructure gaps, and fragmented policy frameworks. By learning from APO member economies such as Japan, South Korea, and Malaysia, Pakistan can adopt mission-driven innovation, strengthen partnerships, and expand its digital infrastructure. This strategic shift will enable Pakistan to transition to a knowledge-based economy aligned with global innovation standards.

Pakistan has laid the groundwork for digital transformation through key initiatives and institutional capacities. However, for these innovations to remain enduring and inclusive, policymakers must invest in education, human capital, infrastructure, political stability, and innovative ecosystems. Engaging APO frameworks and regional best practices can catalyze progress toward an equitable, resilient, and future-ready public sector in Pakistan.

Pakistan must move from isolated projects to a systemic, embedded culture of innovation. This requires addressing structural challenges, including the digital divide, bureaucratic inertia, and the need for continuous investment in skills and infrastructure. The recommendations outlined in this report provide a roadmap for institutionalizing innovation as a core function of the government. By strengthening governance, building human capital, fostering collaboration, and keeping citizens at the center of all efforts, Pakistan can build a resilient, responsive, and high-performance public sector prepared for the future.

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INSTITUTIONAL INNOVATIONS FOR AGRICULTURE, AQUATIC, AND NATURAL RESOURCES (AANR) POLICY DEVELOPMENT IN THE PHILIPPINES

EXECUTIVE SUMMARY

In the Philippines, national innovation frameworks and institutional reforms are reshaping policymaking and governance in the country's agriculture, aquatic, and natural resources (AANR) sectors. Anchored in the Philippine Innovation Act (Republic Act No. 11293; Supreme Court E-Library, 2019), innovation has become a national mandate. Innovation is driven by the National Innovation Council (NIC), supported by the Department of Science and Technology (DOST), and implemented through its research arm, the Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD). Together, these bodies strengthen science-based decision-making, align innovation with national development goals, and cultivate a knowledge-driven culture across government, research, and industry.

At the sectoral level, the PCAARRD operates as a coordinating and enabling institution for AANR innovation. It formulates national research and development strategies, fosters public-private-academic partnerships, and promotes evidence-based policymaking. Through its focus on the future, governance reform, and regional collaboration, the PCAARRD has institutionalized innovation as a dynamic and systemic process that integrates technological development, data infrastructure, and organizational learning to sustain inclusive growth and resilience.

Three flagship institutional innovations illustrate this transformation. First, Socio-Economic Research and Data Analytics Centers, established across Luzon, Visayas, and Mindanao, serve as regional hubs for data-driven research and policy support. Second, the Socio-Economics Research and Data Analytics Laboratory at the University of the Philippines Los Baños provides national leadership, harmonizing data systems and training networks. Third, the Development Innovations and Policy Laboratory, the Philippines' first policy laboratory for AANR, bridges research and public decision-making through collaborative training, policy hackathons, and digital information portals. Collectively, these initiatives form the PoliSiyensya Innovation Ecosystem, which connects analytics, capacity building, and policy design into a unified, adaptive network.

Several success factors have facilitated these innovations, namely sustained institutional leadership and funding from PCAARRD, long-term investment in digital and human infrastructure, continuous professional development in research and policymaking, and strong multisectoral partnerships. These elements demonstrate how innovation flourishes when treated as a continuous interactive process among actors, technologies, and governance structures. The Philippine approach

emphasizes data-driven reflexivity, enabling policymakers to anticipate risks and craft adaptive evidence-based solutions.

Ultimately, this study demonstrates that institutional innovation rooted in collaboration, science, and foresight has transformed the Philippine AANR sector into a model of inclusive and data-informed development. By merging research, analytics, and policy practices into an interconnected system, DOST-PCAARRD and its partners are advancing a modern, resilient, and innovation-oriented public sector that will enable the Philippines to meet emerging economic, environmental, and social challenges.

BACKGROUND

In the Philippines, national innovation policies constitute an integrated approach to mainstream innovation across society and the economy. These policies are embedded in a network of key actors and institutions. Central to the country's innovation policies is the Philippines' Innovation Act (Republic Act No. 11293; Supreme Court E-Library, 2019). Passed in 2019, the Act enshrines the promotion of a culture of strategic planning and innovation as well as the creation, dissemination, and utilization of knowledge for sustainable economic and social development. Section 3 of the Act defines innovation as "the creation of new ideas that results in the development of new or improved policies, products, processes, or services which are then spread or transferred across the market" (Supreme Court E-Library, 2019). Philippine policy holds that innovation starts with a robust pool of skilled, talented, and creative people from educational institutions, private organizations, government agencies, and local government units (LGUs) responsible for stimulating innovation literacy and skill development for the Filipino workforce and entrepreneurs, including women and youth.

The Philippine Innovation Act (Republic Act No. 11293) established the National Innovation Council (NIC), the country's apex policymaker, and a coordinating body chaired by the President and vice chaired by the Secretary of the Department of Economy, Planning, and Development (DEPDev). The NIC is composed of cabinet-level officials from critical government agencies, such as the Department of Science and Technology (DOST) and the Department of Agriculture (DA). It also includes representatives from the business sector, academia, and scientific community, ensuring multisectoral representation. The NIC Secretariat, housed within DEPDev, provides support for strategic planning, fund management, and stakeholder engagement.

The NIC led to the development of the National Innovation Agenda and Strategy Document (NIASD), a 10-year roadmap for identifying strategic goals and crosscutting innovation priorities. The NIASD aligns national innovation efforts with long-term development goals, guiding not only the government but also the wider innovation ecosystem in implementing innovation and research and development (R&D) programs. This broader innovation ecosystem comprises government agencies such as the DOST and its sectoral councils, the Department of Trade and Industry, the DA, the Department of Energy, and LGUs. These agencies work with research and higher education institutions and R&D organizations (RDOs), which provide the human capital, research base, and infrastructure necessary for scientific exploration and technological creation. Private businesses, enterprises (including micro-, small-, and medium-sized enterprises or MSMEs), and startups play a key role in innovation in the market, typically through the facilitation of intermediaries such as innovation hubs, technology transfer centers, regional inclusive innovation centers (RIICs), and

science parks. Other actors in this ecosystem include financial institutions that provide capital and various stakeholder groups that provide feedback on societal needs.

Another critical framework supporting innovation in the Philippines is the Harmonized National R&D Agenda (HNRDA), which is regularly updated by the DOST and the National Research Council of the Philippines to ensure that government R&D investments align with national priorities in health, agriculture, industry, and energy, among others. The HNRDA nurtures an environment for knowledge spillovers and innovation that directly supports NIASD and the nation's broader vision. Additionally, the Philippine Development Plan weaves innovation into sectoral strategies in education, industry, agricultural transformation, digitalization, and disaster resilience as a crosscutting theme, thereby ensuring thematic coherence and synergy at all levels. These strategies are operationalized through mechanisms such as the National Inclusive Innovation Initiative, RIICs, government innovation funds, and MSME support networks, fostering collaboration and capacity across regions and sectors.

DOST is at the helm of science, technology and innovation in the Philippines. Guided by strategic foresight initiatives such as Pagtanaw 2050 (Outlook 2050 in English; National Academy of Science and Technology, 2021), the DOST embraces a systemic perspective on innovation that transcends the development of new technologies to encompass the transformation of governance, processes, and institutional cultures across all sectors. Consequently, innovation is not operationalized solely through invention, but through the intentional reshaping of organizations, risk management frameworks, and collaborative mechanisms that foster adaptability and resilience. As this broad perspective on innovation becomes mainstream, governments, academia, private enterprises, and civil society are increasingly being called upon to collectively drive, scale, and sustain innovation. This has resulted in wide-ranging foresight and planning efforts in the Philippines, cultivating a culture of collaboration and forward thinking in all societal sectors.

The DOST designated Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD) as its lead agency for steering, coordinating, and evaluating R&D efforts in the agriculture, aquatic, and natural resources (AANR) sector. PCAARRD plays a central role in enabling public sector innovation by formulating science- and technology-based policies, strategic plans, and national R&D agendas in response to the most pressing needs and future opportunities in the AANR sector. It oversees a nationwide network of research consortia and centers, facilitating knowledge sharing, effective resource allocation, and policy coherence across diverse regions and institutions (Manzano, 2025). Through direct funding and resource mobilization, the PCAARRD supports both foundational and applied research, technology development, and extension projects. It invests heavily in building research infrastructure such as state-of-the-art laboratories and digital platforms, as well as strengthening human capital to ensure resilience and leadership in the public research sector. By promoting collaborative, multidisciplinary partnerships among universities, research centers, government agencies, and local stakeholders, the PCAARRD's consortia mechanism fosters innovation across disciplines and regions. The PCAARRD also ensures that scientific advances and new technologies reach intended users, including farmers, fishermen, policymakers, and local planners, through technology transfer, extension activities, and communication initiatives. The PCAARRD's support for capability-building programs and partnerships expands access to advanced technologies and empowers communities to adopt best practices (Mananghaya, 2024). It also champions the assessment of the research impact, policy analysis, and advocacy to demonstrate the broader socioeconomic value of R&D investment.

By integrating foresight and adaptive planning into its strategic processes, the PCAARRD aims to anticipate future challenges, build sectoral resilience, and cultivate a sustained culture of innovation, learning, and responsiveness throughout the public sector.

ANALYSIS: TURNING INNOVATIONS INTO OUTCOMES

The Philippine AANR sector is undergoing a strategic shift toward a more hybrid capacity-building system based on data analytics for evidence-driven policymaking. Based on the principle that robust data analytics underpin evidence-based policymaking, PCAARRD has initiated a network of regional analytics centers and thematic laboratories designed to democratize access to analytical tools, research capacity, and science-informed decision support. This decentralized web of regionally clustered data analytics centers and domain-focused laboratories collectively forms an integrated policy innovation ecosystem under the PoliSiyensya framework. Through this system, analytics and policy innovation become mainstream in AANR research and governance, enabling regional institutions and national agencies to generate context-specific evidence, co-create policies, and sustain a culture of anticipatory and inclusive governance.

Hybrid Approach to Data Analytics Capacity Development

Mainstreaming data analytics into AANR socioeconomic research underpins evidence-based policymaking for sectoral development and the promotion of accountability in public R&D investments. Defined as the "ability to process, analyze, and transform data to detect patterns, find useful insights, and support decision making" (Wu et al., 2019, p. 4863), analytics capabilities are the focus of capacity building and other activities of recent institutional innovations that promote evidence-based decision-making in the public sector.

Through its Socio-Economics Research Division (SERD), PCAARRD has actively supported evidence-based policymaking by building research and data analytics capacity, fostering collaboration, and mentoring state universities and colleges (SUCs), as well as other RDOs in the Philippines. SERD initiatives have led to the establishment and continued support of a decentralized network of regional data analytics centers designed to empower SUCs and RDOs to generate region-specific evidence and actively contribute to national policy dialogues.

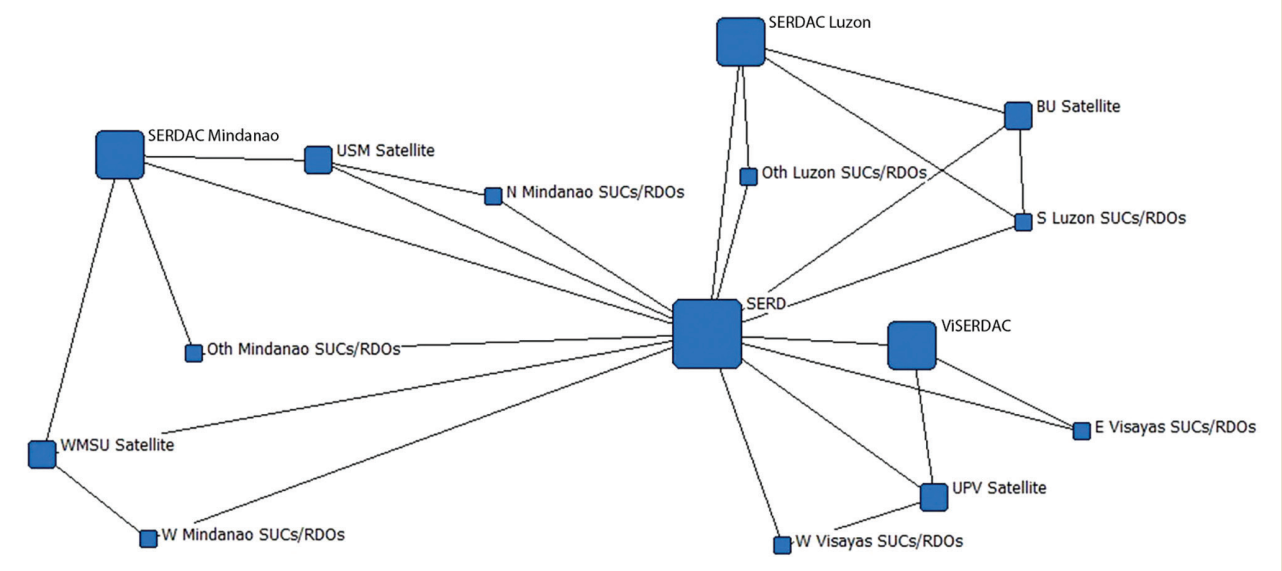
These regionally clustered centers did not replace the SERD's direct capacity-building functions. Instead, they reinforce centralized efforts through regionally focused capacity-building and data analytics. Figure 1 illustrates this hybrid network, which is still centered on SERD, but also exhibits multiple institutional units performing similar yet distinct roles, thereby forming a decentralized system that complements and strengthens national-level initiatives. Decentralizing data analytics ensures that expertise, tools, and actionable insights are available at the regional and local levels rather than being concentrated in national agencies or urban centers. This approach has enabled more context-specific research, faster responses to local development needs, and greater inclusivity in evidence-based policy making.

Policy Innovation Ecosystem

By 2025, data analytics capacity building and practice will become deeply embedded within an interconnected system of institutional units, collectively known as the "policy innovation ecosystem." This ecosystem comprises a network of laboratories and centers dedicated to strengthening the capacity for evidence-based policy development. As Figure 2 shows, the Philippine policy innovation ecosystem encompasses data analytics centers already operating

FIGURE 1

HYBRID DATA ANALYTICS CAPABILITY DEVELOPMENT AND PRACTICE NETWORK.



Source: NetDraw output is based on official project documents (Orden et al., 2019, 2022; Narvaez & Gamorez, 2023).
Note: BU Satellite, Bicol University Satellite Socio-Economic Research and Data Analytics Center; E Visayas SUCs/RDOs, Eastern Visayas-based state universities and colleges and R&D organizations; N Mindanao SUCs/RDOs, Northern Mindanao-based state universities and colleges and R&D organizations; Oth Luzon SUCs/RDOs, other Luzon based-state universities and colleges and R&D organizations; Oth Mindanao SUCs/RDOs, other Mindanao-based state universities and colleges and R&D organizations; R&D, research and development; S Luzon SUCs/RDOs, Southern Luzon-based state universities and colleges and R&D organizations; SERD, Socio-Economics Research Division; SERDAC Luzon, Socio-Economic Research and Data Analytics Center, Luzon; SERDAC Mindanao, Socio-Economic Research and Data Analytics Center, Mindanao; UPV Satellite, University of the Philippines Visayas Satellite Socio-Economic Research and Data Analytics Center; USM Satellite, University of Southern Mindanao Satellite Socio-Economic Research and Data Analytics Center; ViSERDAC, Visayas Socio-Economic Research and Data Analytics Center; W Mindanao SUCs/RDOs, Western Mindanao based state universities and colleges and R&D organizations; W Visayas SUCs/RDOs, Western Visayas-based state universities and colleges and R&D organizations; WMSU Satellite, Western Mindanao State University Satellite Socio-Economic Research and Data Analytics Center.

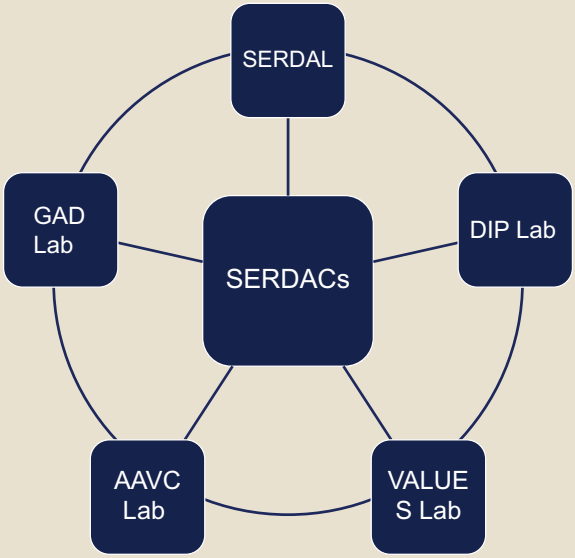
within the SERD network, alongside domain-specific institutional innovations, such as the Socio-Economics Research and Data Analytics Laboratory (SERDAL), Development Innovations and Policy Laboratory (DIP Lab), Valuation and Accounting of Ecosystem Services Laboratory (VALUES Lab), the Agri-Aqua Value Chains Laboratory (AAVC Lab), and the recently established Gender and Development Laboratory (GAD Lab).

These laboratories serve as the critical links between science and policymaking. They are guided by the PoliSiyensya framework (PCAARRD's umbrella program), which integrates policy analysis and advocacy initiatives. Drawing on best practices from global innovation systems, PoliSiyensya advances an adaptive policy mix approach (Howoldt, 2024), balancing direct innovation support with mechanisms for collaboration, training, standard setting, and knowledge brokerage. Within this ecosystem, learning and practice across data analytics centers are enriched by the technical expertise and programmatic guidance of laboratories.

Each laboratory has distinct and complementary ecosystem capacities. DIP Lab strengthens the interface between research and public policy by providing training in policy analysis, database development, and policy design. SERDAL supports data-driven research by offering technical assistance and specialized training in commodity data analytics. The VALUES Lab enhances capacities for ecosystem valuation and sustainable resource management, whereas the AAVC Lab

FIGURE 2

INSTITUTIONAL INNOVATIONS IN THE POLICY INNOVATION ECOSYSTEM.



Source: Created by the author based on SERD (2025).
Note: AAVC Lab, Agri-Aqua Value Chains Laboratory; DIP Lab, Development Innovations and Policy Laboratory; GAD Lab, Gender and Development Laboratory; SERD, Socio-Economics Research Division; SERDACs, Socioeconomic Research and Data Analytics Centers; SERDAL, Socioeconomic Research and Data Analytics Laboratory; VALUES Lab, Valuation and Accounting of Ecosystem Services Laboratory.

promotes innovation in the agricultural and aquaculture value chains to improve research, industry collaboration, and development outcomes. Meanwhile, the GAD Lab acts as a hub for gender-responsive research, innovation, and capacity-building.

The synergy between these laboratories, data analytics centers, and the broader PoliSiyensya initiative marks a distinct paradigm shift in how science, technology, and innovation inform public policy in the Philippines. Sustained collaboration, advanced analytics, and a culture of evidence-based decision-making are cultivating an enabling environment for adaptive forward-looking policy development. This evolving ecosystem enables the translation of research insights into actionable developmental outcomes.

Impacts of Embedded Institutional Innovations

Across diverse contexts, the literature consistently shows that institutional innovations have the greatest impact when embedded within broader national or sectoral innovation systems (Echeverría, 2021; OECD, 2019). Within such ecosystems, mechanisms such as interorganizational collaboration, governance alignment, and shared data frameworks reinforce one another to advance development outcomes, particularly in the AANR sector.

In the Philippines, the proliferation of data analytics centers and laboratories reflects a strategic commitment to strengthen analytical capacity and evidence-based policymaking. These institutions combine data infrastructure, human resource development, and analytical support to promote the

generation and application of context-specific evidence (Howlett, 2009). The generated insights inform the design of targeted and adaptive policy measures that respond to real-world sectoral requirements.

Regionally clustered data analytics centers act as interconnected nodes that link research, governance, and practices. By anchoring knowledge creation to local realities and continuously engaging stakeholders, these centers build ownership and adaptive capacity, both of which are key to effective, inclusive, and sustainable policy outcomes. Their networked structure facilitates technology diffusion, knowledge exchange, and entrepreneurial growth, while iterative learning and feedback systems cultivate responsiveness and innovation at the institutional level (Laatsit, 2019).

Given the inherently networked nature of innovation systems (Granstrand & Holgersson, 2020), collaboration within a policy innovation ecosystem often coexists with competition, particularly when mandates and expertise overlap. Understanding these dynamics through the lens of embeddedness provides insights into the evolution and complementarity of institutional innovations.

Complementary mechanisms such as systematic training, harmonized data repositories, and inclusive governance ensure that research outputs inform decisions at multiple levels. These mechanisms address both market failures (e.g., underinvestment in R&D) and systemic failures (e.g., knowledge fragmentation and limited data interoperability), enabling efficient flows of data, expertise, and resources across the innovation landscape. High-quality, interoperable, and real-time data, supported by strong governance and analytical capacity, underpin effective policy support (Hussein, et al., 2025). From panel datasets and innovative surveys to citizen science, enhanced data management strengthens monitoring and deepens the understanding of development outcomes (Carletto, 2021).

Despite ongoing challenges in data integration, quality, and equitable access, adaptive management and collaborative reforms continue to advance frameworks for data valuation, longitudinal assessment, and institutional partnerships (Development Academy of the Philippines, 2025; Lim et al., 2018). Together, these efforts sustain knowledge-driven policy innovation for AANR sector development in the Philippines.

CASE 1: SOCIO-ECONOMIC RESEARCH AND DATA ANALYTICS CENTERS (SERDACS)

SERDACs represent a transformative model of institutional innovation in the Philippines, specifically designed to address critical gaps in research, analysis, and policy development in the AANR sector. Embedded within major universities and supported by national and regional consortia, these centers harness advanced analytics tools, digital and physical infrastructures, and expert-led training to cultivate a robust, data-driven environment for research and decision-making. As responsive multilevel hubs with collaborative networks, SERDACs foster interdisciplinary learning, support government agencies and local planners, and provide mainstream, evidence-informed solutions for sustainable development. By bridging the institutional and technical divides, SERDACs redefine how research capacity, policy relevance, and sectoral innovation are achieved in the Philippines.

SERDACs as Innovation Hubs

The SERDACs provide a modern and scalable solution to the pressing need for AANR research in the Philippines. These centers strengthen the country's research infrastructure and capacity building by integrating advanced analytical tools, including licensed analytical software and up-to-date hardware, with access to journals and expert-designed training modules. These hubs operate in both physical and digital spaces and promote interdisciplinary innovation and practical learning among faculty members, students, planners, and multiple stakeholders.

SERDACs offer a wide range of services, from data analysis and consultancy to managing socioeconomic datasets and providing hands-on training in analytics, econometrics, and impact evaluation. Tailored programs support government agencies, LGUs, and the research community, ensuring a sustained technical capacity for evidence-based planning and policy.

Structural Improvements

SERDACs have institutionalized socioeconomic research in universities and consortia, evolving beyond fixed-term projects to become long-term platforms. By identifying focal persons and cultivating expert networks within each host institution, they centralize and strengthen analytical resources, foster effective collaboration, and ensure continuity in policy support and extension work. Centralized, sustainable structures facilitate technology scaling and deeper integration in academia and research.

Process Enhancements

Operationally, SERDACs streamline access to the latest analytics tools and develop detailed operational manuals, data-sharing protocols, and e-learning platforms tailored to regional contexts. Training and capacity building are delivered via adaptive modules, with regular needs assessments ensuring relevance to evolving sector demands. Both in-person and virtual programs were available, making the system highly adaptable.

Outcome Improvements

As regional knowledge hubs, the SERDACs increase research productivity and quality. Their programs train thousands of individuals, provide access to socioeconomic databases, and produce policy briefs and technical evaluations that directly inform local and national planning and development efforts. Support for regional researchers and funding sustainability have resulted in evidence-based approaches becoming firmly embedded in public sector decision making.

Contextual Factors

SERDACs emerged in response to urgent national, institutional, and socioeconomic needs for stronger data-driven decision-making in the AANR. Historically, universities and consortia lacked a modern research infrastructure, which constrained their analytical capacity at the local level. The growing demand for technical support and the need to bridge institutional gaps have driven SERDACs to democratize analytical tools and expertise both regionally and beyond.

Stakeholder Ecosystem

SERDACs are organized nationally by DOST-PCAARRD and implemented by leading universities across Luzon, Visayas, and Mindanao. Each regional center anchors localized efforts: SERDAC Luzon at Central Luzon State University collaborates with a satellite center at Bicol University; Visayas SERDAC (ViSERDAC) at Visayas State University partners with the University of the Philippines Visayas; and SERDAC Mindanao at the University of Southeastern Philippines works with satellite

centers at Mindanao State University and Western Mindanao State University. These satellite centers extend access to data analytics facilities for state universities and RDOs in remote areas.

Regional consortia and collaborating partners (e.g., the Central Luzon Agriculture and Aquatic Resources Research and Development Consortium; Visayas Consortium for Agriculture, Aquatic and Natural Resources Program; and Southern Mindanao Agriculture, Aquatic and Natural Resources Research and Development Consortium), alongside agencies such as the DA and Philippine Rice Research Institute, ensure harmonized implementation, local relevance, and integration within regional innovation systems. Project leaders and multidisciplinary teams provide expert analytical services, training, and collaborative research support for policymakers, planners, researchers, and extension workers. Through these coordinated efforts, SERDACs can strengthen their regional analytical capacity and foster inclusive data-driven policy development.

Success Factors

The success of SERDACs is rooted in strong financial support from DOST-PCAARRD, which co-created the concept of socioeconomic data analytics centers with SUC hosts. SERDACs present a networked and inclusive innovation model that sustains the cooperation of partner institutions. SERDACs engage closely with the regional consortia of SUCs and RDOs, strengthening the extent and depth of their reach in their respective regions. The success of these data analytics centers lies in their ability to provide locally tailored capacity building, foster a culture of data-driven policymaking, and secure strong organizational engagement from the host university, supported by the strategic direction of PCAARRD.

Conclusion

SERDACs exemplify the potential of targeted institutional innovation to reshape research and policy capacities nationwide. The SERDACs are creating a robust, inclusive, and adaptive foundation for evidence-based policy innovation in the Philippine AANR sector by embedding modern analytical infrastructure, expert networks, and scalable training in established consortia and universities.

CASE 2: SERDAL

As data-driven decision making has gained traction in agricultural and natural resource development, SERDAL was conceived at the University of the Philippines as a complementary institutional innovation to SERDACs. Built on a partnership between the College of Economics and Management of the University of the Philippines, Los Baños (CEM-UPLB) and DOST-PCAARRD, SERDAL harnesses applied economics and management research infrastructure, expert-led analytics, and targeted training to address complex socioeconomic challenges in the AANR sector. By combining state-of-the-art facilities with a network of specialists and collaborators, SERDAL serves as a hub for commodity analytics research and policy analysis. It is also considered a model for how academic institutions can catalyze AANR development on regional and national scales.

SERDAL as an Innovation Hub

SERDAL was established at CEM-UPLB with strategic support from DOST-PCAARRD. This is an institutional and research infrastructure innovation for socioeconomic research and commodity analytics. The core mission is to support evidence-based policy development in the AANR sector.

SERDAL provides state-of-the-art facilities, giving researchers, faculty, students, and partners access to advanced computers, licensed software (e.g., SPSS, STATA, R, GAMS, EViews, and

Minitab), and online academic resources. The laboratory's infrastructure was designed for both rigorous data analysis and the delivery of specialized training programs. Its poverty-focused analytics (e.g., rice, garlic, milkfish, swine, corn, bamboo, and seaweed) address food security and industry needs, making SERDAL highly relevant and practical.

SERDAL manages a data portal for socioeconomic and demographic information, thereby enhancing research access and policy formulation. It coordinates data harmonization and provides technical support as a strategic partner for SERDACs and satellite centers and leads and coordinates data harmonization and provides technical support. SERDAL's policy advisory reach spans the entire country. It operates at multiple levels through national policy and funding partnerships with DOST-PCAARRD; as a sustained academic component within UPLB; and as a node in a constellation of research centers, thereby contributing to broader development goals.

Structural Improvements

SERDAL provides a centralized digital and physical space, ensuring that researchers, students, and trainers can utilize the full suite of resources and software. Institutionalized as a unit under the Dean's Office at CEM-UPLB, it aligns with the college's institutional research priorities for sustainability. SERDAL's expansive network includes commodity specialists and data analysts who strengthen internal operations and provide expertise to external partners. Strategic linkages between regional SERDACs and other agencies enhance collaboration, data sharing, and interdisciplinary research.

Process Enhancements

To support its mission, SERDAL established operational protocols through handbooks and manuals that ensure consistency in laboratory use, service requests, data management, and training. Specialized training modules and workshops covering software, econometrics, and commodity analytics have been tailored to evolving needs. The adoption of the Comprehensive Knowledge Archive Network (CKAN) platform has streamlined database management and sharing, benefiting both the main laboratory and regional partners. Online platforms for service requests, satisfaction monitoring, and expert registration optimize the workflow and responsiveness of all users.

Outcome Improvements

These structural and process enhancements transformed the quality and accessibility of SERDAL research. Hundreds of faculty members, researchers, and students have been trained in advanced analytics, with SERDAL earning high ratings for its workshops and training programs. The CKAN database offers a resource for standardized, high-quality datasets that are accessible nationwide, whereas technical support to regional SERDACs ensures quality across the research network. Ultimately, SERDAL operations were designed for efficiency, transparency, and effectiveness, fostering better research outcomes and more informed policies across the AANR spectrum.

Contextual Factors

SERDAL was conceived in response to the recognized need for data-driven governance and advanced research capacity in agriculture and natural resources. UPLB's role as a national university aligned with the mandate to lead this shift, capitalizing on existing strengths in multisectoral research and education. Persistent gaps in analytical infrastructure, urgent demands for evidence-based policy, and lasting disruptions brought about by the coronavirus disease 2019 pandemic have accelerated the call for a resilient, flexible research laboratory. To answer this call, SERDAL integrates these attributes from design to implementation.

Stakeholder Ecosystem

SERDAL stakeholder ecosystem is orchestrated by CEM-UPLB as a technical lead with oversight and support from DOST-PCAARRD to guarantee national alignment and sustainability. Key collaborations include regional SERDACs; satellite centers at universities across Luzon, Visayas, and Mindanao; the UPLB library; and expert commodity specialists in and around UPLB. These collaborations allow SERDAL to serve a diverse user base ranging from researchers and analysts to policymakers and extension workers across governance levels. The project was guided by senior academics and supported by a team of analysts and specialist consultants, ensuring both technical depth and broad outreach.

Success Factors

SERDAL's achievements are due to sustained funding support from DOST-PCAARRD, which co-developed the laboratory concept in partnership with UPLB. SERDAL also benefits from UPLB's established credibility in agricultural and applied economics, which attracts buy-in from target partners. It also benefited from strategic alignment with the college's research priorities. SERDAL's focus on hands-on training and capacity building, combined with poverty-specific analytics, bridges practical research needs with sectoral policy demands. Robust monitoring and evaluation by DOST-PCAARRD and UPLB and collaboration across institutions ensure SERDAL's consistent delivery of outputs.

Conclusion

SERDAL exemplifies how institutional innovation can integrate advanced analytics, targeted training, and robust stakeholder collaboration to address pressing sectoral challenges. It presents a replicable model for academic institutions to leverage their expertise in designing capacity development interventions. Its success underscores the importance of sustained investment in infrastructure, continuous capacity building, and strategic partnerships.

CASE 3: DIP LAB

DIP Lab at UPLB is a pioneering policy laboratory dedicated to transforming how research drives public decision-making in the AANR sector. By establishing both a physical and digital hub that integrates advanced policy data tools, multilevel collaborations, and comprehensive capacity building, DIP Lab reimagines the process of bridging research with policy action. Supported by DOST-PCAARRD and rooted within the academic leadership of UPLB, DIP Lab leverages inclusive partnerships, interactive learning platforms, and evidence-driven advocacy to create a replicable model for innovative, adaptive, and participatory policymaking in the Philippines.

DIP Lab as an Innovation Hub

Established within the Center for Strategic Planning and Policy Studies at the College of Public Affairs and Development at UPLB, DIP Lab was the first dedicated policy laboratory for AANR in the Philippines. Supported by DOST-PCAARRD, DIP Lab addresses the persistent disconnection between research and policy in the AANR sector by promoting inclusive, evidence-based, and collaborative policy development.

As both a physical and a digital hub, DIP Lab is equipped with modern facilities and a policy portal hosting over 600 documents. It offers a dynamic suite of capacity-building activities, including training in policy analysis, strategic planning, monitoring and evaluation, and policy advocacy skills, while engaging stakeholders through interactive formats, such as policy hackathons,

roundtable discussions, and other policy design activities. The lab was designed to convert robust research evidence into actionable solutions, amplifying its impact on public policy, government R&D, education, and extension services.

DIP Lab collaborates closely with policy and research centers such as SERDAL and SERDACs. This networked approach supports policy transformation at national, regional, and local scales and sustains a culture of evidence-based innovation across governments and research bodies.

Structural Improvements

DIP Lab's structural investments include a dedicated facility that provides researchers, extension practitioners, and trainees with access to modern computing technology, licensed software, and communication tools in a collaborative learning environment. Central to its mission is the CKAN-based open-access policy data portal, which enables systematic curation and sharing of policy documents and research outputs. Institutional linkages were fortified through partnerships with SERDAL, SERDACs, and other UPLB laboratories. DIP Lab forms expert teams among academics, policymakers, and community groups for policy analysis and advocacy, ensuring that its work is multidisciplinary and impactful.

Process Enhancements

DIP Lab's process improvements are rooted in responsive capacity building; delivering tailored training modules and workshops for policy analysis, monitoring, and evaluation; and soft-skills development tailored to stakeholder needs. The laboratory convenes policy hackathons, roundtables and simulation games for collaborative policy design and stakeholder validation. DIP Lab extends technical support to DOST-PCAARRD-funded projects, enhancing policy advocacy, consultation, and brief writing. Digital engagement is a priority, with DIP Lab using social media, podcasts, and infographics to disseminate policy materials and expand its reach. Regular feedback, vulnerability assessments, and system upgrades ensure that DIP Lab portal and website remain secure and user friendly.

Outcome Improvements

Since its founding, DIP Lab has driven widespread capacity building in the Philippines, training over 470 people across 157 institutions, including government agencies, LGUs, SUCs, and research organizations. It has also produced policy briefs, recommendations, and advocacy materials that inform decision-making in the AANR sector and contribute to broader policymaking. Collaborative events have resulted in innovative solutions for real-world issues such as watershed management. DIP Lab's provision of technical support for research projects strengthens advocacy and communication, while its institutionalization within UPLB and integration into the national innovation ecosystem ensure its lasting relevance and continued impact.

Contextual Factors

DIP Lab's work is shaped by the evolving context of evidence-based policymaking in the AANR sector. There is a recognized need to translate research evidence into development solutions, particularly in response to national and global calls for inclusive, innovative, and data-driven policies. Together, UPLB's leadership in public affairs and DOST-PCAARRD's commitment to a national network of policy and analytics centers provide a strong foundation for DIP Lab's work. Persistent gaps in regional and local policy capacity and advocacy highlight the need for DIP Labs' collaborative, multistakeholder methods. Addressing increasingly complex development challenges, such as food security and environmental resilience, demands broad participation and strong partnerships.

Stakeholder Ecosystem

DIP Lab partners with institutions such as SERDAL, regional SERDACs, DOST-PCAARRD consortia, local governments, and research organizations, building networks for knowledge exchange and policy development. This collaboration is extended to government agencies, academic experts, community groups, and private stakeholders. Leadership includes faculty members and university researchers, with a multidisciplinary team covering all aspects of the lab work. DIP Lab also manages a growing network of expert mentors from various institutions to provide expertise in policy analysis, advocacy, and communication, thereby establishing a broad beneficiary base ranging from policy researchers to community stakeholders.

Success Factors

DIP Lab is a pioneering policy laboratory model for the Philippine AANR sector, and arguably the country as a whole. Indeed, it has established its role in bridging research and policymaking through continuous capacity building in policy analysis, digital innovation, and stakeholder collaboration. A fundamental driver of this success is the sustained funding support from DOST-PCAARRD, with DIP Lab's vision closely aligned with DOST-PCAARRD's policy framework. Institutional support from UPLB has guaranteed the continuity and credibility of DIP Lab, as it operates as an approved and permanent unit of the university. DIP Lab's partnerships and expert networks have also ensured the consistent provision of high-quality training, research advice, and best-practice mentoring. The result has been substantial capacity building, actionable policy outputs, and sustained operations, making DIP Lab a benchmark for policy innovation and capacity building in the Philippines.

Conclusion

The experience of DIP Lab demonstrates the powerful potential of targeted institutional innovation and multilevel collaboration to bridge research and policy. By integrating structural, process, and stakeholder improvements and fostering a culture of open, adaptive, and evidence-based policymaking, DIP Lab offers a replicable model to advance complex sectoral policy reforms aimed at promoting and sustaining development.

INSTITUTIONAL INNOVATIONS FOR EVIDENCE-BASED POLICYMAKING AND GOVERNANCE

Institutional innovations such as SERDACs, SERDAL, and DIP Lab are commonly linked to significant improvements in evidence-based policymaking and governance because they integrate several high-impact practices and structures into the heart of research and decision-making systems.

The creation of centralized data analytics hubs provides a foundation for generating, curating, and sharing high-quality research that directly informs policy actions. These hubs ensure that policymakers, researchers, and stakeholders can systematically access and utilize robust evidence when responding to pressing sectoral challenges or designing targeted interventions. By embedding these capabilities within universities and research consortia, such innovations establish standards for research methodology and data management, making evidence a routine part of governance.

Another essential feature of the innovation cases presented in this study is the establishment of networked multilevel collaboration structures. Through strong partnerships that connect universities, government bodies, local units, and the private sector, these innovations dismantle silos and foster the co-production and validation of knowledge. This inclusive approach ensures

that the research is grounded in practical realities and co-owned by those who will ultimately use it for policy or planning. Regular capacity-building programs, including specialized training, workshops, and technical support, equip a growing pool of policymakers and practitioners with the analytical and evaluative skills needed for continuous improvement in policy design and implementation.

These models are characterized by the institutionalization of continuous learning and feedback mechanisms. Open data platforms, policy hackathons, participatory workshops, and stakeholder consultations have created channels for ongoing evaluations, adaptations, and knowledge exchange. In addition to improving transparency and accountability, these processes make research and policy cycles more responsive to new challenges and emerging data. By embedding these processes in standard practice, institutional innovations lay the groundwork for more adaptive and resilient public-sector governance.

High-quality, open, and interoperable data systems supported by strong governance and robust analytical capacity fundamentally underpin effective policy support and informed public decision-making. As shown in Table 1, the institutional innovation cases of the SERDACs, SERDAL, and DIP Lab in the Philippine AANR sector illustrate the practical organizational pathways required to advance these goals.

Rather than relying on a centralized framework, these cases demonstrate that a decentralized research infrastructure can successfully drive locally relevant data practices and policy analytics. This model thrives on networked governance, which is characterized by strong public institutional support, sustained funding, and stakeholder buy-in within regional consortia and policy innovation systems. Building this widespread analytical capacity requires a heavy investment in professional development, as evidenced by the training of over 3,000 researchers across the three facilities, coupled with open data infrastructures such as dedicated websites and policy portals to ensure that information remains accessible. Ultimately, this continuous integration of empirical evidence into public governance is achieved through tangible and actionable outputs, including policy briefs, working papers, and direct technical advisory services for institutional clients and government agencies.

TABLE 1

COMPARATIVE SYNTHESIS OF THE INSTITUTIONAL INNOVATION CASES IN THE PHILIPPINE AANR SECTOR.

Dimension	SERDACs	SERDAL	DIP Lab
Innovation type	Decentralized data analytics capacity building and research coordination	Socioeconomic- and management-focused capacity building and research coordination	Policy analytics and advocacy capacity building and research coordination
Primary goal	Enhanced capacities and locally relevant data analytics practice	Enhanced capacities in socioeconomic and management research	Enhanced capacities in policy analysis and research
Level of government	Higher education and R&D organizations	Higher education and R&D organizations	Higher education and R&D organizations

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Dimension	SERDACs	SERDAL	DIP Lab
Main success factor	Strong public institutional support, sustained funding support, geographic reach, and stakeholder buy-in with regional consortia	Strong public institutional support, sustained funding support, credibility in agricultural and applied economics, and strategic alignment of organizational research priorities	Strong public institutional support, sustained funding support, niche expertise area, stakeholder buy-in, and strong network within and around the policy innovation system
Outputs	• 2,222 researchers trained • 450 clients provided with technical advice services	• 344 researchers trained • Seven working papers on commodity-specific analytics • One website/portal	• 470 researchers trained • One policy data portal • Seven policy briefs • 17 infographics • One podcast program • Six policy advocacies supported • 11 agencies provided with technical advice services

Source: De Castro et al. (2025), Elauria et al. (2021), Orden et al. (2019), Orden et al. (2022), and Lapitan (2024).
Note: DIP Lab, Development Innovations and Policy Laboratory; R&D, research and development; SERDACs, Socio-Economic Research and Data Analytics Centers; SERDAL, Socio-Economics Research and Data Analytics Laboratory.

CONTEXTUAL DRIVERS OF PRODUCTIVITY AND INNOVATION

In examining the cases of SERDACs, SERDAL, and DIP Lab, several contextual factors emerged as particularly influential in driving improved productivity and innovation in the Philippine AANR sector.

Economic factors include the increasing recognition of the link between policy innovations and productivity gains in the AANR regions, improvements in perceptions of investments in research infrastructure in relation to evidence-based policymaking, and the availability of sustained funding from national agencies such as DOST-PCAARRD. These factors enabled the creation of research facilities, facilitated access to advanced digital tools, and fostered support for capacity-building activities, allowing local researchers and policy actors to work more efficiently and with greater impact.

The establishment of a decentralized network model of data analytics centers and their satellites embedded across Luzon, Visayas, and Mindanao ensures that innovation and research support reaches diverse and sometimes underserved regions. By tailoring services and training to local needs and realities, these centers address both urban and rural productivity gaps, encourage region-specific solutions, and broaden participation in research and data analysis at the grassroots level. Interactions with a broader network of domain-specific laboratories have further enriched the scope and impact of their work.

Political factors play a fundamental role in this process. In accordance with its policy framework for promoting evidence-based policy in the Philippines, DOST-PCAARRD has been at the helm of these institutional innovations, cultivating the enabling environment necessary for them to thrive. In this respect, the political will to sustain funding, harmonize national and regional efforts, and

embed evidence use in policymaking ensures that these innovations are both scalable and sustained through different policy cycles.

Social factors are also crucial. There is a rising demand for research-informed policies and heightened expectations for transparency and stakeholder engagement. Efforts to foster inclusivity through participatory training and other engagements not only embed new skills and knowledge in target communities, but also cultivate a culture that values collaboration, data sharing, and continuous learning. Pandemic-related disruptions have further accelerated the adoption of flexible digital mechanisms, such as blended learning and online policy data portals, enhancing both social resilience and institutional adaptability.

Together, these contextual factors, namely economic investment, geographic reach, political buy-in, and social engagement, have laid the groundwork for improved productivity and sustained innovation in public sector research and policymaking in the Philippines.

KEY DRIVERS OF IMPROVEMENTS IN PUBLIC SECTOR INNOVATION

The key drivers of improvements in public sector innovation, as demonstrated by the SERDACs, SERDAL, and DIP Lab, include the following interconnected factors.

First, strong institutional leadership and sustained funding, primarily from DOST-PCAARRD, provided an initial vision, resources, and policy alignment for these institutional innovations. This leadership anchors public sector innovation in national, regional, and local systems, and ensures the continuation and scaling of initiatives in the long term.

Second, the establishment of a robust research infrastructure (e.g., physical labs, digital platforms, and open-access data portals) has created a foundation for systematic knowledge generation, data analysis, and learning. These structures enhance the efficiency and quality of research and make advanced tools available to a wider network of users.

Third, a pronounced emphasis on capacity building and professional development ensures a continuous pipeline for skilled researchers, data analysts, and policy specialists. This was accomplished through the provision of expert-designed training modules, workshops, and hands-on mentorship, enabling the government and academic partners to keep pace with the evolving needs and best practices.

Fourth, collaboration is recognized as a crucial driver of innovation. Indeed, SERDACs, SERDAL, and DIP Lab are embedded within networked ecosystems that span universities, governments, consortia, regional centers, NGOs, and local stakeholders. This approach dismantles traditional silos and nurtures multidisciplinary cross-institutional partnerships, leading to more adaptive and inclusive solutions and the spread of best practices nationwide.

Finally, effective data management and a culture of learning, including the development and sharing of standardized datasets, continuous monitoring, and feedback, foster transparency, adaptability, and responsiveness to emerging challenges. These mechanisms enable a more evidence-based approach to policy and planning, ensuring that research directly informs public-sector strategies and actions.

In short, public sector innovations thrive when driven by visionary leadership, sustainable infrastructure, investment in people, collaborative networks, and systems that institutionalize learning and evidence use at scale.

FOSTERING INSTITUTIONAL INNOVATION IN AANR SECTOR POLICY AND GOVERNANCE

To foster institutional innovation, R&D institutions must adopt an integrated learning-centered approach. Sustained leadership, stable funding, and strong networks are vital to transforming research output into policy-relevant innovations. Drawing on experiences from the SERDACs, SERDAL, and DIP Lab, this report highlights the importance of leadership, infrastructure, human capital, and collaborative governance in nurturing a culture of continuous learning and systemic innovation.

As Lewis et al. (2016) argued, institutional leadership and sustained funding should be prioritized as key drivers of innovation capacity. Under the innovation in city governments framework, leadership is responsible for shaping network vitality and supports adaptive governance. In this respect, institutional leaders should apply transformational and network-oriented styles to build a shared vision and promote inter-organizational collaboration. Leadership, which integrates entrepreneurial and transformational capacities, strengthens trust, commitment, and shared ownership, all crucial for innovation in policy-driven laboratories.

According to Lundvall's (1992) national systems of innovation, public research institutions must act as pacesetters to foster learning and coordination across research landscapes. Building and maintaining physical and digital infrastructures will sustain knowledge exchange and interactive learning within the national innovation ecosystem.

According to de Vries et al. (2014), capacity building and professional development initiatives should address organizational "slack" and "absorptive capacity." In this regard, investments in adaptive training and experiential learning platforms can transform knowledge acquisition into applied innovation and enhance technical competence and institutional learning through cycles of experimentation and reflection.

Collaborative ecosystems that connect the government, academia, and industry must also be strengthened. As shown by Freeman (1995) and Lundvall (2007), multilevel innovation flourishes when internal–external networks enable shared learning and coproduction. Philippine models should continue to build trust-based boundary-spanning partnerships supported by shared governance structures to sustain effective cross-sector collaborations.

Finally, effective data management and learning culture are vital for adaptive governance. Consistent with the conclusions of de Vries et al. (2015) and Lundvall (2007), institutions should formalize feedback and evaluation systems that allow knowledge to flow among policymakers, researchers, and practitioners. The digital infrastructure should evolve into interactive platforms for evidence-based decision-making and iterative policy design.

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BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR IN APO MEMBER ECONOMIES: PRELIMINARY NATIONAL REPORT FOR SRI LANKA

EXECUTIVE SUMMARY

The public sector in Sri Lanka has adopted a wide range of innovation types, mainly IT-enabled process innovations, supplemented by product/service innovations and governance innovations. Public sector innovations include the Integrated Treasury Management Information System (ITMIS), PROMISe for e-government procurement, SWASTHA for healthcare supply chains, the State Land Information and Management System (e-SLIMS) for land administration, the Sri Lanka Unique Digital Identity (SLUDI) project, and the Citra Social Innovation Lab (Citra Lab). These initiatives reflect a high dependence on technology-driven innovation with little indication of conceptual innovation.

Most of these initiatives have improved and transformed productivity, structures, processes, and outcomes. Structural changes include improved interoperability and the use of resources through innovations such as ITMIS and PROMISe. Process changes are reflected in improved workflow, automation, and transparency. For example, by providing real-time inventory management, SWASTHA helps reduce waste and optimize supply and delivery times. The outcome changes include increased efficiency, cost-effectiveness, and improved service delivery. For instance, Suwa Seriya's emergency healthcare service has an average response time of 12 min.

Examples of notable productivity enhancements include the PROMISe, which digitized government procurement processes and eliminated corruption while streamlining the process time; the National Productivity Awards (NPA) system, an innovation for measuring sectoral productivity; and e-SLIMS, which reduced land service process times from one year to three months. Their analysis showed that process innovation is typically associated with productivity improvement, whereas product/service innovation increases accessibility, citizen trust, and convenience. Governance innovations such as SLUDI and Citra Lab are scaling agents. In Sri Lanka, conceptual innovation is rare.

The contextual factors shaping innovation in Sri Lanka include strong political leadership, economic constraints, geographical inequality, and sociocultural values. Support from high-level leadership and partnerships with donors are critical for success. Obstacles include outdated policies, a lack of research and development (R&D) expenditures, and a divide in the use of modern technologies. Major factors affecting improvement include political, bureaucratic, and leadership

vision; organizational capacity; human capital; and external comparisons. To cultivate a systemic environment of productivity and innovation, Sri Lanka must adopt a centralized innovation policy that focuses on local conditions, incorporates IT perspectives, promotes collaboration with private and third-sector organizations, modifies outdated policies, establishes R&D innovation divisions in all government departments, and nurtures a culture of creativity beyond IT innovation. Sri Lanka can also encourage innovation through ideation sessions and innovation recognition programs.

BACKGROUND

Innovation has become a strategic priority in Sri Lanka, particularly in the public sector, where it is viewed as a means of enhancing productivity, providing improved services, and addressing complex socioeconomic challenges. The Sri Lankan National Innovation Agency (NIA) has identified five primary categories of innovation: science and technology, social, ecological, service, and defense (NIA 2025). Public sector innovation is typically included within service innovation as it focuses on improving service delivery through process optimization, technology integration, and innovative practices (Wickramasinghe, 2024). In Sri Lanka, the Innovation and Entrepreneurship Strategy of 2018–2022 remains the primary national policy tool with no new policies implemented in subsequent years. However, according to the Additional Chief Innovation Officer of the NIA, there are plans to revisit and review this strategy to develop a new innovation policy for Sri Lanka (S. Panwila, personal communication, 5 December 2025). As illustrated in Figure 1, the NIA has also delineated Sri Lanka's public sector innovation value chain as comprising five key pillars: supply, management, generation, conversion, and value assessment (Dahanayaka, 2024).

As public sector innovation and digital transformation are inextricably intertwined, the National Digital Economy Strategy 2030 issued by the Ministry of Technology in 2023 is particularly relevant. The strategy outlines four core strategic initiatives: building an inclusive and resilient digital public infrastructure, promoting the broader adoption of public and private cloud services for joint governance, delivering responsive, citizen-centric services, and leveraging data and disruptive technologies to develop new forms of service delivery (Ministry of Technology, 2023).

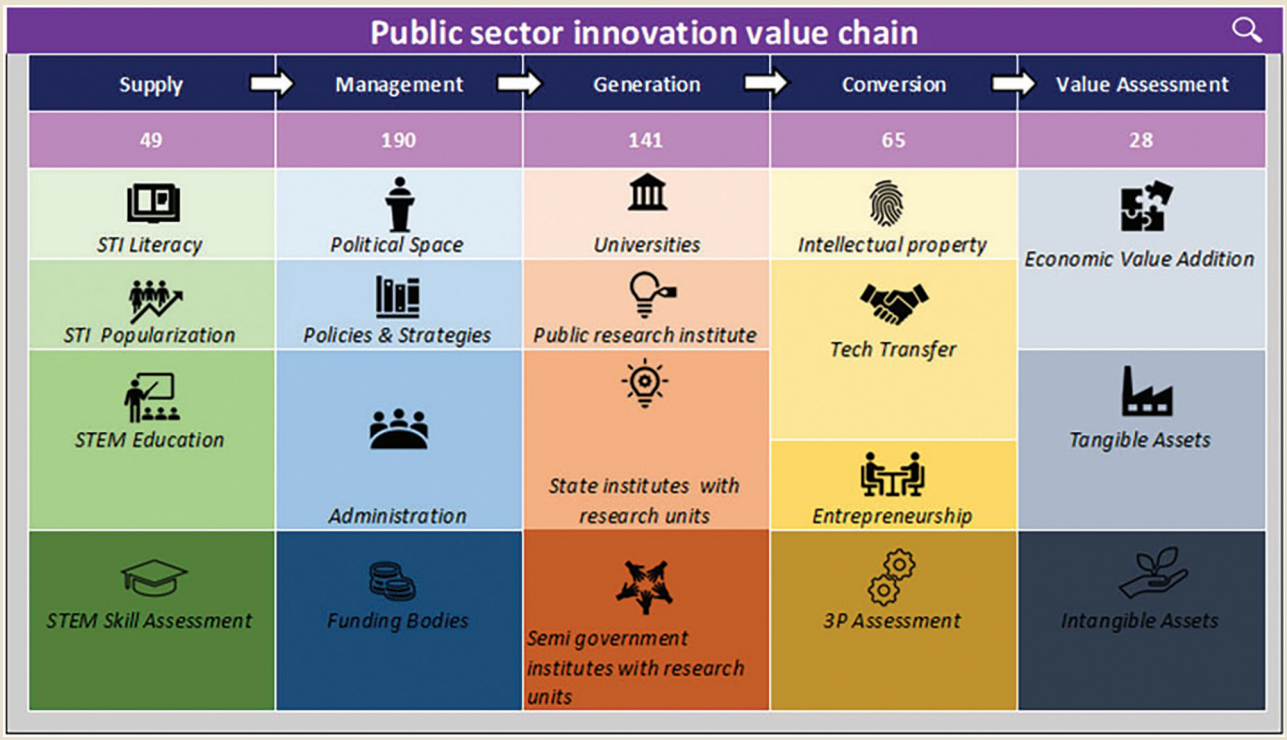
The National Digital Government Policy has been recognized as a critical framework for supporting public sector innovation. Since its introduction in 2008, the policy has been subject to multiple amendments. Although a new digital government policy has been developed, it remains at the proposal stage and has yet to move toward formal adoption or application.

With the exception of the NIA, which is tasked with innovation across different sectors, Sri Lanka has not institutionalized special public sector innovation ministries. Nevertheless, a notable initiative is the Citra Social Innovation Lab (Citra Lab), which was initiated in 2018 by the Prime Minister's Office (PMO) in collaboration with the UNDP and the Government of Sri Lanka. As the country's flagship public sector innovation project and South Asia's first social innovation lab, Citra Lab has a strategic mandate to inform national policy and spur grassroots innovation. Its approach blends co-creation and human-centered design, and its remit extends across four areas, including public and service innovation (UNDP Sri Lanka, 2025).

The Information and Communication Technology Agency (ICTA) under the Ministry of Digital Economy is a key institutional actor in public sector innovation in Sri Lanka. Sri Lanka's initiative for ICT-aided public sector innovation started with e-Sri Lanka and was introduced in 2003 (Liyanage et al., 2021). This initiative envisioned the use of digital technology to achieve social

FIGURE 1

PUBLIC SECTOR INNOVATION VALUE CHAIN INTRODUCED BY NIA.



Source: Reproduced with permission from Dahanayaka (2024).
Note: NIA, National Innovation Agency; STI, Science, Technology, Innovation; 3P, People, Planet, Profit.

integration, peacebuilding, economic development, and poverty alleviation (Alahakoon, 2022). In 2005, this vision was reaffirmed by presidential initiatives emphasizing the importance of appropriate legal, policy, and institutional frameworks for driving rapid ICT adoption. The establishment of ICTA in 2005 was an important milestone in Sri Lanka's ICT development, with ICTA's e-government program promoting transparent, client-focused, and distance-neutral service delivery. In 2026, the government decided to replace ICTA with the GovTech institute to accelerate the digital transformation process in Sri Lanka and increase its technological efficiency of the public sector.

Sri Lanka's good track record in education and public services has enabled innovation, with a literate population and healthy public university system contributing to the country's research and capability development (Aturupane, 2023). Sri Lanka's culture of citizen-led government culture, such as participatory budgeting and grassroots-level planning, is in line with contemporary models of e-participation and human-centered innovation. Foreign partnerships with organizations such as the World Bank, UNDP, and ADB have provided technical assistance, funding, and access to global best practices, thus strengthening governance innovation.

However, numerous challenges must be overcome. Implementation remains fragmented with siloed agencies resistant to cross-agency cooperation (Liyanage et al., 2019). Budget and staffing constraints hinder the scalability of innovation programs, whereas institutional rigidity and the

ICTA's reluctance to seek statutory powers to support cross-government innovation have resulted in bureaucratic resistance. Furthermore, the digital divide between rural and marginalized communities restricts equal access to ICT services in Sri Lanka (Aruppala et al., 2025; Fernando & Keppitigoda, 2024; Liyanage et al., 2019), limiting the spread and impact of innovation at the grassroots level.

Sri Lanka's national innovation system is an active, multi-stakeholder ecosystem that facilitates the country's digital transformation agenda, as reflected in post-implementation reviews of e-governance and the 2030 National Digital Economy Strategy. As the Minister of the Digital Economy, the president spearheads public sector innovation. At its core is the ICTA, which has led to the development of fundamental digital infrastructure such as the Lanka Government Network (LGN), Lanka Government Cloud (LGC), and the National Data Exchange (NDX), enabling over 850 government institutions to deliver effective citizen-focused services (Alahakoon, 2022; ICTA, 2019).

The National Digital Economy Strategy 2030 envisions digitally empowering Sri Lanka through innovation, inclusivity, and sustainable development. Key actors include government ministries and departments responsible for implementing digital services and policy reforms, such as the Ministry of Digital Economy, Ministry of Public Administration, Ministry of Science and Technology, Ministry of Education, and Department of Labour. The proposed Digital Government Agency (DigiGov) will be responsible for the technical coordination of networked governance. Other institutional supports include the Central Bank of Sri Lanka, the Data Protection Authority, and Sri Lanka CERT, each playing a pivotal role in cybersecurity, financial inclusion, and data governance. The private sector is also recognized as a vital partner in driving investment, advancing innovation, and building talent, with initiatives such as startup accelerators, fintech sandboxes, and public–private partnerships (PPPs) contributing to entrepreneurship and sector digitalization. As consumers and evaluators of digital services, citizens form the nucleus of this ecosystem, resulting in a continuous focus on enhancing digital literacy and ensuring balanced access across gender, age, and geography.

ANALYSIS OF THE RESULTS OF INNOVATIONS AND THEIR LINK TO OUTCOMES

Literature on public sector innovation in Sri Lanka highlights a sequence of projects that exemplify the new nature of digital governance and administrative reform in the country, advancing the development of a culture of innovation and productivity in the public sector. This section presents an overview of the most frequently cited innovations in Sri Lanka.

Integrated Treasury Management Information System (ITMIS)

Developed by the Ministry of Finance, ITMIS is a pillar of Sri Lanka's modernization of public financial management. It consolidates a wide range of fiscal activities in government ministries, departments, and special spending agencies (Office of the Cabinet of Ministers, 2019). ITMIS was rolled out under the Fiscal Management Efficiency Project backed by the ADB with the aim of enhancing fiscal discipline, transparency, and operational efficiency. It offers an in-depth reporting and analysis framework to facilitate evidence-based planning and the monitoring of government finances (ADB, 2021).

According to the ADB (2021), ITMIS has a broad set of modules, including budget management, impression release, receipts and payment management, payroll and debt management, cash management, general ledger and fiscal reporting, internal audit management, cadre information management, court case tracking, and asset management. These functionalities offer real-time tracking of fiscal operations and aid in interagency coordination. ITMIS also interfaces with other systems such as e-PROMISE and Sri Lanka's e-government procurement (e-GP) system for fiscal validation.

ITMIS has several built-in benefits that cumulatively enhance public financial management. Through the transition to paperless processes through the adoption of e-forms, e-registers, and automated workflows, ITMIS has eliminated manual interventions and administrative delays. Its reporting capabilities enable the generation of real-time financial reports, including trial balances and summaries of fiscal performance, fixed assets, and human resources. ITMIS also strengthens internal controls, thus improving the detection and mitigation of financial leakages and ensuring accountability. Finally, by integrating financial information among departments, the system facilitates strategic and balanced resource allocation, ensuring the optimal utilization of public funds (Asian Productivity Organization, 2024).

From the typology of innovation perspective, ITMIS is a process innovation characterized by internal administrative and technological transformation. This highlights how computer systems can revolutionize core government functions and enhance their performance and accountability. Moreover, its impact on budgetary transparency and intra-agency coordination makes ITMIS the cornerstone of Sri Lanka's digital government platforms.

PROMISe: A Sri Lankan Public Procurement Process Innovation

The Procurement Management Information System (PROMISe) is Sri Lanka's national public procurement digital platform. Developed under the leadership of the Department of Public Finance, PROMISe forms part of the country's broader public financial management reform agenda. It aims to enhance transparency, effectiveness, and accountability in the public procurement process, which was previously susceptible to inefficiencies and corruption in the past (Department of Public Finance, 2023). The system was launched under the umbrella of the Public Financial Management Strengthening Project and funded by the EU and Agence Française de Développement (AFD). Supported by the World Bank, PROMISe is undergoing phased implementation in more than 796 registered procurement organizations, including ministries, departments, and statutory boards. By 2025, more than 43,000 procurements will be processed through the platform, with more than 4,800 registered vendors actively engaged in e-GP processes through PROMISe (PROMISe, 2025).

PROMISe has significantly enhanced public procurement in Sri Lanka by facilitating transparency in the public disclosure of procurement opportunities and outcomes, minimizing information asymmetry, and promoting fair competition. Automation eliminates the need for human interaction in the procurement process, thereby reducing corruption and inefficiency. Through competitive bidding and lifecycle costing, PROMISe ensures value-of-money procurement. Automatic electronic workflows reduce transaction costs and administrative delays, increasing overall public sector procurement efficiency (National Procurement Commission, 2025). From an innovation typology perspective, PROMISe can be understood as a process innovation involving the digitization of internal administrative procedures.

National Productivity Awards (NPA) System: A Sri Lankan Public Sector Process Innovation

Sri Lanka's NPA system is a digital platform that manages the country's pre-eminent national award competition to assess organizational productivity and efficiency. The NPA is overseen by the National Productivity Secretariat (NPS), which falls under the Ministry of Industry and Entrepreneurship Development. The NPA system represents a major transformation in public sector management in Sri Lanka. NPAs were launched in 2003 and take place every two years. NPAs cover three main sectors: public, school, and manufacturing and service. The NPA aims to promote best productivity practices, connect institutional performance with national development goals, and prepare organizations for global competition through sustainable resource use.

Historically, the NPA process depended on manual application and evaluation. This approach was time consuming, prone to errors, and vulnerable to inefficiencies and biases. Thus, the launch of a web-based system in 2015 constituted a major change as it digitized key steps, including applicant registration, payment processing, and communication. Although the system was initially limited, it has been upgraded over time. By 2025, the NPA system became a fully integrated platform with a mobile application for the judging panel. Today, it serves three primary user groups: the NPS, NPA, and panel members. The system features modules to manage applicants, coordinate judgment panels, handle consultation requests, track locations, and process secure payments. Automated notifications through SMS and email improved communication.

Under the innovation framework developed by de Vries et al. (2015), the NPA system represents technological process innovation, as it involves the use of new technologies to change internal administrative procedures. By replacing manual workflows with electronic processes, the system greatly improves efficiency, transparency, and accuracy. For instance, automated scoring removes calculation mistakes that frequently occur in manual evaluations, and digital document management reduces paperwork and delays. The impact of this innovation has been demonstrated by an increasing number of NPA applicants. By 2025, the NPA system processed over 5,500 applications, demonstrating its effectiveness in handling large, complex operations. The system also improves confidentiality and security in managing the judging panel, thereby ensuring the integrity of the evaluation results.

While many public sector IT systems in Sri Lanka depend on donor funding, the NPA system was designed and funded entirely by the NPS. This reflects the NPS's strong commitment and ability to lead innovation efforts despite financial and contextual challenges. The NPA system showcases sustainable public sector process innovation that has lasted for nearly a decade. It has strengthened the NPS's role as the national authority for improving productivity and set a standard for digital transformation efforts in Sri Lanka's public administration.

Sri Lanka Unique Digital Identity (SLUDI): A Product and Governance Innovation in Sri Lanka's Digital Identity Ecosystem

The SLUDI initiative is a pioneering step in Sri Lanka's digital governance program. Initiated by the Ministry of the Digital Economy and implemented by the ICTA, SLUDI aims to eliminate the traditional paper-based National Identity Card process by implementing a secure, biometric-enabled digital identification framework. The SLUDI was released in April 2026 (Anthony, 2025). It is based on the Modular Open-Source Identity Platform (MOSIP) and is an internationally recognized architecture deployed in countries like the Philippines, Morocco, and Ethiopia. According to Antony (2025), the SLUDI assigns a unique national digital identifier to every citizen

to enable secure biometric authentication for access to public services, financial systems, and welfare schemes.

This system aims to eliminate the duplication of government departmental identity records, improve the targeting and payment of social benefits, and enhance data accuracy and operational efficiency. By reducing administrative costs and eliminating loopholes in corruption, the SLUDI will contribute to the development of a more responsible government. It will also improve the privacy of citizens through the encrypted handling of data and ensure national data sovereignty by maintaining full local control of citizens' data.

The SLUDI is best described as both a product/service and governance innovation. As a product innovation, SLUDI involves the introduction of a new digital ID system that brings citizens closer to the services. As a governance innovation, its implementation involves reshaping the institutional arrangements and norms of data governance to align with global standards for digital public infrastructure. The SLUDI is also a conceptual innovation that emphasizes identity management as the foundation of inclusive development and digital citizenship.

SWASTHA: A Process Innovation Transforming Medical Supply Management in Sri Lanka

Launched by the Ministry of Health in June 2023, the SWASTHA system represents a significant move toward digitalizing Sri Lanka's healthcare infrastructure. SWASTHA is an online management platform that supplies medical data. SWASTHA replaced the outdated Medical Supplies Management Information System (MSMIS) with the goal of automating the entire medical supply management lifecycle from estimation and procurement to distribution and verification (Attanayake & Rambukwelle, 2024).

The fundamental functionality of the system is electronic preparation of annual medical supply orders using adjusted consumption methods and forecasts based on routine treatment and morbidity patterns. According to Attanayake and Rambukwelle (2024), SWASTHA provides data-based planning for more precise procurement planning and reduces waste. It also facilitates real-time inventory monitoring, automated ordering, scheduling, store management, and quality assurance. These capabilities have methodically eliminated human errors, improved delivery timelines, and increased transparency in resource use.

The implementation of SWASTHA has resulted in measurable benefits in terms of operational efficiency, cost savings, and accountability in the public health system (Ministry of Health, 2023). By digitizing supply chain operations, the system has eliminated delays in the dispensation of medical supplies and ensured the timely availability of key medicines and equipment. This has directly improved patient-care outcomes, particularly in rural and underserved communities. The system also supports data-based decision-making, enabling health administrators to respond to emerging public health needs more effectively and optimize resource utilization.

Based on its development, implementation, and impact, the SWASTHA medical supply management system is best described as a process innovation with governance innovation aspects.

State Land Information and Management System (e-SLIMS)

Developed by the Land Commissioner General's Department (LCGD), e-SLIMS is a sophisticated computer-based state land administration management system. Introduced on a pilot basis in 2013 and expanded on an island-wide basis in 2017, it currently operates 332 divisional secretariats (DSs).

It automates the most important land administration processes, including the issuance of permits, grants, and leases as well as the conduct of Land Kachcheri. It also streamlines operations between the provincial and central land authorities. By reducing paper-based documentation and enabling real-time monitoring, e-SLIMS can enhance transparency, reduce corruption, and improve land-use planning. As a new wave of governance innovation, e-SLIMS strengthens institutional coordination and supports sustainable land management. It aligns perfectly aligns with broader e-governance objectives (LCGD, 2025).

Electronic Birth, Marriage, and Death Registration System (e-BMD)

Implemented as part of the Registrar General's department modernization project, the electronic birth, marriage, and death registration (e-BMD) system has digitized the production of certified copies of birth, marriage, and death certificates. Enabled by the UNDP and WHO under the OneRegistry project, the e-BMD system has shifted paper-based records to a centralized digital storehouse (UN Sustainable Development Group, 2025). This system maximizes administrative efficiency, prevents delays, and enables public health planning and social protection. It also enables Sri Lankans abroad to acquire important documents through diplomatic missions (Sri Lanka Embassy, USA, 2025). As a product/service innovation, e-BMD facilitates inclusive governance by removing barriers to essential services and encouraging Sri Lanka's digital economy agenda.

Electoral Registration System

Sri Lanka's electronic voter registration system enables citizens to verify and update their voting information online. Managed by the Election Commission, the system enhances electoral integrity by reducing human error and improving transparency in the handling of voter information. It also enhances democratic engagement by providing simplified access to registration services, particularly among the youth and rural residents. As a product or service innovation, the system improves the accuracy and inclusiveness of electoral processes, enhancing democratic government and public involvement (Election Commission, 2016).

Department of Pensions Digital Platform

The Department of Pensions introduced a multimodule online system to streamline services for over 700,000 pensioners (Siriwardana, 2025). The website has modules for reporting the deaths of pensioners, registering widows/orphans, acquiring railway passes, and employee provident fund management. Developed in collaboration with other government departments and private sector partners, the system eliminates delays, enhances service delivery, and ensures the punctual release of benefits. It also supports data integration and interagency coordination. Process innovation modernizes in-house processes and supports improved welfare outcomes and administrative efficiency in pension administration (Alahakone, 2025).

Integrated Welfare Management System (IWMS)

A governance and process innovation in social protection, the IWMS is a flagship e-government project led by Sri Lanka Welfare Benefits Board under the Ministry of Finance. This initiative is supported by the ICTA and funded by the World Bank. Developed under the Social Safety Nets Project, the IWMS is a unified digital platform intended to facilitate the implementation of a number of welfare schemes (e.g., Samurdhi, allowances for older adults, allowances for people with disabilities, and Chronic Kidney Disease of Unknown Etiology [CKDu] benefits) through a single-window system (ICTA, 2019; Ministry of Finance, 2024). This system facilitates the delivery of welfare benefits to over 1.7 million citizens.

The system integrates functions, such as beneficiary identification, eligibility testing, enrollment, subsidy processing, grievance management, and progress tracking. An in-depth business process reengineering (BPR) analysis was conducted to make these processes efficient and interoperable between agencies. The IWMS seeks to enhance equity, efficiency, and transparency in the distribution of welfare by reducing duplication, improving targeting, and enabling the real-time monitoring of disbursals. It also enables citizen feedback, the coordination of third-party services, and secure access to welfare information.

Despite being strategically positioned, the project has been marred by implementation challenges, including high staff turnover, vendor conflicts, and short system deployment timeframes (Ceylon Daily News, 2024). However, stakeholder interaction has been improved through weekly coordination meetings and capacity development activities.

From the perspective of innovation typology, the IWMS is governance and process innovation as it reengineers institutional structures and processes and integrates digital means of service delivery. By integrating fragmented welfare schemes into a cohesive digital platform, the IWMS provides an inclusive, accountable, and responsive social protection system in Sri Lanka.

Stratlink: A Governance and Process Innovation in Trade Regulation

Stratlink is Sri Lanka's official online portal for the Department of Imports and Export Controls. It was designed to enable computerized trade regulations and enhance service provision for importers and exporters. As a web-based platform, Stratlink enables traders to register, obtain licenses, and lodge documents online without physical paperwork, thereby reducing the administrative burden. The platform simplifies the review and approval processes through built-in workflows and audit trails that provide transparency and minimize opportunities for corruption. It maintains all document and license submissions in a secure environment. Stratlink also interfaces with other government agencies such as Sri Lanka Customs, the Ministry of Health, and the Central Environmental Authority to enable coordinated compliance checks across sectors.

Strategically, Stratlink ensures Sri Lanka's compliance with international conventions under the Basel, Rotterdam, and Stockholm Conventions, as well as the implementation of national policies, such as the ban on harmful imports (e.g., glyphosate) and drug shelf-life regulations. This system contributes to Sri Lanka's goal of becoming an Indian Ocean transshipment hub by balancing national security, environmental sustainability, and public welfare through trade facilitation.

From an innovation typology perspective, Stratlink is both a process and governance innovation, as it reengineers institutional processes and regulatory enforcement while offering digital channels for service delivery. Stratlink has improved regulatory compliance, reduced transaction costs, and enhanced public trust in institutions (Department of Export and Import Control, 2025).

Citra Innovation Lab

Citra Lab is Sri Lanka's first public social sector innovation laboratory. Citra Lab was launched in 2018 through a collaboration between the PMO and UNDP. Citra Lab employs human-centered design, foresight, and systems thinking to codesign, prototype, and experiment with development solutions before scaling them nationally. Citra Lab's innovation process follows a seven-step agile and iterative process from problem framing and stakeholder engagement to prototyping, testing, and impact evaluation. Citra Lab has transformed the traditional public sector architecture by integrating innovation into policy formulation and service delivery.

Citra Lab has introduced design thinking, user journey mapping, and systems mapping into public service reengineering to make public services more people-oriented, responsive, and inclusive. Outputs include the development of the national AI readiness assessment, the SDG tracker, and the life skills curriculum. Citra Lab has improved policy coherence, boosted institutional capacity, and encouraged a culture of innovation in government.

Suwa Seriya Ambulance Service: A Sri Lankan Public Health Process Innovation

The Suwa Seriya Ambulance Service, commonly referred to as the "1990 Ambulance Service" or "Suwaseriya," is one of the most notable public health innovations in Sri Lanka. Unlike the traditional approach, this public health intervention provides free prehospital emergency care across the country.

The governance system comprises three pillars: the 1990 Suwa Seriya Foundation; the 1990 Suwa Seriya Act No. 18 of 2018, which is the main organ of the service; and the State Ministry of Primary Health Care, Epidemics, and COVID Disease Control, which runs the service. Therefore, as the result of the combination of government authority and private sector flexibility, Suwaseriya provides a speedy emergency response service throughout Sri Lanka (1990 Suwa Seriya Foundation, 2025).

Suwaseriya's primary objectives include providing equitable access to emergency medical transportation, improving the efficiency of response times and clinical outcomes, and building public trust through transparency and accountability. Using technology-enabled systems for deployment and monitoring, the service aspires to play a major role in transforming Sri Lanka's emergency healthcare infrastructure. The project was launched in 2016 with an Indian government grant of approximately USD7.56 million. Initially, the service covered only the western and southern provinces, with 88 ambulances and Indian-trained emergency medical technicians. In 2018–2019, the Indian government provided an additional grant of USD15.09 million to the program, enabling it to expand its scope to 297 ambulances throughout the nation (Rodrigo, 2023). In 2018, the parliamentary legislation established a legal framework designating the service provider as an accountability vehicle for the new institution.

By 2025, Suwaseriya was able to support 10 million people; of the 1.8 million calls to the service, the average response time was 12 min (Ada Derana, 2019). The service comprises approximately 1,400 staff members and a fleet of 297 ambulances. At its peak, it is sufficiently operationally efficient to make over 5,300 runs daily, transferring an average of 1,000–1,400 patients. Nearly 175,000 patients were afforded safe transportation during the coronavirus disease 2019 (COVID-19) pandemic, and the service played a key role in the national pandemic response.

Suwaseriya is an excellent example of product or service innovation. It can also be considered a technological process innovation as it integrates advanced digital tools into healthcare operations for emergency situations. In this respect, the utilization of real-time monitoring and navigation systems optimizes the vehicle dispatch. Moreover, the Connected Ambulance program uses hybrid reality, AI-driven triage, and electronic patient-care records to assist remote physicians. Specialized applications for Android and iOS enable citizens to access ambulances digitally, thereby increasing accessibility and user engagement. Moreover, c all center systems have digitized the entire process of handling calls, ensuring that calls are answered by an agent 98.9% of the time, thereby increasing accountability and customer trust (Rodrigo, 2023). The operation's integrity and monitoring level

have also been enhanced by the integration of police liaison units and the execution of follow-up activities at command centers.

Initial financing was secured via a pair of Indian grants, amounting to USD22 million, after which the Sri Lankan government took financial responsibility. However, several problems have emerged, including a funding gap of LKR1.4 billion by 2023. The proposed solutions include the introduction of the Adopt an Ambulance program and private sector collaboration. During the COVID-19 pandemic, the remaining funding required for the expansion of the program was provided by Japan and the ADB.

In 2025, seven years after the service was launched, Suwaseriya hit a milestone of serving 15 million patients, indicating its scalability and institutional resilience. The World Bank has recognized that digital innovation has a significant impact on public health.

Citizen Mirror: Divisional Productivity Index 1.0

Citizen Mirror: Divisional Productivity Index 1.0 is a groundbreaking digital innovation introduced by the NPS to provide a standardized framework for measuring the performance of Sri Lanka's decentralized public administration system (Bopagamage & Chandrasekara, 2025). Previously, DSs were forced to work in the dark, often relying on the annual reports required by Public Finance Circular No. 402. The lack of a unified mechanism for productivity assessment makes it difficult to compare performance and make evidence-based decisions.

To address this issue, Citizen Mirror provides a data-driven key performance indicator (KPI) evaluation model that ensures transparency, accountability, and continuous improvement in public service delivery. The evaluation model comprised 911 KPIs across seven main divisions. Its core departments include administration, field officers, accounts, planning, land, and registration. It also runs two special projects aligned with national development priorities. The framework was initially tested in 2023 and further developed in 2024 (NPS 2025). By 2025, it was digitized and launched as a web-based and mobile-accessible platform integrated with an NPS e-Breeze application.

In terms of innovation typology, Citizen Mirror can be understood as a governance innovation. In addition to improving public administration, it aligns with global digitalization trends and data requirements of the Global Innovation Index. It benefits citizens by ensuring better and more consistent public services, DSs, and district secretaries by providing the data needed to make informed decisions on resource allocation and policymakers by providing access to verified data for evidence-based governance.

As a tool that encourages innovation, teamwork, and excellence recognition, Citizen Mirror is a perfect example of performance-oriented public sector innovation in Sri Lanka. It provides a sustainable and scalable model of governance (Bopagamage & Chandrasekara, 2025).

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN SRI LANKA

Among the aforementioned innovations, PROMISe, e-SLIMS, and the NPA system can be considered the best examples of Sri Lankan public sector innovation, based on their outcomes in improving public sector productivity.

PROMISe

Introduction

As the government's authorized e-GP platform, PROMISe aims to digitize, standardize, and make its procurement lifecycle more transparent across public institutions. Conceptually, PROMISe addresses longstanding inefficiencies in the manual procurement regime, namely, high transaction costs, information asymmetries, anticompetitive practices, and corruption risks. These inefficiencies have traditionally undermined the public value and fiscal discipline in Sri Lanka's procurement function. According to empirical estimates by Wijerathne and Fernando (2024), public procurement accounts for USD4.6 billion, approximately 24% of government expenditure, and 6.3% of Sri Lanka's GDP. It has been estimated that the absence or incomplete utilization of e-GPs costs approximately USD1.2 million per day in terms of inefficiencies, leakages, and delays (Wijerathne & Fernando, 2024). These estimates put the fiscal and governance rationale for the digital transformation of government procurement into perspective.

At the process level, the procurement cycle includes sequential activities, namely, need identification, supplier evaluation and selection, order release and receipt (e.g., letters of intent, purchase orders, delivery notes, invoicing, and payment), and supplier performance management. Embedding this cycle within a digital platform helps reduce labor intensity, compresses cycle times, and improves auditability with standardized records and traceable workflows. In theory, e-procurement is support by ICTs to create an online environment for purchasing and contracting processes, establish a level-playing field, reduce bureaucratic friction, and minimize rent-seeking opportunities. To achieve these results, the Ministry of Finance adopted PROMISe as its official e-GP system (Weerasinghe et al., 2023).

Functionally, PROMISe enables end-to-end digital management: vendor and procuring entity registration; categorization of goods and services; e-learning for users; bid authoring and publication; bid submission and clarifications; automated and manual bid evaluation; procurement planning; activity tracking; and document preparation; and technical specifications. The architecture is deliberately modular to support various procurement methods (e.g., shopping, national and international competitive bidding, direct procurement, consultant selection, PPP qualification, and contracting) while maintaining a uniform digital record conducive to auditing and public oversight.

Although policy measures made PROMISe mandatory for all government institutions as of late 2019, the actual adoption has been heterogeneous and partial, with many agencies relying on manual procedures. This adoption gap points to organizational and environmental constraints in skills, leadership, infrastructure, and supplier readiness that mediate the successful institutionalization of e-GPs in Sri Lanka. Addressing such constraints is central to ensuring system's effectiveness.

Type, Sector, Level of Government, Contextual Factors, and Key Actors

PROMISe is a technological process innovation in public financial management, as listed in Table 1. It has reengineered internal administrative processes through the digitization of the procurement lifecycle, embedding of standardized controls, and transparency mechanisms. This classification aligns with the established typologies of e-procurement as an ICT-enabled transformation of purchasing and contracting, in which web-based platforms integrate actors and transactions. The platform targets the central government and wider public sector. Targeted government organizations include ministries, departments, authorities, state-managed boards, commissions, corporations, bureaus, institutes, and government banks, among others (Weerasinghe et al., 2023).

TABLE 1

SUMMARY OF THE THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN SRI LANKA.

Dimension	e-SLIMS	PROMISe	NPA System
Innovation type	Governance innovation	Process innovation	Process Innovation
Primary goal	Efficiency and transparency	Transparency and trust	Efficiency and the reduction of bias
Level of government	National/provincial	National	National
Main success factor	Bureaucratic leadership and training	Integration with ITMIS and the demand for transparency	Leadership, consistency, and organizational orientation
Impact	• Reduced service time by approximately nine months	• Enhanced the transparency of and trust in public procurement	• Improved the efficiency of the NPA process • Reduced paper usage

Source: Complied by the author based on the data collected for this study.
Note: e-SLIMS, State Land Information and Management System; PROMISe, Procurement Management Information System; NPA, National Productivity Awards.

Several contextual dynamics influenced PROMISe's implementation of PROMISe. Sri Lanka's *Public Procurement Guidelines and Manual* (2024) codify transparency, efficiency, integrity, competition, uniformity, and public monitoring as guiding principles (National Procurement Commission of Sri Lanka, 2025). PROMISe operationalizes these norms through audit trials, standardized disclosures, and rule-bound workflows, translating governance principles into executable systems logic.

Manual procurement suffers from information asymmetries, limited public access to opportunities and outcomes, high bidding costs, reliance on newspapers or website notices, labor intensity, a lack of transparency, and anticompetitive behavior (e.g., unsolicited bids and requirements tailoring). PROMISe directly targets these issues by automating publications, standardizing documentation, and enforcing traceable evaluation steps.

However, the adoption and use of PROMISe are impacted by technology infrastructure deficits, network reliability, human capacity and awareness, and supplier readiness. These empirically significant factors must be addressed through capacity building, infrastructure investment, and onboarding by the supplier.

Sri Lanka's stakeholder ecosystem includes procuring entities, vendors, consultants, system developers, administrators, and policy custodians (notably the Department of Public Finance). Vendors register on the platform, access opportunities, and submit bids electronically; procuring entities plan, publish, evaluate, and award procurements digitally; and policy custodians set standards and monitor compliance (Weerasinghe et al., 2023).

Success Factors: Ideas, Structures, Organizations, and Outcomes

PROMISe is based on the underlying design principle that digitization decreases transaction costs, compresses cycle times, and expands competition through open access, hard code transparency, and integrity in the procurement process. This reasoning has been confirmed by international practice, with e-GP systems found to enhance disclosure, standardization, and auditability while diminishing bureaucratic discretion and the possibility of corruption. In Sri Lanka, PROMISe was explicitly designed to provide a level-playing field for suppliers and to mitigate corruption risks through automation and procedural transparency, as mentioned in Table 1.

PROMISe e-GP platform implements a complete procurement stack, from vendor registration to contract awarding and audit trails. Cumulatively, these modules address fragmentation and enforce uniformity across agencies and procurement methods, thus enabling end-to-end digital governance of the procurement cycle. Empirical evidence points to a set of critical success factors for e-procurement implementation in Sri Lanka, spanning the technological, organizational, and environmental domains (Weerasinghe et al., 2023). First, a robust technology infrastructure (e.g., reliable hardware, connectivity, secure authentication, and network quality) is fundamental. Even well-designed platforms cannot be operationalized without the prerequisite technological infrastructure. Second, human capacity and awareness play a vital role, with the training of procurement staff in digital workflows, documentation standards, and evaluation protocols having the largest standardized impact on implementation. This suggests that capability building is the single most impactful intervention. Third, supplier readiness is instrumental to the success of e-GP implementation. Vendors must be equipped with the knowledge and tools necessary to register, search, submit, and comply with the digital requirements. If they do not, the benefits of e-GPs, including competition and cost reductions, will not materialize. Finally, consistent with international guidance, successful e-GP implementation requires stronger leadership and knowledge diffusion through policy mandates, training programs, and consultative support.

National procurement principles emphasize transparency, efficiency, integrity, competition, uniformity, and public monitoring. Based on these principles, the PROMISe results can be categorized into four dimensions:

1. Efficiency and cost reduction: Digitalization reduces paperwork, compresses cycle times, and lowers transaction costs for both the government and bidders by providing standardized, searchable opportunities and handling electronic documents.

2. Transparency and auditability: The systemic publication of opportunities, electronic records of clarifications and evaluations, and immutable audit trails facilitate ex-post review and public monitoring, deter malfeasance, and build trust. Thus, the platform operationalizes the transparency and integrity provisions established in the national guidelines.

3. Competition and market access: By facilitating the wider registration of vendors and common disclosure, PROMISe reduces information asymmetry. Thus, procurement calls have become more equitable and accessible through online publishing. Improved competition drives value-for-money outcomes for goods, work, and services.

4. Uniformity and governance coherence: Common templates, rules, and workflows reduce siloed activities across agencies and align practices with legal and international standards.

e-SLIMS

Sri Lanka's e-SLIMS is an IT solution for improving the effectiveness of the state land administration. The system is used to input data related to state land at the DS level. It facilitates the processes involved in issuing documents related to land distribution, revenue collection, tracking actions on distributed land, and managing supervisory activities. The system was launched in 2013 with 40 DSs in the Western Province and was subsequently expanded to operate across 332 DSs nationwide by the end of 2017.

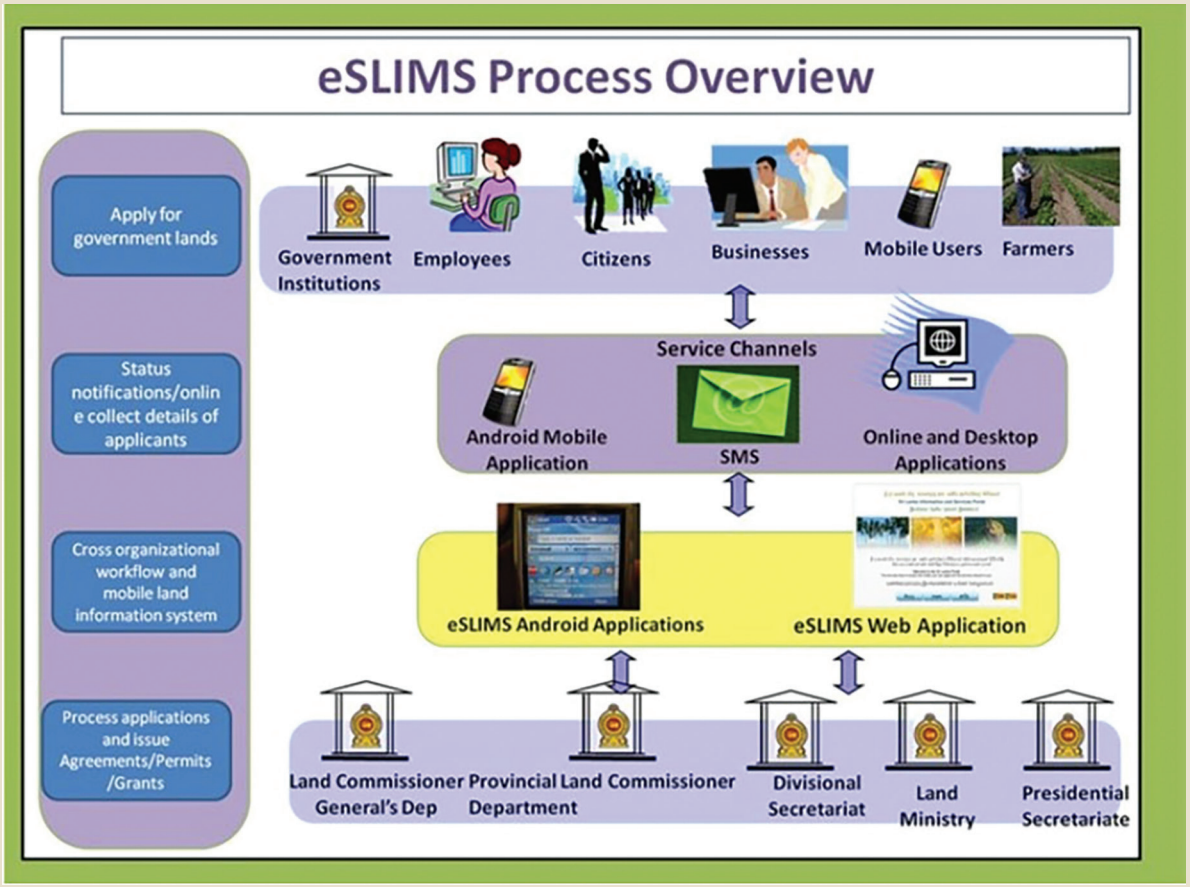
Today, e-SLIMS supports the implementation of essential state land management duties as regulated by applicable laws, directives, and communications (see Figure 2). The system ensures smooth and precise execution of the following:

1. Disposition of state lands in terms of the Land Development Ordinance:
   - Issuance of permits
   - Issuance of grants

2. Disposition of state lands in terms of the State Lands Ordinance:
   - Issuance of long-term leases
   - Issuance of annual permits
   - Issuance of free grants
   - Granting of state lands for departments
   - Granting of state lands for local government authorities

FIGURE 2

OVERVIEW OF THE E-SLIMS PROCESS.



Source: LCGD (2017).
Note: e-SLIMS, State Land Information Management system; LCGD, Land Commissioner General's Department; SMS, Short Message Service.

3. Circular No. 2008/4 and 2008/4(1):
    - Obtaining approval to conduct Land Kachcheri
    - Conducting evaluations to select eligible candidates
    - Obtaining approval for final selections

The system replaces cumbersome paper-based processes with a centralized electronic workflow, removing delays, reducing corruption, and improving service delivery (LCGD, 2017). The system provides applicants with real-time processing updates on their applications for the release of land and distributes government information on the regulations and processes involved in land management. It also maintains a record of state land ledger updates, including alienated land, the collection of funds, and any outstanding sums owed. The system digitizes information on land alienation process activities in both text and graphic form and provides accurate information about state lands (ICTA, 2017). Through the provision of online applications, real-time monitoring, and data sharing between agencies, e-SLIMS has restructured and revamped the structural and operational paradigms of land governance in Sri Lanka.

Significantly, e-SLIMS has also contributed to land-use planning, enhanced citizen access to land services, and increased government revenue collection. The system operates at both central and provincial government levels. Designed to modernize outdated land management systems, e-SLIMS aims to address fundamental issues, such as corruption, inefficiency, and limited access to land for development and livelihood. As state land comprises nearly 80% of the land in Sri Lanka, an efficient administration is imperative for socioeconomic development and environmental stability.

Type, Sector, Level of Government, Contextual Factors, and Key Actors

The management of land disputes has long been a social issue in Sri Lanka. In the past, the Sri Lankan land management system faced challenges that impeded efficiency and clarity. Data on state land use were difficult to access because such data were managed by various stakeholders, namely the various government institutions responsible for managing crown lands, without any centralized database for storing information. There were also inadequate data on land alienation transactions because transactions involve various state institutions, making it difficult to keep track of the current status of a transaction. Information on unalienated land was difficult to obtain because it was manually stored by the LCGD, provincial land commissioner departments, and DSs. Moreover, revenue from state land was calculated manually, making it difficult and inefficient.

The introduction of e-SLIMS has completely transformed land management in Sri Lanka. This innovative governance solution provides a web-based platform encompassing the entire procedure of land disposal across all government institutions. Through e-SLIMS, citizens can make online applications for the allotment of government land for various purposes and track the real-time status of their submission. The system clearly explains the guidelines and regulations regarding land release schemes to ensure transparency and accessibility. It maintains an updated record in the state land ledger, including the collection of alienation dues and the outstanding amount of alienated land. The system also digitized the entire record of activities related to land alienation in both text and graphic forms. It also ensures the provision of verified information on state land. Using the power of technology and innovative processes, e-SLIMS aims to alleviate inherent inefficiencies in land management and provide citizen-centric services.

The primary actors involved in deploying and operating e-SLIMS include land officials (colonial officers), IT developers, citizens seeking land permits and grants, and policymakers. However, citizens have no access to these logins. Moreover, according to Karunathilake, the Assistant Divisional Secretary-Ganewatte Division, Survey General Department, Valuation Department, and village officers (Grama Niladhari) should be integrated into the e-SLIMS system for more efficient service delivery (N. Karunathilake, personal communication, 7 December 2025). These departments and officers still provided land services manually. Integrating these into the system reduces the average service time.

Regarding contextual factors, land administration in Sri Lanka has long been criticized for significant delays, largely because officials must visit the premises several times before issuing land permits. Other criticisms have focused on high politicization, bribery, and corruption, with a significant demand for greater transparency in the land administration processes. To address these criticisms, e-SLIMS has increased the visibility, transparency, and accountability in land administration.

Digital infrastructure and literacy play crucial roles in the implementation of e-SLIMS. To date, the system has been used only by government officials, with no login access for citizens. Nevertheless, a lack of IT literacy and training among government officials has emerged as a barrier to its implementation. Moreover, although all the necessary digital equipment was provided via UNDP funding during the initial rollout, obsolete equipment was not replaced in a timely manner. Furthermore, as e-SLIMS runs in every divisional administration unit, network maintenance is crucial for continuous service provision. Trained officers should maintain this system. The LCGD has recently began considering the appointment and training of departmental staff for this purpose (N. Karunathilake, personal communication, 7 December 2025).

Success Factors: Ideas, Structures, Organizations, and Outcomes

The success of the e-SLIMS initiative can be attributed to the adoption of a phased implementation approach and strategic planning. Architecturally, e-SLIMS integrates different levels of government and agencies into one digital process, enabling the free flow of information and harmonized decision-making. Organizational acceptance from the LCGD and support from the Ministry of Land facilitated policy adherence and resource mobilization. The system's citizen-friendly interface and Internet application ability have empowered citizens and enhanced their confidence.

According to Karunathilake (personal communication, 7 December 2025), e-SLIMS has reduced the average service processing time from one year to three months, as shown in Table 1. This also significantly reduces paper usage. The number of field visits declined to only one mandatory site visit by government officials. The system allows the supervising officer to monitor progress in real-time, enhance transparency, and mitigate opportunities for corruption. In this respect, e-SLIMS aligns with the principles of good governance (N. Karunathilake, personal communication, 7 December 2025).

Stakeholders and users have identified several areas where there is room for improvement. First, e-SLIMS should be expanded to stakeholder organizations such as the Valuation Department and Survey General Department and officials such as the Grama Niladhari, who still complete processes manually. Integrating these stakeholders into the system will further reduce the processing time.

Second, it does not provide login access to applicants (clients). Although the digital divide makes it difficult to ensure that all clients access the system, such an option may be useful. As Karunathilake (Personal communication, 7 December 2025) noted, 'This system is the future of land administration in Sri Lanka.'

Nevertheless, e-SLIMS has achieved key outputs, including the development of a state land information registry system, provision of effective land release services, development of a state land information sharing policy, and implementation of online services for land applicants. Significant outcomes include the development of accurate national land statistics and advanced analytics for land information, boosting efficiency and productivity in land service delivery. Moreover, the accessibility of integrated land domain services through e-SLIMS has enabled evidence-based decision-making by the government and members of the public. In doing so, this innovation may enhance Sri Lanka's position on the Doing Business Index, indicating a major step forward in governance innovation (ICTA 2017). As such, e-SLIMS is a landmark innovation in Sri Lanka's path toward digital governance, demonstrating how technology can be used to efficiently manage vital national assets.

NPA System

The NPA is the only government-initiated, nationally framed evaluation competition in Sri Lanka that focuses on organizational performance. Launched in 2003, a total of 10 competitions have been organized on a biennial basis. The competition is divided into three sectors: public sector, school sector, and manufacturing, and service sector. Overall, the NPA aims to

- Encourage the adoption of best practices to ensure quality, productivity, and efficiency.
- Enhance national development by harmonizing organizational practices with the National Vision and Development Program, thereby ensuring improved standards of living for the people of Sri Lanka through the active participation of public institutions.
- Identify, recognize, and reward outstanding institutions at the national level to help prepare organizations to tackle future challenges on a global scale with the aid of sustainable development practices, such as resource efficiency (NPS, 2025).

The NPS manages competitions and awards ceremonies. A trained panel of judges evaluates the applications based on the globally accepted criteria. Traditionally, the application and judging processes were completed manually, giving rise to inefficiencies, potential errors, and bias. From the announcement of the competition to the conclusion of the awards ceremony, the NPA is a rigorous process that includes the selection of the judging panel, registration of applicants, submission of documents, initial screening, on-site judging, and finalization of the findings.

Considering these challenges, an online system was developed in 2015 to optimize the digitization of the most essential parts of the process. Initially, only a few parts of the process were automated. Modernization in 2018 improved the system functionality. By 2025, the NPA system was transformed into a comprehensive, integrated online solution with a corresponding mobile application, exclusively for the judging panel. The current functionalities of the system serve three user communities: NPS personnel, NPA applicants, and panel members. The system has modules for handling applicants, managing the judges' panel, requesting consultations, tracking locations, and processing payments. Applicants, judges, and administrators can create, receive, and send

notifications via email or SMS. Switching from a manual to a digital system has significantly improved efficiency, reduced paperwork, and increased transparency. The system has also increased participation with the number of entries exceeding 5,500 by 2025. These outcomes underscore the value of an online system able to address the complexity of the tasks involved in NPA (S. M. S. D. Kumari, personal communication, 10 December 2025).

Type, Sector, Level of Government, Contextual Factors, and Key Actors

The NPA system can be understood as an IT-enabled process innovation. According to the classification suggested by de Vries et al. (2015), technological process innovation involves the "use of, or creation of, new technologies" (p. 6). The NPA system transformed an existing manual and paper-driven process into a complete digital workflow, thereby increasing efficiency, transparency, and scalability. Launched in 2015, the system was refined through a series of incremental developments, culminating in a full-fledged platform by 2025.

Given that the NPA is a government-initiated program managed by the NPS, which falls under the Ministry of Industry and Entrepreneurship Development, the NPA system is a public sector innovation with national scope. The NPA system interacts with a wide array of stakeholders across the public sector stakeholders. For example, the NPA's public sector category encompasses seven subcategories: ministries within the central government, ministries within the provincial council, government departments, DSs, local government institutions, micro-level institutions, and state-owned enterprises. Similarly, the school sector includes individuals in national schools that fall under the central government as well as individuals in the nine provincial councils (NPS, 2025).

Several contextual factors influenced the emergence of NPA systems. Digital literacy, or the digital divide, is a significant issue, with differences in technological skills among applicants, assessors, and support staff, underscoring the need for continuous support. For instance, some applicants did not know how to log into a web-based system, thus requiring support from the NPS staff when creating accounts (S. M. S. D. Kumari, personal communication, 10 December 2025).

Lack of finances was a major constraint during the initial phases of implementation. This computerized system was introduced in 2015 when IT application in the Sri Lankan government sector was still fairly limited and costly. It is worth noting that unlike other computerized systems in the Sri Lankan government sector, which have been funded by various donor agencies, the NPS is entirely responsible for the development of the NPA system (S. M. S. D. Kumari, personal communication, 10 December 2025). Although commendable, this has compounded funding-related challenges.

Despite these challenges, steadfast leadership commitment played a critical role in sustaining the innovation (S. M. S. D. Kumari, personal communication, 10 December 2025). The NPA system was developed using a phased process. During this time, the NPS changed ministries; it was placed under the Ministry of Public Administration in 2015, moved to the Ministry of Labour in 2020, and is managed by the Ministry of Industry as of 2025. This suggests a repeated need to advocate for support from the respective ministerial leadership.

The incorporation of judge panel management is one of the most recent updates to this system. This involves a level of confidentiality complexity. Given the nature of competition, the system design must ensure that the scores are authentic, with adequate protection from illegal disclosure. The NPA system exhibits a high degree of sustainability. Indeed, the system has been running for close

to a decade, which is a particularly impressive track record given the high attrition rate of public sector IT systems in Sri Lanka. This is a testament to the established reputation of the NPS as a national leader in productivity enhancement.

Several factors, as listed in Table 1, have led to the success of the NPA system.

1. Committed leadership and institutional support: The dedication of top-level leadership is an integral component of a system's success. Indeed, periodic changes to the ministerial leadership did not derail support for the initiative, with NPS leaders remaining steadfast in their advocacy for the development of the NPA online system.

2. Organizational reputation and innovation orientation: At the forefront of productivity and innovation, the NPS's track record as a pace-setting organization plays a significant role in the acceptance of the system. The NPS's support for green productivity principles, such as moving toward paperless offices, facilitated the implementation of innovation within the system. Following the system's implementation, returning to the old method of manually performing tasks became a challenge, thus reinforcing and sustaining the continuity of this innovation.

3. Continuous technical support and development: The technological viability of the NPA system has been reinforced by the long-term commitment of those who have developed it. Although the development process was initially outsourced, contractors displayed a commitment that exceeded the scope of the agreement, resulting in system improvements to address the changing needs.

4. Efficiency: The transition from manual to automated systems has resulted in significant improvements in NPA process efficiency and accuracy. The previous system involved a laborious scoring process that was open to error or inaccuracy, placing a significant burden on administrators. The automated system optimized the entire process and reduced the likelihood of computational errors, thereby improving the efficiency and scalability of the evaluation results.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN SRI LANKA

This section assesses whether certain types of innovation, such as process, product/service, governance, and conceptual innovation, have a significant relationship with increased public sector productivity in Sri Lanka. It assesses the 13 innovation cases cited in this report using de Vries et al.'s (2015) innovation typology, and accounts for cases of hybrid innovation. According to de Vries et al.'s (2015) typology, process innovations refer to changes in internal organizational procedures; product/service innovations concern the development of novel or improved services for citizens; governance innovations involve improvements to partnerships, institutions, and rules; and conceptual innovations relate to the development or reform of thought frameworks that define public value.

As Table 2 shows, the Sri Lankan portfolio is largely centered on IT-enabled process changes, such as ITMIS (Treasury), e-PROMISE (procurement), SWASTHA (medical supplies), e-SLIMS (state lands), NPA system (awards), pension digital platform, IWMS (welfare), and Stratlink (trade licenses). Other product/service innovations that serve the public include civil registration

(e-BMD), electoral e-registration, and the Suwa Seriya Ambulance Service. Among the most significant governance innovations are SLUDI (Digital Identity as Digital Infrastructure), Citizen Mirror, and Citra Lab (co-creation).

Process innovations in Sri Lanka, process innovations have produced measurable efficiency gains, including improved cycle times, reduced error rates, cost savings, and enhanced auditability. Product/service innovations enhance timeliness, relevance, and public trust, while reducing government and citizen transaction costs. Governance innovations have served as multipliers, standardizing frameworks, enabling the capacity for co-creation, and facilitating the scaling of process/service innovations. However, conceptual innovation in the Sri Lankan public sector is markedly lacking.

TABLE 2

INNOVATION TYPES FREQUENTLY ASSOCIATED WITH INNOVATION IN SRI LANKA.

Innovation	Type	Primary productivity outcomes	Level
ITMIS (treasury)	Process	Paperless workflows, real-time fiscal reporting, and internal controls	National
PROMISe (e-GP)	Process	Reduced cycle time, greater auditability, competition, and improved value for money	National
SWASTHA (health)	Process	Accurate estimation, reduced wastage, and 88–93.8% coverage	National/ subnational
e-SLIMS (lands)	Process	Reduced service time, improved transparency, and fewer visits	National/provincial
NPA System	Process	Automated scoring, secure panels, and increased number of applications	National/provincial/ Subnational
Pensions Platform	Process	Reduced delays, punctual delivery of benefits, and data integration	National
IWMS (welfare)	Process/ governance	Reduced duplication and improved equity and transparency	National
Stratlink (trade)	Process/ governance	Reduced transaction costs, improved interagency compliance, and clear audit trails	National
Citizen Mirror (regional administration)	Process	Standardized KPIs, dashboards, and benchmarking	Subnational
e-BMD	Product/service	Faster certificate production, diaspora access, and provision of planning data	National
Electoral Registration	Product/service	Reduced error rate, improved transparency, and increased youth/rural access	National
Suwa Seriya EMS	Product/service/ process	12 min response time, high throughput, and pandemic resilience	National
SLUDI (digital ID)	Governance/ product	Reduced duplication, enhanced targeting, improved authentication, and privacy	National
Citra Lab	Governance	Co-creation, prototyping, and capability building across ministries	National

Source: Compiled by the author based on the data collected for this study.
Note: e-BMD, Electronic Birth, Marriage, and Death Management; e-SLIMS, State Land Information Management System; ITMIS, Integrated Treasury Management System; IWMS, Integrated Welfare Management System; NPA, National Productivity Awards; PROMISe, Procurement Management Information System; SLUDI, Sri Lanka Unique Digital Identity.

ANALYSIS OF CONTEXTUAL FACTORS

Public sector innovation outcomes are shaped by the context in which the innovations are conceived, adopted, and scaled. Drawing on the 13 documented innovations mentioned in this report, this section examines the economic, geographic, political, and social factors associated with improved productivity and innovation in Sri Lanka. It integrates the framing perspective advanced by Lewis and Mikolajczak (2023), who found that governments oscillate between technology-driven (e.g., science, business, and research and development [R&D]) and culture-driven (e.g., public sector culture) definitions of innovation to explain why and when contextual conditions align with specific types of innovation and productivity gains.

According to the Additional Chief Innovation Officer of the NIA, political and bureaucratic factors play a vital role in public sector innovation in Sri Lanka (S. Panwila, personal communication, 5 December 2025). For example, the support of political and bureaucratic leaders encourages the implementation and adoption of innovations. A particularly apt example is the NPA system, which was sustained for over a decade owing to the commitment of bureaucratic leadership. Another example is the national ICT policy, the backbone of many IT-related public sector innovations, which was initially driven by political leadership. Projects with weak political support tended to collapse. The significance of leadership commitment is evidenced by Sri Lanka's fluctuating rankings in the e-government Development Index (EGDI). For example, in the 2014 EGDI, Sri Lanka ranked 74th, a major leap from its rank of 115th in 2012. This leap in rankings was due to national policy, which asserted that Sri Lanka's IT literacy rate would improve by up to 75% by 2016 (Viva Lanka, 2012). Sri Lanka's political leadership has reinforced its commitment to digitization, with the president appointed as Minister of Digital Economy. The Sri Lankan lineage and the National Digital Economy Strategy 2030 articulate a strategic technology-driven reform narrative, with high-level endorsements setting the stage for platforms such as SLUDI.

Strict and outdated rules, regulations, and audit requirements have been obstacles to public sector innovation in Sri Lanka. In the past, public sector employees' leaves were manually recorded in a standard format. Although digital leaf management systems have been introduced, auditors still require traditional manual records. This duplication creates an additional workload for leaf management officers and reduces efficiency. Such, which are significant barriers to IT-related innovation in the public sector. According to NIA, there is often a clash between innovation and audit requirements (S. Panwila, personal communication, 5 December 2025).

Public sector partnerships with funding organizations such as the UNDP and ADB have been critical contextual factors in public sector innovation in Sri Lanka. These funding agencies have initiated several projects that have subsequently been discontinued because of a lack of government involvement or changing political leadership commitment. For example, the University Business Linkage initiative introduced by the World Bank-funded Accelerating Higher Education and Development project has been difficult to sustain because of a lack of funds from the government (S. Panwila, personal communication, 5 December 2025).

Regarding economic factors, the government does not provide a sufficient budget for public sector innovation in Sri Lanka. For example, public officers often use obsolete equipment because budgetary constraints prevent its timely replacement of hardware (N. Karunathilake, personal communication, 7 December 2025).

Poor digital literacy and the digital divide have also affected public sector innovation in Sri Lanka, as observed in the e-SLIMS and NPA system initiatives. As IT-related innovations are the most common type of innovation in Sri Lanka's public sector, digital divide remains a critical factor in innovation outcomes. Networking issues, low digital literacy, and a lack of access to the Internet due to poverty are significant barriers to innovation in Sri Lanka, especially IT-related service delivery innovations in public sector organizations at the grassroots level, such as DSs and local councils. These geographic and social factors frequently shape public sector innovations in Sri Lanka.

The lack of strong R&D units in public sector organizations can also be considered a contextual factor affecting public sector innovation in Sri Lanka. Although the NIA has recognized the diverse players involved in innovation, organizational siloing persists. Moreover, innovation is never instantaneous regardless of the organization. People require time to accept changes. According to Senge's five disciplines of creativity, innovation is achieved through five stages: discovery, design, delivery, diffusion, and sustainability (Senge, 1990). Moreover, employees need sufficient time to brainstorm innovations. However, according to Karunathilake (personal communication, 7 December 2025), public sector employees have busy schedules with little time for creative thinking or innovation.

Sri Lanka has established a strong tertiary education system with extensive research networks. The country also has the highest literacy rate (92%) in South Asia. However, Sri Lanka has not capitalized on these strengths. According to S. Panwila (personal communication, 5 December 2025), university R&D contributions to innovation are hidden or invisible. Most products and services produced by universities are commercially branded, obfuscating the universities' links to innovation.

Lewis and Mikolajczak's (2023) conceptual framework views innovation as driven by culture or technology. In this regard, innovation in Sri Lanka is not driven by one more factor than another. While innovation, whether implemented within an organization or on a larger geographical scale, has been influenced by both cultural and technological advancements from time to time, Lewis and Mikolajczak's (2023) framework may not be the most suitable paradigm to describe public sector innovation in Sri Lanka. However, judging by the government's most recent strategies, there is a clear desire to change this scenario. Developing a digital economy is the core agenda of the recently elected administration, indicating that innovation driven by technological advancements or businesses will gain momentum in the future.

KEY DRIVERS OF IMPROVEMENT

1. Strong political and bureaucratic leadership: High-level endorsement and ministerial commitment accelerate innovation adoption and resource allocation.

2. Policy frameworks and strategic vision: Clear national ICT and e-government strategies provide directions and measurable targets for innovation.

3. Digital infrastructure and technology integration: Investments in platforms like LGN and LGC enable interoperability and scalability.

4. Multisector partnerships: Collaboration with development partners (e.g., the UNDP, ADB, and World Bank) secured funding, technical expertise, and global best practices.

5. Organizational capacity and leadership commitment: Institutional champions and dedicated teams within agencies ensure continuity and successful implementation.

6. Regulatory adaptation and process reengineering: Flexible regulations and BPR align workflows with digital systems, reducing barriers.

7. Human capital and digital literacy: Sri Lanka's high literacy rate and targeted digital skills programs support the adoption and diffusion of innovations.

8. External pressure and performance incentives: Global benchmarking (e.g., EGDI) and recognition mechanisms (e.g., productivity awards) motivate agencies to innovate.

RECOMMENDATIONS

While Sri Lanka's public sector has demonstrated significant advancements in IT-driven reforms, its weaknesses include policy coherence, resource mobilization, and cultural adaptability. To embed a sustainable innovation culture, the following interventions are necessary in the policy, organizational, and people dimensions:

1. Formulate a centralized innovation policy: Sri Lanka should formulate a national innovation policy led by the NIA, replacing the fragmentation of its existing structure with a more cohesive approach. Innovation policy should be grounded in local contexts rather than external models, categorize innovation in the public sector under service innovation, provide guidelines for ministries and government agencies, and develop accountability frameworks and quantifiable innovation goals.

2. Integrate IT as a strategic enabler: In current Sri Lankan public sector innovation, in which e-platforms are heavily utilized (e.g., e-PROMISE, ITMIS, and SLUDI), technological factors need to be holistically integrated with policy design in terms of financing, infrastructure, and cybersecurity. Technology should also be integrated in capacity-building initiatives to upgrade the digital literacy skills of government functionaries, thus helping bridge the digital divide.

3. Encourage multisector collaboration: Engagement with third-sector actors (e.g., UNDP, ADB, NGOs) and private sector businesses should be enhanced to raise funds for large innovation projects and implement global best practices in governance, educational technology, and youth empowerment. Moreover, considering sustainability as a priority, projects should be included in the national budget following donor-funded pilots.

4. Reform regulatory and audit frameworks: As observed in this report, outdated regulations and rigid auditing processes are common inhibitors of digital transformation. Regulatory reviewers should make compliance standards consistent with innovation goals and implement adaptive models of governance that strike a balance between accountability and experimentation.

5. Enhance R&D and institutional capacity: Currently, R&D comprises about 0.1% of Sri Lanka's gross domestic product, which is significantly below the international standard of approximately 2.2%. Therefore, each government agency must establish R&D units. R&D units should be connected to NIA to promote collaboration. More broadly, creativity and excellence in the public sector should be encouraged through mechanisms, such as annual innovation awards.

6. Shifting the organizational mindset: Successful IT-driven innovation is often measured simply by the success of adoption. To widen this perspective, it is necessary to harness Sri Lanka's large public sector, which comprises some 1.2 million employees, to foster human-centered innovation. Innovation and creative problem solving should be encouraged through structured ideation sessions, such as weekly brainstorming sessions. Moreover, design thinking and collaboration should be integrated into training.

Achieving a productive and innovative culture in Sri Lanka's public sector requires a multipronged approach involving the establishment of a central policy structure, the incorporation of IT, cross-sector collaboration, policy reforms, increased investment in R&D, and cultural changes. This approach may promote a shift from project-level innovation to a systemic innovation environment.

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TURKIYE COUNTRY REPORT: PUBLIC SECTOR INNOVATION AND PRODUCTIVITY

EXECUTIVE SUMMARY

This report assesses the current state of public sector innovation in Turkiye and its impact on service quality, efficiency, accessibility, and sustainability. The cases analyzed in this report were selected from projects submitted to the Productivity Project Awards (PPA) organized by the Ministry of Industry and Technology, which recognize innovative practices enhancing productivity in public institutions. In this context, innovation is understood to include process, service, governance, and conceptual changes aligned with national strategies on digital transformation, AI, smart cities, and cybersecurity. Evidence is drawn from recent policy frameworks and project data provided by ministries, local administrations, and public agencies. Overall, the analysis shows that digitalization and data use have generated measurable improvements in efficiency and citizen satisfaction in public service delivery in Turkiye.

Applications in energy, environment, health, and governance have produced concrete gains. The e-Plan Automation System has accelerated spatial planning processes, while smart transport programs have reduced fuel consumption and emissions. Other innovations include the Smart Appointment System, which has shortened waiting times, and the Medical Device Recovery Model, which has lowered costs. These examples demonstrate that digital tools can systematically improve efficiency and resource management in the public sector.

Three innovative cases illustrate scalable, system-level impact. First, the Museum National Information System has enabled the digitization of over a million artifacts, significantly reducing processing time and labor requirements. Second, the Traffic Safety Analysis Platform integrates national and local accident data to support targeted interventions, saving billions of Turkish lira through unified analytics and shared infrastructure. Third, the AI-Supported National Mammography Reporting System (MM Screening) has accelerated the analysis of millions of mammograms, prioritizing suspicious findings with high accuracy and enhancing early diagnosis processes.

Turkiye has established a robust institutional and policy framework to support these advances. In this respect, the Twelfth Development Plan, National AI Strategy, and Digital Turkiye Roadmap provide strategic direction for innovation in governance, while the Presidential Digital Transformation Office, Law No. 5018, and Scientific and Technological Research Council of Turkiye (TÜBİTAK) programs ensure coherence, accountability, and resource continuity. High digital literacy among a young population and the widespread adoption of e-government and smart city initiatives have further accelerated Turkiye's progress.

To consolidate these achievements, the government has implemented key policy measures focusing on strengthening the national innovation framework across AI, open data, and interoperability;

embedding innovation and efficiency indicators into institutional plans; expanding continuous training in data analytics and automation; institutionalizing public–private–academia collaboration; and enhancing local innovation capacity through development agencies and municipal laboratories.

Overall, Turkiye's trajectory in public sector innovation is increasingly data-driven, citizen-centric, and outcome-oriented. With continued coordination, capacity building, and fiscal discipline, the leading models documented in this report can be replicated nationally and achieve sustainable impact.

BACKGROUND

Public sector innovation in Turkiye is defined as the application of digital technologies, data-driven decision-making tools, and innovative governance models to enhance the efficiency, accessibility, and sustainability of public services. This approach encompasses not only technological innovation but also process, service, governance, and conceptual innovations. Within this framework, Turkiye's vision for innovation and corporate governance in public administration is expressed as "a Turkiye that has established and operates an original, innovative, and human-development-oriented corporate governance system in public administration." (Presidency of the Republic of Turkiye, Presidency of Strategy and Budget, 2018). Under the Eleventh Development Plan (2019–2023), the inclusion of corporate governance in public administration was considered an important starting point for creating awareness of innovation within public institutions. Accordingly, the Eleventh Development Plan's objectives focused on identifying the degree to which corporate governance values and innovation principles had been adopted in public administration, defining systemic changes needed to foster an innovative climate in human resource management, strengthening the public sector's capacity for evidence-based decision-making and policymaking, and supporting and disseminating integrated innovation practices at different scales.

The Presidency of Digital Transformation Office (CBDDO) defines innovation as "the use of digital transformation and next-generation technologies to deliver citizen-centric, data-driven, participatory, and effective public services." Similarly, the Twelfth Development Plan (2024–2028) conceptualizes innovation as "increasing efficiency and effectiveness in the public sector through the integration of digital transformation, artificial intelligence, big data, open data, and blockchain technologies into public processes" (Presidency of the Republic of Turkiye, Presidency of Strategy and Budget, 2023). This framework aligns with the OECD's approach to government innovation, which emphasizes human-centered, inclusive, accessible, adaptive, and data-informed public services designed to generate better outcomes for citizens and strengthen trust in public institutions (OECD, 2024).

Public sector innovation in Turkiye is structured around the axes of digitalization, efficiency, and sustainability. At the national level, innovation aims to improve the quality and speed of public services through instruments such as digital transformation, open data, process automation, and AI integration. At the local level, municipalities operationalize innovation through smart city initiatives, e-municipality services, and citizen-oriented service design.

Innovation policies in Turkiye are explicitly reflected in institutional regulations and top-level policy documents:

- The Twelfth Development Plan (2024–2028) aims to enhance service quality and e-government use through digital transformation, AI, and data-driven governance in the public sector.

- The National Artificial Intelligence Strategy (2021–2025) and 2024–2025 Action Plan seek to strengthen the use of AI in public services, human capital, and decision support systems to achieve large-scale implementation.

- The National e-Government Strategy and Action Plan (2016–2019) sets out four objectives, 13 targets, and 43 actions to improve service quality, usage rate, and citizen satisfaction within the e-government vision.

- The Digital Turkiye Roadmap aims to accelerate digital transformation by integrating advanced technologies such as big data, IoT, and blockchain into public processes.

- The National Smart Cities Strategy and Action Plan (2020–2023) seeks to promote data-driven, stakeholder-collaborative, and citizen-focused smart city applications nationwide.

- The National Cybersecurity Strategy and Action Plan (2024–2028) targets the protection of critical infrastructure, development of national cybersecurity technologies, and enhancement of public sector cyber resilience. (Ministry of Industry and Technology of the Republic of Turkiye, 2021; Presidency of the Republic of Turkiye, Digital Transformation Office, 2020; Presidency of the Republic of Turkiye, Presidency of Strategy and Budget, 2023; Republic of Turkiye, 2003; Turkiye Smart Cities Portal, 2019).

These documents reflect the multilayered and integrated structure of public innovation policy in Turkiye. The country's public innovation infrastructure has rapidly diversified in recent years. At the center of Turkiye's innovation ecosystem lie the digital projects of the CBDDO, strategy and IT units within ministries, research and development (R&D) activities of TÜBİTAK Informatics and Information Security Research Center (TÜBİTAK BILGEM), and innovation laboratories established by municipalities. Development agencies, technology development centers, and joint university–public laboratories also contribute to strengthening Turkiye's public innovation capacity (TÜBİTAK BILGEM, 2023).

At the central level, the Presidency of Strategy and Budget steers innovation through development plans, the Ministry of Industry and Technology leads R&D and productivity programs, and the Ministry of Treasury and Finance ensures financial sustainability through public financial management reforms. Local governments advance citizen-oriented solutions via smart city platforms and digital municipal services, while academia and civil society play active roles in knowledge generation, human capital development, and the dissemination of social innovation.

The origins of public sector innovation in Turkiye date back to the planned development era. Scientific and technological progress became an integral part of public policy with the establishment of the State Planning Organization in 1960 and launch of the First Five-Year Development Plan in 1963. The simultaneous creation of TÜBİTAK institutionalized science and technology management in the country. (Sat, 2005)

The Public Financial Management and Control Law No. 5018, which entered into force on 1 January 2005, strengthened the institutional foundations of an innovation culture in public administration by introducing a strategic and performance-based management approach. Likewise, Law No. 5746 on Supporting Research and Development Activities, enacted in 2008, marked a major milestone in Turkiye's R&D capacity by promoting university–industry collaboration.

Over the past two decades, digital transformation, the technological adaptability of Turkiye's young population, and the growth of the entrepreneurship ecosystem have been key drivers accelerating public innovation. Public–private partnerships and the involvement of technology companies have further contributed to the diffusion of innovation.

Organized since 2014 by the Directorate General for Strategic Research and Productivity of the Ministry of Industry and Technology, the Productivity Project Awards (PPA) program aims to raise national awareness of productivity, promote knowledge and experience sharing among institutions, highlight successful projects, and encourage new initiatives. Open to both public institutions and private-sector organizations, the PPA have evolved into an institutional tradition within Turkiye's innovation culture. In addition to serving as an award mechanism, the PPA provide a platform for knowledge exchange and comparative learning among the public sector, private sector, and academia. Through the involvement of independent evaluators, experts, and project owners, the PPA program ensures that innovation extends beyond policy documents and translates into measurable outcomes and tangible social benefits (Ministry of Industry and Technology of the Republic of Turkiye, Directorate General for Strategic Research and Productivity, n.d.).

In conclusion, Turkiye's public innovation policy reflects a multilayered system supported by digital transformation, AI, e-government, smart cities, and cybersecurity strategies. This system seeks to build a data-driven, citizen-centric, and sustainable innovation culture within public administration.

ANALYSIS OF RESULTS OF INNOVATIONS AND THEIR LINK TO OUTCOMES

In recent years, innovative practices implemented across the public sector in Turkiye have diversified across process, service, governance, and conceptual innovation domains. This section focuses on public initiatives that stood out during the PPA process, assessing the tangible impacts of these innovations on productivity, efficiency, and citizen satisfaction.

Energy and Environmental Sustainability

The following projects have strengthened environmental sustainability at the institutional level by increasing energy and resource efficiency in public services:

- The Public Buildings Energy Efficiency (KABEV) project has reduced energy consumption in public facilities through the implementation of regular energy audits and improvement works, while enabling the transition toward self-powered public buildings. Consequently, both energy costs and carbon emissions have declined.

- Led by the Ministry of Foreign Affairs, the Solar Energy Project for African Embassies initiative has achieved energy independence and cost savings through the installation of solar panels, contributing to environmental sustainability.

- In Istanbul, the Water Efficiency Project has helped optimize water and resource usage in waste management facilities. This environmental management initiative has reduced water loss in urban cleaning operations by 90% and integrated circular economy principles into operational processes.

Digitalization and Automation

Digitalization initiatives have shortened processing times while improving transparency, reliability, and financial efficiency in public administration:

- The e-Plan Automation System has digitalized spatial planning processes, eliminating manual procedures and reducing processing times by 40%. The system's digital archive and online access capabilities have enhanced transparency by providing citizens with easy access to zoning plans.

- The Electronic Procurement System has enhanced competition and accountability in public procurement, reduced transaction costs, and increased inclusiveness by facilitating participation for small-scale enterprises.

- Led by the Ministry of Foreign Affairs, the Digital Integration Project has made financial documents from foreign missions available on digital platforms, accelerated data sharing among public institutions, and fully digitalized audit and control processes.

Education and Youth Engagement

The following initiatives have generated significant social outcomes in terms of educational access, youth digital literacy, and employment capacity:

- The Distance Education Gateway has promoted equal access to education by providing online training opportunities to both public personnel and citizens, enabling thousands of public servants to access training simultaneously. This initiative has contributed to establishing a culture of continuous professional development.

- The BIZ Youth Platform is a digital participation network supporting the academic, social, and cultural development of young people. The platform has reached hundreds of thousands of youth in a short time and strengthened their active participation in decision-making processes.

- The Turkiye Electricity Distribution Corporation (TEDAŞ) Digital Workshop Project has digitalized field operations to enhance occupational safety while offering digital training modules that equip young people with technical skills and support sectoral employment.

Transportation and Urban Services

Public sector innovations have generated both economic and environmental benefits in urban and intercity transportation:

- In Izmir, the Idling Time Reduction Project has used telemetry data to shorten the vehicle idling times of public buses, reducing fuel consumption by 5% and carbon emissions by 7%.

- The Energy Efficiency in Kayseri Light Rail System initiative has employed regenerative braking technology to reduce electricity consumption by 15%, lowering operational costs.

- The Republic of Türkiye State Railways Train Energy Optimization Project has improved train energy usage through modern traction management and data analytics, increased on-time performance rates, and improved service quality.

Health and Social Services

The following initiatives have enhanced both service efficiency and resource effectiveness of Turkiye's health system:

- The Smart Appointment System has balanced appointment scheduling in hospitals, reducing waiting times by 20% and increasing patient satisfaction.

- The Medical Device Recovery Program has refurbished and reused functional equipment, cutting costs by 30% while reducing waste and supporting sustainable resource utilization.

Governance Quality and Institutional Management

Governance-focused innovations have improved accountability and efficiency in resource utilization within public institutions:

- The Integrated Quality Management System has standardized performance criteria across public institutions, strengthening quality management processes and improving efficiency in auditing and reporting by 25%.

- The Budget Monitoring and Smart Logistics System has enabled real-time tracking of resource allocation, strengthening financial transparency and budget discipline.

- Adopting a circular economy approach, the Military Tailoring House's Recycling Project has repurposed thousands of textile products annually, achieving significant cost and waste reductions.

General Assessment

Public sector innovations in Turkiye have generated multidimensional benefits across the energy, digitalization, education, health, transportation, and governance domains. Energy and environmental initiatives have reduced costs and strengthened sustainability, while digitalization efforts have simplified bureaucratic procedures and improved transparency. Education, health, and transportation projects have directly enhanced citizen well-being. Meanwhile, governance and quality management systems have reinforced institutional capacity.

Three recent public sector innovations stand out for their scalability and potential for sustainable impact:

- The Museum National Information System (MUES) Digital Cultural Transformation Project has digitalized cultural heritage and made it accessible to millions of citizens.

- The Traffic Safety Analysis Platform has improved urban safety and accelerated decision-making through big data and AI-based analyses.

- MM Screening, an AI-based breast cancer screening application, has had a transformative impact on the health system by improving the early diagnosis of breast cancer and enhancing resource efficiency.

These examples illustrate that public sector innovation in Turkiye is not limited to technological advancements; rather, it represents data-driven, citizen-centered transformation grounded in measurable outcomes.

The following section provides an in-depth review of the three most prominent innovation cases in the Turkish public sector, namely, MUES, Traffic Safety Analysis Platform, and MM Screening, highlighting their scale, sustainability, measurable results, and success factors.

THREE BEST EXAMPLES OF PUBLIC SECTOR INNOVATION IN TURKIYE

Over the PPA's history, there has been a remarkable increase in both the quantity and quality of applications from public institutions. Since 2023, the proportion of public sector projects among applications has risen significantly, with innovative initiatives particularly prominent in the areas of digitalization, energy efficiency, health technologies, and governance.

Indeed, the number of public project submissions increased from 44 in 2021 to 84 in 2022, doubling within a single year, and reached its highest level in 2023 with 139 applications. A high participation level was maintained in 2024 with 104 submissions, indicating that innovation awareness within public institutions has been strengthened on a lasting basis.

Despite the growing number of applications, only a limited number reached the final stage of the competition. Among these, some have stood out for their potential to create transformative impact at the national level. Within this context, the three initiatives presented below (MUES, the Traffic Safety Analysis Platform, and MM Screening) have been identified as the most successful examples of public sector innovation in terms of scalability, sustainability, measurable outcomes, and adaptability to similar country contexts. The figures and case selections are based on the PPA finalist project summaries for 2022, 2023, and 2024 (PPA, 2022, 2023, 2024).

MUES

Background and Context

Over the past decade, global efforts toward the digitization of cultural heritage have accelerated. UNESCO's World Heritage Centre seeks to enhance the protection and accessibility of cultural heritage through online resources, while Google Arts & Culture, launched in 2011, digitizes museum collections from around the world and makes them accessible online through high-resolution images and virtual tours. The EU's digital culture platform, Europeana, brings together millions of digital objects with contributions from museums, libraries, and archives across Europe. Leading institutions such as the British Museum, Metropolitan Museum, Smithsonian Institution, and Rijksmuseum have made their collections accessible worldwide. However, these initiatives predominantly focus on fully open access and are not compatible with closed systems. Software applications such as Axiell Collections, Ke Software Electronic Museum, and PastPerfect Museum are provided under the monopoly of software companies through closed data environments.[1]

The MUES project is positioned between these two extremes. It distinguishes itself from global examples by being fully compliant with Turkiye's domestic legislation while remaining adaptable to the legislation of other countries when necessary; operating on the principle of "as open as

1 Axiell Collections is a commercial collection management program that provides cataloging, recording, and exhibition functions for museums and archives, but operates within a closed system. The Ke Software Electronic Museum (KE Emu) is professional software used for managing large and complex collections; it offers extensive customization options but remains commercial and closed-source. PastPerfect Museum is a cost-effective collection management tool commonly used by small and medium-sized museums; it includes features such as inventory recording, exhibition planning, and donor tracking.

possible, as closed as necessary"; and integrating interconnected institutional processes under a single umbrella. It is also the first project to enable nationwide digital transformation. Due to this original approach, MUES has become a digital transformation movement seeking to modernize museum services while ensuring data accuracy, ease of access, and resource efficiency.

With more than 2 million cultural assets, the need for transparency in public financial management, and pressures related to combating illicit trafficking, the MUES project has become a strategic imperative for Turkiye. The project is supported as a priority initiative under the presidency's 2023 targets and the Public Sector Ongoing Information Technology Projects Program (KABİT).

Purpose and Scope

Developed by the Ministry of Culture and Tourism of the Republic of Turkiye, MUES aims to deliver digital transformation in the field of cultural heritage by modernizing institutional operations, improving service quality, enhancing process efficiency, and making performance traceable. Its scope covers museology, private museum and collector management, prevention of illicit trafficking, and restoration and conservation services. To achieve these aims, MUES has developed integrated modules, namely, the Inventory, Laboratory, Commission, Anti-Smuggling, Private Museum & Collector, and Museum Information Systems.

Implementation Process

Within the scope of the MUES project, legislation, business processes, staffing structures, and resources related to services were analyzed in detail. Standard procedures and data protocols were then developed, and the first national standard datasets for cultural heritage management in Turkiye were prepared.

The systems were designed in alignment with legislation and physical processes, and software development and testing were carried out by TÜBİTAK BILGEM. Security was ensured through e-government integration, role-based authorization, backup procedures, and a disaster recovery center. Hardware and infrastructure were improved nationwide, and systems were commissioned in phases. For rollout, a "train-the-trainer" model was implemented and user manuals and guidelines were published. Data entry is performed by subject-matter experts, while technical support and updates are provided by the project team. The project has also applied methods for process improvement, automation, training, data analytics, collaboration, performance evaluation, and continuous improvement.

Type, Sector, Level of Administration, Contextual Factors, and Institutions and Actors

The MUES project encompasses dimensions of process, product/service, governance, and conceptual innovation. It focuses on the protection of cultural heritage, museology, restoration, and combating illicit trafficking in the public sector.

At the national level, the MUES project falls under the Ministry of Culture and Tourism. Provincial organizations are responsible for data entry, while national and local law enforcement, Interpol, private museums and collectors, and researchers have been integrated into the system as external stakeholders.

Contextual factors include Turkiye's extensive cultural heritage assets, the presidency's strategic priorities, demands for transparency in public financial management, and international pressures.

The project's key institutions and actors include the General Directorate of Cultural Heritage and Museums, which manages the project, as well as TÜBİTAK BILGEM, the Ministry of Culture and Tourism's Directorate General of Information Technologies, administrative units, museum and laboratory directorates, researchers, law enforcement, and citizens.

Success Factors

The MUES project is premised on the vision of establishing a single, integrated digital museology infrastructure at the national scale. To achieve this vision, the project seeks to standardize datasets, accelerate processes through automation, and implement evidence-based decision-making mechanisms. One of the project's distinctive features is its flexible access approach balancing open and restricted access. The project's innovation lies in its use of AI-supported visual search technology to combat illicit trafficking.

Structurally, MUES has a modular architecture comprising the Inventory, Laboratory, Commission, Anti-Smuggling, Private Museum & Collector, and Museum Information Systems modules. The system is supported by security elements such as e-government integration, role-based authorization, backup, and a disaster recovery center. Moreover, a standardized infrastructure has been established nationwide through hardware and network improvements.

At the organizational level, integration with the presidency's monitoring mechanism and the Ministry of Culture and Tourism's strategic plans has played an important role in the project's trajectory. Together with inspection and internal control mechanisms, published government directives and circulars have strengthened institutional ownership. Development and operational activities are carried out through a collaboration triangle among the General Directorate of Cultural Heritage and Museums, TÜBİTAK BILGEM, and the Ministry of Culture and Tourism's Directorate General of Information Technologies. The "train-the-trainer" model supports rollout, while continuous technical support ensures the system's operability.

In terms of results, three main modules, namely, Inventory, Laboratory, and Anti-Smuggling, have been operationalized, with the other modules planned for commissioning in 2026. To date, 1,520 personnel, 351 buildings, 2,392 sites, and 19,644 sub-locations have been registered in the system. A total of 1,030,000 artifacts have been digitized, 1.5 million photographs have been uploaded, and the digitization rate has reached 52%. In the Laboratory module, processes for 200 artifacts have been completed, and 55 analysis reports have been recorded in the materials database. In the Anti-Smuggling module, 2,404 incident scenes, 2,347 cases, and 493,000 artifacts are being actively monitored, including 24 overseas cases and 21,000 artifacts identified abroad. Between 2014 and 2025, TRY8.8 million was invested in hardware. Additionally, during this period, the digital skills of approximately 1,500 personnel have been enhanced through training provided by 300 trainers. The project's long-term target is the digitization of 2 million artifacts by 2028.

The MUES project has had a striking impact on operational performance. Query and reporting times have dropped from days to just 0.02 seconds. Documents such as restoration reports, artifact delivery records, and depot inventory reports can now be prepared instantly. Restoration prioritization process times have been reduced from weeks to 0.02 seconds, research time has decreased by 90%, and time efficiency has increased tenfold. Consequently, comparative analyses can be completed within days instead of months.

Examining overall outputs, 140 business processes in cultural asset management have been optimized, and a dataset of approximately 15,000 rows has been standardized. The artifact inventories of 215 public museums across Turkiye have been digitized, with approximately 2 million high-resolution photographs taken. Annual labor savings of TRY5.4 million have been achieved. Museum research that previously took 40 days with physical access has been reduced to 10 days, representing a cost saving of 99.78% for researchers. The error rate in data entry has fallen from 5% to 0.5%, and accuracy has risen to 99.5%. In addition, 21,000 pages of paper have been saved annually, while process speeds have increased by up to 21.6 million times.

As an entirely domestically developed technology, MUES is a pioneering example of nationwide digital transformation in the field of cultural heritage. Efforts have been initiated to disseminate the project internationally, particularly in the Turkish Republic of Northern Cyprus and Azerbaijan.

Traffic Safety Analysis Platform

Background and Context

With a steadily increasing population, traffic congestion in cities has become a critical problem, complicating emergency response processes and leading to higher accident rates. Transportation solutions offered by smart city applications have made it possible to shorten travel times, protect life and property in traffic, and increase transport efficiency.

The Traffic Safety Analysis Platform was developed under the Smart Transportation component of the 2020–2023 National Smart Cities Strategy and Action Plan, one of 16 components of this action plan. In this context, the project's core objective is to increase smart city technical capacity, contribute to transformation processes of local administrations, and expand the use of data-driven decision support systems.

Within the framework of the 2020–2023 National Smart Cities Strategy and Action Plan and the 2021–2023 Road Traffic Safety Action Plan, the Traffic Safety Analysis Platform was implemented as a pioneering smart city application in the field of transportation to enhance traffic safety, ensure the effective use of traffic data, and identify accident black spots.

Purpose and Scope

The project's main purpose is to establish decision support mechanisms to improve traffic safety. In doing so, the project aims to reduce the loss of life and property, identify security vulnerabilities, and facilitate the development and implementation of effective measures. At the same time, it aims to support the proper planning of investments and ensure the efficient use of public resources by preventing duplicative software expenditures.

Within this scope, historical accident data, traffic characteristics, seasonal and climatic conditions, road conditions, and information on vulnerable road users were collected from different institutions and combined within a central structure. By establishing this central structure, which covers users from more than 1,200 local administrations and relevant public institutions and organizations in Turkiye, an integrated big data framework and a web-based decision support mechanism were created. This has enabled the identification of accident black spots and the analysis and reporting of data related to traffic safety. The project has also addressed the technical capacity needs of local administrations in the fields of smart cities and traffic safety, generating savings in business processes.

Implementation Process

Within the project scope, a literature review was prepared covering traffic accidents, accident black spots, and factors affecting traffic safety. National and international good practices were examined to establish the knowledge base required for the platform's design. Subsequently, fatal, injury, and property-damage accident data collected by the Data Center of the Ministry of the Interior (IVME) and the Insurance Information and Monitoring Center were integrated into the Ministry of the Interior's data infrastructure under approved protocols. Consequently, data dispersed across different institutions were brought together in a central structure and made accessible.

Algorithms developed to identify accident black spots were used to accurately identify areas with high accident density. In addition, advanced open-source statistical tools were prepared to enable the analysis of factors such as accident severity, type, weather and time of day, and road and environmental conditions; these tools are customizable to user needs.

In the final stage, the web-based Traffic Safety Analysis Platform enabled users to access the system based on authorization levels, filter by parameters, and generate detailed reports. User undertakings were obtained for data privacy, training and guidance were provided to local administration staff, and briefings were delivered to senior management.

Type, Sector, Level of Administration, Contextual Factors, and Institutions and Actors

The Traffic Safety Analysis Platform is a smart city application focused on process and governance innovation and digital transformation. Leveraging open-source components to ensure a flexible and scalable structure, the platform directly contributes to transportation safety, smart city applications, geographic information systems, urban planning, and public safety within the public sector.

The project was developed at the national level by the central government and designed for use by local administrations. Various public institutions can also benefit from the platform. Supported by strategic plans, this structure presents a multilayered governance model across ministries and municipalities. Increasing traffic density, accident rates, and accident-related loss of life, validated by recent data from the Turkish Statistical Institute, underscore the urgent need for intervention. In this respect, while national strategies and action plans provide a strategic framework for the project, national priorities such as preventing duplicative investments and advancing digital transformation strengthen the contextual rationale.

The project was implemented by the General Directorate of Geographical Information Systems of the Ministry of Environment, Urbanization and Climate Change. IVME and the Insurance Information and Monitoring Center are the main stakeholders. End beneficiaries include the General Directorate of Security; Gendarmerie General Command; Turkish Statistical Institute; and metropolitan, provincial, and district municipalities.

The platform directly contributes to the targets of the Road Traffic Safety Action Plan and related performance indicators. The need to meet these targets and related indicators has facilitated the adoption and dissemination of the Traffic Safety Analysis Platform by relevant public institutions and organizations, particularly local administrations.

Within the framework of the 2020–2023 National Smart Cities Strategy and Action Plan, the development and dissemination of data-driven, stakeholder-collaborative, and citizen-focused

smart city applications are targeted. In this respect, the Traffic Safety Analysis Platform supports the objectives set out in national-level strategy documents and action plans.

Success Factors

The Traffic Safety Analysis Platform is based on the vision of establishing a centralized traffic safety infrastructure on a national scale by standardizing data, accelerating processes through automation, and embedding evidence-based decision-making mechanisms. This vision has been strengthened by the use of open-source software, the elimination of dependence on foreign license costs, and AI-supported analyses of accident black spots.

The platform collects accident data in a centralized database and processes them using AI and statistical analysis methods. The platform has been enhanced by the addition of filtering and visualization capabilities and statistical tools customizable to institutional needs. To ensure data privacy, usage data were obtained, user definitions were established under ministry supervision, and necessary cybersecurity measures were implemented.

The project was carried out under ministerial coordination and data-sharing protocols were signed with stakeholder institutions. In addition, training and capacity-building activities were conducted for local administrations. The platform has been continuously improved through senior management support and user feedback.

The platform not only conducts data analysis but also encourages local administrations to implement concrete measures aimed at preventing traffic accidents and improving traffic safety. By analyzing the causes of traffic accidents and their concentration areas, the platform has contributed to safety planning, alleviated the burden on emergency health services, and produced environmental benefits by optimizing traffic congestion.

As the platform was developed through domestic and national capabilities, cost savings at current prices are estimated at approximately TRY434 million across 81 provinces and approximately TRY7.5 billion across 1,402 municipalities, preventing duplicative investments. Therefore, the Traffic Safety Analysis Platform provides a sustainable and cost-efficient national structure for improving traffic safety.

AI-Supported MM Screening

Background

MM Screening is a national mammography reporting system that addresses the need to report and manage mammography results quickly, accurately, and efficiently for the early diagnosis of breast cancer. Breast cancer is one of the most common types of cancer among women in Turkiye, and early diagnosis significantly increases treatment success. Therefore, a comprehensive screening approach has been adopted at the national level, and the MM Screening system has been implemented.

In Turkiye, Cancer Early Diagnosis, Screening, and Training Centers (KETEM) provide free breast cancer screening services to women between the ages of 40 and 69. Under the national screening program, established in line with the recommendations of the World Health Organization (WHO), women receive counseling on breast self-examination, an annual clinical breast examination, and a mammogram every two years. Mammography scans are evaluated by radiologists via the MM Screening system.

Normal and benign findings in the Breast Imaging Reporting and Data System (BI-RADS) 1–2 categories are followed up, and patients are advised to have repeat imaging every three years.[2] For BI-RADS 0, 4, and 5 categories, patients are referred for further examinations, such as additional imaging, ultrasound, magnetic resonance imaging (MRI), or biopsy.

However, under current processes, the time from mammography to the start of treatment can exceed 65 days. This creates a serious delay in breast cancer cases where early diagnosis is critically important. In this context, the development of an AI-supported prioritization system aims to detect suspicious findings in a shorter time, thereby accelerating the diagnostic process and increasing treatment success.

Purpose and Scope

The MM Screening initiative's primary purpose is to facilitate the early diagnosis of breast cancer, increase treatment success, reduce mortality rates, and improve the effectiveness of health services. Within this scope, a national program providing free breast cancer screening services to women aged 40–69 has been established, processes have been accelerated through an AI-supported reporting infrastructure, and the reliability of results has been increased.

The MM Screening project involved establishing and maintaining a central platform for the reporting and management of mammograms conducted by KETEM. Digital images are collected and evaluated according to the BI-RADS classification, and suspicious cases are referred for further examination. All processes are optimized using an AI-supported prioritization system. This has reduced the time between application and treatment, balanced the workload of health personnel, and established a sustainable model for screening services at the national level.

Implementation Process

The project began with a needs analysis and the determination of system requirements, followed by software development and testing processes. AI algorithms were trained and integrated into the system, pilot implementations were carried out in selected regions, and the functioning of the system was tested. During this process, user training sessions were organized, system integration was completed, and full-scale implementation commenced. Continuous monitoring and improvement mechanisms were implemented to ensure the project's continuity.

In terms of efficiency, algorithms were optimized using feedback from different radiologist assessments, agile methodology was integrated into the software development process, and AI-supported prioritization of mammography results was enabled through data analytics. Consequently, the speed, accuracy, and usability of the system were improved.

Key risks and challenges encountered during the project included data security and patient privacy, technical infrastructure deficiencies, the accuracy level of AI algorithms, user adaptation, and specialists' trust in AI results. These issues were effectively managed through strong encryption

2 The BI-RADS was developed by the American College of Radiology (ACR) to standardize the reporting of mammography and other breast imaging modalities.
BI-RADS 0: Additional imaging evaluation is required. The mammographic findings are inconclusive, and further assessment is recommended.
BI-RADS 1: Negative. No findings are observed.
BI-RADS 2: Benign finding. The finding is not associated with malignancy.
BI-RADS 4: Suspicious abnormality. Malignancy is possible, and biopsy should be considered.
BI-RADS 5: Highly suggestive of malignancy. A biopsy is strongly recommended for definitive diagnosis.

and access controls, infrastructure investments, continuous updating of algorithms, a dual-control system, comprehensive training programs, and technical support mechanisms.

Type, Sector, Level of Administration, Contextual Factors, and Institutions and Actors

MM Screening is an AI-supported digital health solution. The project stands out as a digital transformation initiative featuring process innovation, decision support systems, and AI integration in health services. By ensuring that breast cancer screenings are reported more rapidly, accurately, and in a standardized manner, MM Screening constitutes an innovative example in terms of both clinical operations and health policy.

Positioned within the health sector, the project directly contributes to public health, cancer screening, radiology services, and digital health technologies. Conducting breast cancer screening programs in an integrated, AI-supported digital environment is a transformative innovation that improves the quality of health services, strengthens efficiency, and ensures standardization at the national level.

From an administrative perspective, the project was developed centrally by the Ministry of Health of the Republic of Turkiye but designed to be implemented in the field through KETEM units and local health institutions. Therefore, the project required strong coordination between central administration and local health units, establishing a multilayered governance model.

Regarding contextual factors, breast cancer is one of the most common types of cancer among women in Turkiye, making early diagnosis critical. In screening programs conducted in line with WHO recommendations, diagnostic periods can exceed 65 days, risking patient safety. This further underscored the need for an AI-supported system able to improve efficiency and reduce diagnostic delays. As such, national digital health strategies, the importance of early diagnosis in the fight against cancer, and efficiency goals in health services are among the key contextual factors enabling the MM Screening project.

With respect to institutions and actors, the project is carried out under the coordination of the Ministry of Health, while the CBDDO, KETEM units, AI specialists, software developers, data scientists, and technology partners have played key roles in the project. While radiologists, health professionals, and field practitioners are the direct users of the system, individuals across society who benefit from early diagnosis opportunities constitute the broad stakeholder group that benefits indirectly from the project.

Success Factors

MM Screening is premised on the goal of establishing a centralized mammography reporting infrastructure at the national level by standardizing data, digitizing processes, and establishing evidence-based decision-making mechanisms. AI-supported prioritization, the use of open-source software, and the elimination of dependence on foreign license costs have strengthened this vision.

Structurally, the project is based on collecting mammography results in a centralized database and analyzing them using AI algorithms. To this end, software development and testing processes were carried out, the algorithms were trained and integrated into the system, pilot implementations were conducted to verify system functioning, user training sessions were conducted, and full-scale implementation was initiated. To ensure data privacy, security protocols and encryption methods were applied, and patient confidentiality was strictly protected.

At the organizational level, the project was conducted under the coordination of the Ministry of Health, with the participation of the CBDDO, KETEM units, software developers, data scientists, radiologists, and technology partners. Continuous cooperation mechanisms were established, senior management support was ensured, and the system was continuously improved based on user feedback.

In terms of results, the project has achieved tangible gains in the fight against breast cancer by increasing early diagnosis rates. There has been a tenfold reduction in the time required to evaluate suspicious findings. To date, more than 1.5 million mammography images have been analyzed by the AI algorithm. In these evaluations, suspicious findings were detected with 87% accuracy and presented to radiologists on a prioritized basis. As a result, the workload of radiologists has decreased, reporting processes have accelerated, and patient prioritization has become more effective.

The project has also strengthened the harmonization of reporting standards among health professionals, produced time and cost savings in health services, and optimized resource utilization. It has increased the effectiveness of treatment processes by contributing to more accurate and faster decision-making by radiologists. The MM Screening project has also reduced the cost burden on the health system by enabling more efficient use of resources in emergency and advanced diagnostic processes. Significantly, at the societal level, higher rates of early diagnosis have had a direct positive impact on patients' life expectancy and quality of life.

Overall, the project has accelerated the digital transformation of Turkiye's health sector and established a sustainable structure aligned with the strategic objectives of the national health system.

Comparative Synthesis of the Three Public Sector Innovation Cases

Before moving on to the analysis of innovation types, Table 1 provides a comparative synthesis of the three cases across their key dimensions.

TABLE 1

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN TURKIYE.

Dimension	Museum National Information System	Traffic Safety Analysis Platform	National Screening Mammography Reporting System
Innovation type	Process and governance innovation achieved through the establishment of a national digital registry and analytics platform for cultural heritage	Smart city-oriented process and governance innovation based on big data analytics for traffic safety	Product/service and process innovation using AI-supported national screening and reporting for breast cancer detection
Primary goal	To digitize and standardize the management of cultural assets, ensure traceability, and combat illicit trafficking	To reduce traffic accidents and congestion by identifying accident black spots and supporting data-driven policy and infrastructure decisions	To improve the early diagnosis of breast cancer, standardize screening workflows, and increase the accuracy and speed of reporting at the national level

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Dimension	Museum National Information System	Traffic Safety Analysis Platform	National Screening Mammography Reporting System
Level of government	National cross-sector system led by the Ministry of Culture and Tourism, integrated with central e-government infrastructure and used by museums and security forces, among others	National framework developed by central government, serving metropolitan and district municipalities and other local authorities under the National Smart Cities Strategy	National health system initiative led by the Ministry of Health, implemented across Cancer Early Diagnosis and Screening and affiliated hospitals nationwide
Main success factor	Strong legal and procedural framework, modular architecture, 100% domestic technology, and integration with presidential digital systems, enabling standardization and interoperability	Centralized accident and traffic database, advanced analytical algorithms, and effective coordination between central government and local administrations within the smart city policy framework	AI-supported diagnostic algorithms, standardized clinical protocols, strong data security and governance, and comprehensive training and support for health professionals
Impact	• More than 2 million cultural assets targeted for digitization • Standardization of 140 business processes in cultural heritage management • Time required for comparative analyses reduced from months to days	• Systematic identification of accident black spots • Targeted interventions for infrastructure and enforcement • Improved traffic safety and operational efficiency • Environmental benefits through reduced congestion	• Since early 2024, over 1.5 million mammograms triaged, with around 87% AI accuracy • Reporting times accelerated • Prioritization of high-risk cases improved • National coverage of screening services strengthened

Source: Author's analysis of data submitted to the PPA (2024).
Note: PPA, Productivity Project Awards.

ANALYSIS OF INNOVATION TYPES ASSOCIATED WITH INNOVATIONS IN TURKIYE

Innovative practices implemented in the public sector in Turkiye display a wide variety that can be assessed under different categories. In this section, these practices are examined in the context of process, product/service, governance, and conceptual innovations (Table 2).

TABLE 2

COMPARATIVE SYNTHESIS OF THREE PUBLIC SECTOR INNOVATION CASES IN TURKIYE.

Innovation Type	Example Applications	Primary Impact Area	Relationship between Productivity and Innovation
Process innovations	Energy Efficiency in Public Buildings, e-Plan Automation System, Electronic Procurement System, and Smart Appointment System	Digitalization of operational processes, resource optimization, and reduction of error rates	Strongest relationship observed in this group; time and cost efficiency improved by approximately 50–90%
Product/service innovations	BIZ Youth Platform, Distance Education Gateway, TEDAŞ Digital Workshop, and MM Screening	Increased accessibility and quality in citizen-facing service delivery	Directly improves citizen satisfaction and service quality, and strengthens social productivity and inclusiveness

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Innovation Type	Example Applications	Primary Impact Area	Relationship between Productivity and Innovation
Governance innovations	Ministry of Foreign Affairs Digital Integration Project, Budget Monitoring and Smart Logistics System, Integrated Quality Management System, and Traffic Safety Analysis Platform	Transparency, accountability, and interinstitutional data sharing	Creates an indirect yet lasting impact, accelerates decision-making processes, and increases data-driven management capacity
Conceptual innovations	Museum National Information System Digital Cultural Transformation, BIZ Youth Platform, and AI-Supported National Mammography Reporting System	Paradigm shift in public policy; strategic positioning of digital strategies and research priorities	Although represented by fewer cases, it carries long-term transformation potential and supports a culture of strategic innovation

Source: Author's analysis of data submitted to the PPA (2022, 2023, 2024).
Note: PPA, Productivity Project Awards; TEDAŞ, Turkiye Electricity Distribution Corporation.

Process Innovations

Process-oriented innovations constitute the most dominant type of public innovation in Turkiye. Examples of process-oriented innovations that have improved efficiency include the KABEV initiative, which focuses on energy audits and savings in public buildings; the project to reduce the idling time of Izmir's urban buses; and the Kayseri light rail energy efficiency initiative. Other examples include the e-Plan Automation System, which has digitized spatial planning, and the Electronic Procurement System and the Smart Appointment System, which have accelerated manual workflows to generate both time and cost savings. Such innovations have generally resulted in increased operational efficiency, reduced error rates, and optimized resource use.

Product and Service Innovations

Product and service innovations encompass applications that have directly transformed citizen-facing service delivery. For example, the BIZ Youth Platform has combined youth socio-cultural, academic, and sports development under a single digital umbrella. Another example is the Distance Education Gateway, which has facilitated service delivery by providing online training opportunities to hundreds of thousands of public personnel. In the health field, the MM Screening project and the Medical Device Recovery initiatives stand out as new service models. Meanwhile, the TEDAŞ Digital Workshop is a service innovation that directly affects occupational safety and human capital development. This type of innovation is characterized by a citizen-centered approach and improvements in service quality.

Governance Innovations

Governance innovations include practices that strengthen transparency, accountability, and interinstitutional coordination. Examples include the Digital Integration Project, which has ensured seamless interoperability among public institutions, and the Budget Monitoring and Smart Logistics System, which has enabled the real-time traceability of public resources. The Integrated Quality Management System has standardized performance criteria in public institutions, generating a significant transformation in quality management. Another example is the Traffic Safety Analysis Platform, which provides objective, data-based support for decision-making processes by integrating data from different institutions. Such innovations have made governance structures more transparent, accountable, and data-driven.

Conceptual Innovations

Although fewer in number, conceptual innovations have the potential to change the framework of public policy. In Turkiye, the MUES Digital Cultural Transformation initiative has defined a new paradigm for the protection of cultural heritage and public access, symbolizing the transformation of cultural policy through digitalization. Similarly, the BIZ Youth Platform has introduced "digitalization" as a new norm in youth participation, thereby generating innovation at the conceptual level. In the health domain, AI-supported screening practices like the MM Screening initiative have built a new understanding of how "early diagnosis" will be positioned in the future.

Public sector innovations in Turkiye are predominantly shaped by process innovations, although product/service innovations are gaining momentum. Governance innovations support transparency and data-driven operations within public institutions. Although relatively fewer cases of conceptual innovation were observed in this report, the strategic effects of such innovations suggest that they steer the course of long-term transformation.

ANALYSIS OF CONTEXTUAL FACTORS

The development of public sector innovations in Turkiye is shaped by the interaction of economic, geographic, political, and social factors.

Economic Factors

Over the past two decades, growth and digital transformation policies have prioritized efficiency and resource optimization in public investments. Under the Public Financial Management and Control Law No. 5018, performance-based budgeting has enabled innovation-driven productivity measurement within public institutions. Together, Law No. 5746 on R&D and TÜBİTAK support mechanisms strengthen public–private–academia collaboration and ensure the economic sustainability of innovative solutions. In particular, public–private partnerships and digital transformation investments are key instruments that reinforce the financial foundations needed for innovation.

Political and Institutional Factors

The Presidential System of Government has strengthened the central coordination of digital transformation and innovation in Turkiye. Institutions such as the CBDDO, Presidency of Strategy and Budget, and Ministry of Industry and Technology ensure policy coherence through national strategy documents such as the National AI Strategy, Twelfth Development Plan, and Digital Turkiye Roadmap. In addition, the wider adoption of internal control, performance management, and quality systems in public institutions has paved the way for institutional innovation.

Social and Demographic Factors

Turkiye has a young population characterized by rapid adaptability to technology. This demographic profile is an important dynamic that facilitates the uptake of public innovations. High mobile technology penetration supports the widespread use of online public services. Rising educational attainment, improvements in digital literacy, and the strengthening of public personnel's digital skills have accelerated the conversion of innovation into institutional capacity. At the same time, citizen participation in governance through e-government and mobile platforms has promoted a participatory and data-driven transformation in public services.

Geographic Factors

Turkiye's large land area and diverse geographic conditions have amplified the variety of innovation practices. While technology-based solutions for transportation have been popular in metropolitan areas, energy efficiency and digitalization initiatives have drawn attention nationwide on account of their scalable structures. In this respect, energy efficiency applications have been designed for deployment in both major cities and across the country. Moreover, Turkiye's exposure and vulnerability to natural disasters, including earthquakes, has heightened the importance of sustainability, digital archiving, and risk management practices in public administration. This has made the expansion of digital services and the e-government infrastructure a strategic priority. Innovations such as smart city applications, transportation analytics, and energy efficiency projects often began as pilots in large cities and were subsequently expanded nationwide.

General Assessment

The success of public sector innovations in Turkiye is closely related to the efficiency pressures created by economic constraints, political incentive mechanisms, the digitalization demands of a young population, and the country's broad geographical scale. Table 3 summarizes the main contextual factors shaping productivity and innovation in Turkiye's public sector and their primary mechanisms of impact.

TABLE 3

FACTORS SHAPING PUBLIC SECTOR INNOVATION IN TURKIYE: POLICY EXAMPLES, IMPACT MECHANISMS, AND EFFECTS ON PRODUCTIVITY.

Factor Category	Examples of Policy or Practice	Primary Impact Mechanism	Effect on Productivity and Innovation
Economic factors	Public Financial Management and Control Law No. 5018 Law No. 5746 on Supporting R&D TÜBİTAK supports/programs	Performance-based budgeting, increased resource efficiency, and rise in R&D investments	Strengthens financial sustainability and cultivates a productivity-oriented innovation culture
Geographic factor	Smart city projects Regional programs of development agencies	Reduction of urban–rural disparities and development of local innovation capacity	Supports balanced regional development and strengthens local innovation ecosystems
Political/ institutional factors	Presidency of Digital Transformation Office Twelfth Development Plan (2024–2028) National AI Strategy (2021–2025)	Policy coherence, institutional coordination, and strategic management	Systematizes public innovation and steers digital transformation initiatives
Social/ demographic factors	High technology adoption among the young population Widespread use of e-government and mobile platforms In-service and continuous training for public personnel	Increases digital literacy and strengthens citizen participation	Encourages participatory, data-driven, and citizen-centric public innovation

Source: Author's compilation based on national policy documents, 2025.
Note: R&D, research and development.

As such, economic and political stability, robust investments in digital infrastructure, and the rise of digital awareness at the societal level are the principal contextual determinants of innovation and productivity growth in the public sector in Turkiye. Although regional disparities and the complexity of bureaucratic procedures continue to pose challenges, national digitalization programs implemented in recent years have contributed to overcoming these barriers. In conclusion, the most critical contextual factors supporting innovation in Turkiye are political stability, digital transformation capacity, the technological adaptability of the young population, and the strengthening of public–private partnerships.

KEY DRIVERS OF IMPROVEMENT

- Strong policy and institutional framework: The Twelfth Development Plan (2024–2028), National AI Strategy (2021–2025), and Digital Turkiye Roadmap provide a holistic direction and long-term continuity for public sector innovation in Turkiye.
  Central coordination and leadership: CBDDO assumes a high-level governance role that aligns public institutions with data-driven, citizen-centric digital transformation goals.

- Performance-based public administration approach: Through the Public Financial Management and Control Law No. 5018, the principles of strategic planning, performance-based budgeting, and accountability have been institutionalized, creating a results-oriented management culture that supports innovation.

- Public–private–academia collaboration: Law No. 5746 on R&D and TÜBİTAK support have strengthened cooperation among universities, technology firms, and public institutions. Joint projects and knowledge sharing have accelerated innovation.

- Digital infrastructure and e-government ecosystem: The e-Government Gateway, smart city platforms, and integrated data systems have increased the speed, accessibility, and transparency of public services.

- Young and technologically adaptable population: Turkiye's young workforce rapidly adapts to digital tools, facilitating the diffusion of innovative practices in the public sector.

- Capacity building and human capital investments: Programs such as the Distance Education Gateway and the TEDAŞ Digital Workshop have improved the digital literacy and analytical skills of public sector personnel.

- Open data and AI use: The integration of AI, big data, and open data policies has strengthened evidence-based decision-making processes and process automation.

- Local and regional innovation networks: Development agencies and municipal innovation laboratories (e.g., smart city projects in Izmir and Kayseri) disseminate innovation from the central to the local level.

- Recognition and incentive mechanisms: The PPA program promotes knowledge sharing between the public and private sectors and increases the visibility and sustainability of successful projects.

RECOMMENDATIONS

1. Strengthen the national strategic framework to institutionalize public sector innovation: Develop a national innovation strategy that addresses and coordinates digital transformation, AI, open data, and productivity policies.

2. Make innovation a systematic performance indicator within public institutions: Integrate innovation and productivity indicators into institutional strategic plans and establish a monitoring and evaluation system with measurable targets.

3. Scale up continuous training programs to enhance the digital skills of public sector personnel: Develop modular training programs for public sector personnel, with a focus on data analytics, AI literacy, and process automation.

4. Institutionalize public–private–academia collaboration models: Establish joint R&D and pilot implementation platforms among universities, technology companies, and public institutions and strengthen knowledge-sharing mechanisms.

5. Support mechanisms that increase innovation capacity at the local level: Expand regional innovation laboratories and smart city initiatives through development agencies and municipalities.

6. Standardize open data, interoperability, and AI-based decision support systems: Regulate interinstitutional data sharing and security and privacy principles, and make data-driven approaches mandatory in decision-making processes.

7. Increase the visibility of successful innovation cases: In addition to expanding good-practice platforms such as the PPA, a national "Public Innovation Portal" should be established to support knowledge sharing and learning.

8. Diversify innovation financing and incentive mechanisms: Create funds and award schemes for innovative projects in public institutions and apply performance-based resource allocation.

9. Strengthen leadership capacity to drive cultural transformation in the public sector: Implement dedicated programs for senior executives on innovative leadership, change management, and digital strategy development.

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RESEARCH ON BUILDING A CULTURE OF PRODUCTIVITY AND INNOVATION IN THE PUBLIC SECTOR OF VIETNAM

EXECUTIVE SUMMARY

Vietnam's public sector has undergone significant transformation over the past decade, with the country moving toward a digital, transparent, and productivity-driven governance model. The Government of Vietnam has made public sector innovation a national priority, emphasizing administrative reform, digital transformation, and results-based management as central strategies to enhance public service delivery, economic competitiveness, and citizen satisfaction.

Prepared under the Asian Productivity Organization (APO) research project, "Building a Culture of Productivity and Innovation in the Public Sector in APO Member Economies," this report provides an analytical overview of Vietnam's current progress, challenges, and policy directions in embedding innovation and productivity into the operations of government institutions. The research is based entirely on secondary data, including national policy documents, official reports, and studies from international organizations such as the ADB, WB, and OECD.

Vietnam's approach to public sector innovation is closely aligned with its broader national strategies, notably the National Digital Transformation Program (The Prime Minister, 2020); Science, Technology, and Innovation (STI) Strategy to 2030 (Decision No. 569/QĐ-TTg) (The Prime Minister, 2022a); Resolution No. 18-NQ/TW on Streamlining the Political–Administrative Apparatus (Central Committee of the Communist Party of Vietnam [CCCPV], 2017); and Resolution No. 57-NQ/TW on Breakthrough Development in Science, Technology, Innovation, and National Digital Transformation (CCCPV, 2024). These frameworks aim to transform Vietnam's public sector from a rule-based, input-focused system into a performance-oriented, data-driven, and citizen-centered model of governance.

Three key innovation trends are shaping Vietnam's public sector:

1. Digital transformation and e-government expansion, including the development of national digital platforms, open data systems, and citizen service portals;

2. Process and organizational innovation, such as the simplification of administrative procedures, performance evaluation reforms, and interagency coordination mechanisms; and

3. People-driven innovation, which focuses on building a capable, responsive, and digitally skilled civil service.

Through detailed case examples from Da Nang City, Ho Chi Minh City, and Quang Ninh Province, this report highlights practical innovations that demonstrate how local governments are driving change through leadership commitment, collaboration, and technology adoption.

Key findings can be summarized as follows:

- Public sector innovation in Vietnam is generally incremental rather than disruptive, emphasizing system efficiency and service quality improvement.
- While strong top-down policy leadership has been critical in initiating innovation, it needs to be complemented by more bottom-up experimentation at the agency and local levels.
- Digital infrastructure and human resource capabilities remain the two most important determinants of sustainable innovation.
- The measurement of public sector productivity and innovation outcomes remains limited, underscoring the need for better data systems and impact assessment frameworks.

To build a culture of productivity and innovation, this report recommends:

- Institutionalizing innovation management units and mechanisms within ministries and local governments;
- Enhancing interagency data integration and knowledge sharing;
- Promoting experimentation and co-creation with citizens and the private sector;
- Strengthening public sector performance measurement systems linked to productivity outcomes; and
- Developing innovation competency frameworks and training programs for civil servants.

Overall, Vietnam's journey illustrates a transition from administrative reform toward innovation-led governance, setting a strong foundation for the next phase of productivity growth and sustainable development. By sharing insights and lessons from Vietnam, this report aims to contribute to the APO's broader research objective of understanding how public sector innovation can drive productivity and national competitiveness across member economies.

BACKGROUND

Public Sector Productivity and Innovation in Vietnam

Over the past three decades, Vietnam has achieved remarkable economic and social progress, transitioning from a low- to middle-income economy while maintaining macroeconomic stability and poverty reduction (WB, 2026). This success is underpinned by continuous administrative and institutional reforms, which have gradually transformed Vietnam's public sector into a more responsive, transparent, and performance-oriented system. However, the growing complexity and global integration of Vietnam's economy have illuminated the limitations of the traditional model of public administration, characterized by hierarchical structures and rule compliance, in supporting the sustainable growth of productivity (OECD, 2025).

Recognizing this, the Government of Vietnam has placed public sector productivity and innovation at the center of its reform agenda. The emphasis has shifted from administrative reform alone to innovation-driven public management that integrates digital transformation, process efficiency, and citizen-centric services.

Several key national strategies define this policy direction, including the following:

- The National Digital Transformation Program to 2025, with a vision to 2030 (Decision No. 749/QĐ-TTg) (The Prime Minister, 2020)
- The STI Strategy to 2030 (Decision No. 569/QĐ-TTg) (The Prime Minister, 2022a)
- Resolution No. 18-NQ/TW on Streamlining the Political–Administrative Apparatus, issued by the CCCPV on 25 October 2017
- Resolution No. 57 NQ/TW on Breakthrough Development in STI and National Digital Transformation, issued by the CCCPV on 22 December 2024

Collectively, these frameworks emphasize innovation as a governance capability, rather than merely a policy tool. Rather than isolated technological projects, Vietnam's policymakers increasingly view innovation as a systemic process incorporating policy design, service delivery, and citizen engagement.

APO Framework

The APO defines public sector innovation as the creation and implementation of new ideas, processes, or services that improve outcomes for citizens, businesses, or society. The Lewis (2024) framework provides a structured approach for analyzing public sector innovation. This framework focuses on the national context and enabling environment, institutional arrangements supporting innovation, the types and patterns of innovation occurring in the public sector, the impact of innovation on productivity and service delivery, key barriers and enablers, policy mechanisms and capacity-building measures, and recommendations for sustaining innovation culture.

In accordance with the APO framework, this report adopts a system-level lens to examine how innovation is embedded within Vietnam's public institutions, policy processes, and leadership mechanisms. Rather than assessing isolated projects, it evaluates how Vietnam's governance ecosystem promotes experimentation, collaboration, and continuous improvement.

Analytical Focus

Unlike survey-based or interview-driven studies, this report draws exclusively from secondary data sources, namely, policy documents, government reports, academic studies, and statistics published by national and international institutions. This approach enables a comprehensive, evidence-based understanding of policy evolution and reform outcomes, as well as comparative insights across ministries and localities based on existing evaluation data. This approach also ensures that the report is reliable and consistent with official information already validated by competent authorities.

A wealth of publicly available reports and datasets makes this approach particularly suitable for evaluating progress and outcomes Vietnam, including the Public Administration Reform Index (PAR Index), Viet Nam Provincial Governance and Public Administration Performance Index (PAPI), and Vietnam Digital Transformation Index (DTI).

This report follows a mixed descriptive–analytical structure consistent with APO research guidelines. This report assesses Vietnam's institutional and policy framework for innovation, analyzes the types and outcomes of innovation in selected public sector cases, and identifies the key contextual and enabling factors shaping innovation success. Based on this analysis, this report recommends measures to build a sustainable culture of productivity and innovation.

KEY FINDINGS AND INNOVATIONS IN VIETNAM'S PUBLIC SECTOR

Overview of Innovation Trends

Vietnam's public sector is undergoing a broad transformation driven by the government's commitment to innovation, digital transformation, and administrative reform. Over the past decade, innovation has gradually shifted from being viewed as *technical modernization* to being recognized as a *strategic governance capability*. Current public sector innovation in Vietnam is characterized by three dominant and interrelated trends:

1. Digital transformation as a driver of innovation;

2. Process and institutional reforms to improve productivity and efficiency; and

3. Citizen-centered and data-driven governance.

These trends are visible across ministries, agencies, and local governments and reflect Vietnam's shift from pilot reforms toward more systematic integration of innovation into public sector management.

Digital Transformation as the Cornerstone of Public Sector Innovation

The National Digital Transformation Program (The Prime Minister, 2020) serves as the overarching framework for Vietnam's transformation toward a digital government, digital economy, and digital society. It establishes the public sector as both the leader and primary beneficiary of digital transformation, emphasizing reforms in governance, data management, and service delivery.

Under this program, the government has set clear objectives such as ensuring that 80% of Level-4 online public services are available on various digital platforms by 2025, and that all administrative procedures are digitalized and integrated into a unified national portal (The Prime Minister, 2020).

Published annually, the DTI monitors progress across ministries and provinces in three pillars of digital transformation: digital government, digital economy, and digital society. The DTI was under the Ministry of Information and Communications (MIC) until 2025, when government restructuring placed the DTI under the Ministry of Science and Technology (MST); this restructuring involved the merger of the MIC and MST into a single entity under the name of Ministry of Science and

Technology. The 2024 DTI report highlighted strong progress in digital infrastructure readiness, online public service provision, and open data initiatives (DTI, 2024; Vietnam News Agency, 2025).

Vietnam has also established a National Committee on Digital Transformation, chaired by the Prime Minister, and Digital Transformation Steering Committees in all ministries and provinces to ensure cross-sector coordination (DTI, 2024). In the 2024 UN E-Government Development Index (EGDI), Vietnam ranked 71st out of 193 countries, climbing 15 places compared with 2022 (UN Department of Economic and Social Affairs, 2024).

At the local level, e-portals and mobile platforms such as Hue-S in Thua Thien Hue Province and Da Nang Smart City in Da Nang City have demonstrated how digital technologies can enhance citizen participation, transparency, and service quality.

Process and Institutional Innovation

Parallel to digital transformation, Vietnam has pursued extensive process and institutional innovations to improve public sector efficiency. The overarching goal has been to simplify procedures, reduce compliance costs, and strengthen accountability.

Key reform initiatives include the following:

- The Administrative Procedure Reform Program (2021–2030), which focuses on "five reductions," namely, reducing the steps, time, costs, intermediaries, and unnecessary documents in administrative processes.

- The development of one-stop-shop (OSS) service centers, which consolidate multiple administrative services in a single location or digital interface. By 2023, OSS mechanisms were operational in all 63 provinces and over 700 district-level agencies nationwide.

- The introduction of the Ministerial and Provincial Public Administration Service Centers, which enable real-time coordination between different agencies and provide enhanced citizen feedback mechanisms.

- The Regulatory Guillotine Project, launched with support from the OECD and the United States Agency for International Development (USAID), which aims to systematically review and eliminate redundant regulations.

Institutional innovations also extend to organizational design. Many ministries have restructured their internal units to align with functional mandates and digital operations. For example, the Ministry of Finance and the Ministry of Planning and Investment have created Digital Transformation Offices.

These reforms have produced measurable results. According to the PAR Index, administrative procedure reform, a core performance area, scored 80.94 points in 2016 (Ministry of Home Affairs [MOHA], 2024). Sector-specific data, such as that pertaining to the Ministry of Natural Resources, indicated an improved score of 87.01 points in 2023 (MOHA, 2024). Similarly, the 2023 PAPI indicated rising citizen satisfaction levels in administrative transparency, service quality, and

anti-corruption measures (Centre for Community Support and Development Studies, Real-Time Analytics & UNDP, 2024).

Citizen-Centered and Data-Driven Governance

A significant innovation trend in Vietnam's public sector is the transition toward citizen-centered and data-driven governance. Rather than focusing solely on process efficiency, public agencies increasingly aim to design policies and services that respond to citizens' real needs and experiences.

Key developments include the following:

- The institutionalization of citizen feedback systems through the National Public Service Portal, which allows individuals to rate services, report misconduct, or propose improvements;
- The use of open government data to enhance transparency and accountability, with over 500 datasets publicly available through the national open data portal (data.gov.vn) as of 2024, covering areas from education to healthcare and infrastructure;
- The integration of big data and AI tools into decision-making processes, such as traffic management, environmental monitoring, and social welfare targeting; and
- Local initiatives promoting participatory governance, such as Da Nang's "Your Ideas with the City" program and Quang Ninh's public–private collaboration platforms.

These innovations reflect broader cultural shifts in Vietnam's public administration from rule enforcement to service orientation, and from compliance-based management to evidence-based governance. The widespread adoption of data-driven systems also supports Vietnam's alignment with the UN's SDG 16 on building effective, accountable, and inclusive institutions.

Public Sector Performance and Productivity Outcomes

The combined effects of digital transformation, administrative reform, and citizen engagement have yielded tangible productivity outcomes in Vietnam's public sector:

- Administrative costs and transaction times for key procedures (e.g., business registration and land-use certification) have decreased by 30–50% since 2018.
- The WB's Doing Business indicators, produced until 2020, and subsequent Vietnamese assessments show consistent improvement in public service delivery and regulatory quality.
- Vietnam's global EGDI ranking improved from 99th in 2016 to 86th in 2022, reflecting enhanced online service availability and human capital readiness.
- The share of Level-4 online services (i.e., fully digital services with no in-person requirements) reached over 55% by 2024. By comparison, this figure was only 1.42% in 2016 and 30.86% in 2020.

However, challenges remain in terms of ensuring data interoperability across ministries, maintaining cybersecurity, and building innovation competencies among civil servants. Despite these constraints, Vietnam's progress clearly demonstrates the growing integration of innovation

principles into the fabric of public administration. Table 1 summarizes the public sector innovation outcomes in Vietnam.

TABLE 1

SUMMARY OF MEASURABLE PUBLIC SECTOR INNOVATION OUTCOMES IN VIETNAM.

Dimension	Indicator	Result
Online public services	Share of Level-4 online services (fully online)	55% in 2024, marking a significant improvement compared with 1.42% in 2016 and 30.86% in 2020
E-government readiness	EGDI global ranking	Improved from 99th in 2016 to 86th in 2022
Administrative efficiency	Reduction in transaction time and costs	30–50% savings for key procedures (e.g., business registration and land services)
Digital adoption	Smartphone and broadband coverage	99.8% 4G coverage; fiber rollout 2024–2025
Citizen satisfaction	Administrative satisfaction index	Top provinces achieved scores of over 90% (e.g., Quang Ninh scored 90.61% in 2023)
Open data	Public datasets available	Over 500 datasets published
Productivity of digital services	Digital transactions	Significant rise in transactions via the NDXP and national portal

Source: Compiled by the author based on the DTI (2024), MOHA (2024), and UN Department of Economic and Social Affairs (2024).
Note: DTI, Digital Transformation Index; EGDI, E-Government Development Index; MOHA, Ministry of Home Affairs; NDXP, National Data Exchange Platform.

CASE STUDIES: INNOVATION PRACTICES IN VIETNAM'S PUBLIC SECTOR

Vietnam's decentralization and local governance reforms have provided substantial room for provinces and cities to design and implement context-specific innovations. As the direct interface between the state and citizens, local governments are key laboratories for testing public sector reforms and new service delivery models.

This section examines three leading cases, namely, Da Nang City, Ho Chi Minh City, and Quang Ninh Province, each representing a distinct approach to innovation in governance, technology, and citizen engagement. All three have been recognized by national indices (e.g., the PAR Index, PAPI, and DTI) as top performers in administrative reform and digital transformation. These cases provide insights into how innovation contributes to productivity improvements and institutional learning across Vietnam's public sector.

Case Study 1. Da Nang City: The Pioneer of Smart and Digital Governance

Da Nang City, located in central Vietnam, has consistently ranked among the top performers in administrative reform and digital transformation. The city's innovation journey began with the adoption of e-government systems in the early 2010s and has since evolved into a comprehensive smart city model integrating governance, economy, and society.

Key innovations include the following:

- E-government and smart city platforms: Da Nang City was the first locality in Vietnam to launch an integrated E-Government Information System (2014), enabling the full digital processing of administrative documents and interagency communication. It later evolved into

the Da Nang Smart City Platform, which consolidates over 160 digital applications, covering urban management, healthcare, education, transportation, and public feedback.

- Citizen feedback and participation: The Góp Ý Da Nang ("Your Ideas with the City") app allows residents to submit opinions, complaints, or policy suggestions directly to local authorities. Over 70% of submissions are resolved within one week, demonstrating a strong culture of accountability and responsiveness.

- Data integration and open governance: Da Nang City established the City Data Center, which integrates data from multiple departments and supports evidence-based policymaking. Open data policies have allowed citizens and businesses to access real-time urban information, improving transparency and civic engagement.

- Digital workforce development: The city invests heavily in digital literacy and innovation training for public officials. Partnerships with universities and technology firms have produced an agile and adaptive local workforce capable of operating and improving digital systems.

According to the MOHA PAR Index, Da Nang City ranks among the top-performing cities in Vietnam, ranking fifth in 2022 (MOHA, 2024). Among Vietnam's five centrally governed cities, Da Nang City ranked third, after Hai Phong and Hanoi. According to the DTI (2023), the city ranked first in both digital government and digital society pillars.

Case Study 2. Ho Chi Minh City: Innovation for Urban Service Delivery

As Vietnam's largest metropolitan area and economic hub, Ho Chi Minh City (HCMC) faces unique governance challenges, including population growth, congestion, and service demand. The city has positioned innovation as a core strategy to improve public management efficiency and citizen well-being.

Key innovations include the following:

- Smart City Framework (2017–2025): HCMC's Smart City Framework comprises four key pillars, namely, shared data centers, open data, urban simulation systems, and information security. This initiative aims to modernize urban governance through data-driven decision-making.

- Integrated urban data and operations center: The city established an Intelligent Operations Center (IOC) integrating data from transport, health, education, and public safety. The IOC processes inputs from over 1,500 cameras from the departments of transport, health, education and training and public security, as well as the camera systems run by various districts.

- Digital service delivery: The HCMC Smart Citizen mobile app connects residents with government services, utilities, and feedback channels.

- Innovation in education and healthcare: Digital tools have been integrated into public schools and hospitals to streamline operations and enhance citizen satisfaction. The "One Hospital, One App" initiative provides patients with online booking and record-tracking services.

HCMC consistently ranks among the top five provinces in the PAR Index and DTI (DTI, 2023). Moreover, PAPI data show increased citizen satisfaction, especially in service accessibility and

transparency (Centre for Community Support and Development Studies, Real-Time Analytics & UNDP, 2024).

Case Study 3. Quang Ninh Province: Institutional Innovation and Public–Private Collaboration

Quang Ninh Province, located in northern Vietnam, is widely regarded as a national leader in institutional reform and governance innovation. Indeed, it has topped the PAR Index and Provincial Competitiveness Index (PCI) for several consecutive years (2017–2023). Its reform model emphasizes organizational restructuring, interagency integration, and partnerships with the private sector.

Key innovations include the following:

- Public Administration Service Center (PASC): Quang Ninh pioneered the establishment of a centralized PASC, unifying administrative services from multiple departments into a single digital and physical interface. This innovation was later replicated nationally.

- Public–private collaboration model: The province has leveraged private-sector expertise and investment to develop e-government platforms and infrastructure projects, ensuring financial sustainability and technological quality.

- Performance-based governance: In Quang Ninh Province, a rigorous performance evaluation system links departmental outcomes with leadership accountability. The resulting transparency in performance appraisal has increased motivation and trust among civil servants.

Quang Ninh scored an administrative satisfaction index of 90.61% in 2023, ranking first in Vietnam (VietnamPlus, 2024). The province's governance and competitiveness rankings have remained the highest nationwide. Quang Ninh's integrated public administration service model has been widely discussed as a leading local reform practice in Vietnam's administrative reform agenda.

Comparative Synthesis of Public Sector Innovation Cases in Vietnam

Table 2 presents a summary of the three cases of public sector innovation in Vietnam.

TABLE 2

COMPARATIVE SYNTHESIS OF PUBLIC SECTOR INNOVATION CASES IN VIETNAM.

Dimension	Da Nang City	Ho Chi Minh City	Quang Ninh Province
Innovation type	Smart city, digital platforms, and data integration	Data-driven urban management, IOC, and smart citizen services	Institutional reform, OSS/PASC, and public–private collaboration governance model
Primary goal	Efficiency, transparency, and citizen engagement	Urban service efficiency, congestion management, and responsiveness	Administrative simplification, competitiveness, and transparency
Level of government	Municipal (centrally governed city)	Municipal (centrally governed city)	Provincial

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Dimension	Da Nang City	Ho Chi Minh City	Quang Ninh Province
Key actors	City People's Committee, ICT Department, universities, Viettel/FPT partners	City People's Committee, Department of Information and Communications, and private vendors	Provincial People's Committee, PASC, private firms (Viettel and VNPT), and the business community
Main success factors	Strong digital governance vision, integrated platforms, and citizen participation	Data integration, central IOC, smart city architecture, and sectoral innovation in health and education	Institutional restructuring, leadership accountability, and public–private collaboration
Impacts	Over 160 smart apps, high DTI ranking, and fast public-feedback resolution (70% within a week)	Over 1,500 camera inputs to the IOC, improved service satisfaction, and expanded digital service uptake	High administrative satisfaction (90.61%), top PAR score and PCI rank nationwide, and national model for OSS/PASC
Innovation significance	Pioneering integrated smart governance	Managing mega-city challenges with data and digital tools	Systemic institutional innovation with national influence

Source: Compiled by the author based on the PAR Index (MOHA, 2024), PAPI (Centre for Community Support and Development Studies, Real-Time Analytics & UNDP, 2024), and DTI (2023, 2024).
Note: DTI, Digital Transformation Index; IOC, Intelligent Operations Center; OSS, one-stop shop; PAPI, Viet Nam Provincial Governance and Public Administration Performance Index; PAR Index, Public Administration Reform Index; PASC, Public Administrative Service Center; PCI, Provincial Competitiveness Index; MOHA, Ministry of Home Affairs.

Across all three cases, several crosscutting lessons emerge. First, strong leadership and a clear long-term vision from local authorities are essential to ensure policy coherence and sustained implementation. Second, digital transformation must be accompanied by organizational reform, as technology alone cannot deliver impact without corresponding institutional redesign. Third, meaningful citizen participation, supported by two-way communication channels and transparent governance mechanisms, strengthens both public trust and administrative performance. Finally, the success of local innovation is heavily dependent on building the capacity of civil servants, particularly in terms of the skills, motivation, and adaptability required to respond to and manage change effectively.

INNOVATION PATTERNS AND IMPACTS

The case studies of Da Nang City, HCMC, and Quang Ninh Province illustrate the diversity of innovation pathways within Vietnam's public sector. Although each locality has distinct socioeconomic contexts and administrative capacities, they share a common orientation toward improving governance performance, productivity, and citizen satisfaction through innovation. This section synthesizes the patterns observed across these cases, analyzing how different forms of innovation (digital, institutional, and participatory) interact to enhance public sector effectiveness.

Vietnam's public sector innovations can be categorized into three primary types:

1. Digital and technological innovation: This type of innovation encompasses e-government systems, data integration platforms, smart city applications, and digital service delivery models. It represents the most visible and measurable form of public sector innovation in Vietnam, as seen in Da Nang City's smart city ecosystem and HCMC's IOC. These initiatives significantly reduce administrative costs and improve transparency.

2. Organizational and process innovation: These reforms involve redesigning workflows, decision-making processes, and interagency coordination mechanisms. Examples include the nationwide expansion of OSS administrative service centers and online public service procedures. This type of innovation typically results in measurable productivity gains through time and cost savings, as well as improved service responsiveness.

3. People and cultural innovation: Innovations in this category focus on changing mindsets, skills, and accountability mechanisms within the civil service. This type of innovation is evident in Vietnam's performance evaluation reforms and digital competency development initiatives for public officials. Although harder to quantify, such cultural shifts are crucial for sustaining innovation over time.

These three forms of innovation are interdependent. Technological tools are most effective when supported by process redesign, while organizational change depends on a culture that rewards learning, experimentation, and results orientation.

At the national level, Vietnam's innovation agenda is anchored in a top-down policy framework supported by strong political leadership. Chaired by the Prime Minister, the National Committee on Digital Transformation ensures policy coherence and alignment across ministries. The MIC provides technical guidance and coordination for digital government initiatives, while MOHA leads administrative reform and capacity building.

However, within this top-down system, innovation has also flourished from the bottom-up through local experimentation. Provinces such as Da Nang and Quang Ninh have leveraged decentralization policies to design and test new models of governance, which were later adopted nationally. This dynamic demonstrates Vietnam's dual innovation model, wherein central direction and local experimentation reinforce each other.

Furthermore, the growing role of public–private partnerships (PPPs) has enhanced innovation capacity by integrating private expertise into digital projects. For example, Quang Ninh's collaboration with Viettel and FPT in developing digital platforms has improved both the efficiency and sustainability of these platforms.

Despite these achievements, several challenges continue to constrain the scale and sustainability of innovation in Vietnam's public sector. First, data systems across ministries and provinces remain fragmented, limiting interoperability and hindering the real-time information sharing needed for integrated service delivery. Second, although existing performance indices measure administrative quality and digital readiness, they do not capture innovation outcomes, learning cycles, or productivity impacts in a systematic way. Third, capacity gaps among civil servants, particularly at district and commune levels, persist as many officials lack the digital and analytical skills required to manage complex reforms. Fourth, financially, many local innovation initiatives rely on temporary pilot budgets or external funding, making long-term sustainability uncertain unless innovation is mainstreamed into regular fiscal planning. Furthermore, rigid regulations on public finance and personnel management often restrict experimentation and adaptive governance. Addressing these barriers requires systemic enablers such as stronger cross-agency collaboration, innovation-friendly incentives, and institutionalized knowledge sharing to ensure that innovation becomes a continuous and embedded function of governance rather than a series of isolated projects.

In summary, Vietnam's innovation trajectory demonstrates the gradual but systemic transformation of the public sector. The interplay between top-down strategic guidance and bottom-up experimentation has enabled Vietnam to institutionalize innovation as a driver of productivity and modernization.

CONTEXTUAL FACTORS AND ENABLERS

Political and Strategic Commitment

Public leadership is the most decisive factor underpinning public sector innovation in Vietnam. Innovation has been explicitly institutionalized as a governance principle through national policies such as the National Digital Transformation Program (The Prime Minister, 2020), STI Strategy to 2030 (The Prime Minister, 2022a), and Resolution No. 57-NQ/TW on Breakthrough Development in STI and National Digital Transformation (CCCPV, 2024). These frameworks signal strong top-down commitment from the central government to drive modernization and efficiency across the public sector.

The prime minister chairs both the National Committee on E-Government and the National Committee on Digital Transformation, ensuring direct oversight and coordination across ministries. This high-level leadership sends a clear message that innovation is not optional but an integral part of Vietnam's development strategy. Such political commitment has created a sense of legitimacy and urgency for public organizations to embrace innovation initiatives.

Technological Readiness and Digital Infrastructure

Vietnam's digital infrastructure development has been a major enabler of public sector innovation. Broadband and mobile network expansion efforts have resulted in 4G coverage of 99.8% of Vietnam, while the government has set goals to ensure the provision of fiber-optic cable services to every household in 2024–2025. Meanwhile, the National Data Exchange Platform (NDXP) enables data sharing between ministries, provinces, and public service platforms. The expansion of digital identification systems (VNeID), e-payments, and cloud-based administrative systems has significantly reduced transaction costs.

Nevertheless, challenges remain in ensuring interoperability and cybersecurity. Many local governments operate legacy IT systems that are not fully compatible with national platforms. Strengthening digital infrastructure, particularly in rural areas, remains a priority for equitable innovation diffusion.

Human Capital and Organizational Culture

Human capital remains both a driver of and constraint on public sector innovation in Vietnam. Over the past decade, the Government of Vietnam has made sustained efforts to professionalize its civil service through competency-based management and capacity development programs. The *Law on Cadres and Civil Servants (No. 80/2025/QH15)* emphasizes performance-based evaluation, professional qualifications, and capacity standards for public officials (National Assembly of Vietnam, 2025). In parallel, MOHA has developed competency frameworks for specific sectors, such as planning, investment, and statistics, to align job performance with measurable skills and outcomes. These frameworks increasingly highlight digital literacy, analytical thinking, and problem-solving skills as essential competencies in the era of digital governance.

Public officials are increasingly aware of innovation's role in improving public value. However, a risk-averse organizational culture still prevails in many agencies, where compliance and procedural correctness are prioritized over creativity. This culture is reinforced by limited incentives and lack of performance-based rewards.

Transforming this culture requires integrating innovation objectives into job descriptions, evaluation metrics, and promotion criteria. Continuous learning programs, peer-to-peer exchanges, and recognition systems (e.g., innovation awards or productivity contests) could help normalize experimentation and adaptive learning.

Resource Conditions

Sustaining innovation in Vietnam's public sector depends on more flexible and performance-oriented resource allocation. The Decision Approving Financial Strategy by 2030 (Decision No. 368/QD-TTg) (The Prime Minister, 2022b) outlines reforms to modernize public finance management, promote performance-based budgeting, and expand digital tools for expenditure oversight (The Prime Minister, 2022b). These efforts mark an important step toward aligning fiscal systems with innovation and digital transformation goals. However, public spending on STI remains relatively modest, with Vietnam's gross expenditure on research and development estimated at around 0.42% and 0.41% of GDP in 2021 and 2022, respectively, among the lowest levels in the region (WB Group, n.d.).

Without regular budget allocations to sustain them, many local innovation initiatives still rely on pilot funding or external donor support. To enhance scalability and institutional continuity, innovation should be progressively integrated into annual and medium-term budget cycles, accompanied by clear performance indicators. Accordingly, Vietnam could consider establishing dedicated innovation or productivity funds, similar to mechanisms used in countries such as the Republic of Korea or Singapore; such funds could provide financial flexibility and incentivize ministries and provinces to compete for innovation-related funding. Such instruments would complement ongoing fiscal reforms and help embed innovation as a routine, results-driven function of public administration.

Stakeholder Collaboration and Partnerships

Collaboration between the public and private sectors, as well as with citizens and academia, has become a defining feature of Vietnam's innovation landscape. Technology companies such as Viettel, VNPT, and FPT have played critical roles in designing digital platforms and providing technical support.

Several local governments have established public–private innovation partnerships, allowing private enterprises to co-develop smart city solutions, manage data centers, or pilot new technologies. Similarly, collaboration with universities and research institutes has enhanced evidence-based policymaking and capacity building.

Citizen participation has also become a core element of governance innovation. Platforms such as the National Public Service Portal and Da Nang Smart City App allow users to submit feedback, monitor administrative performance, and suggest policy improvements. This participatory approach has enhanced the legitimacy, accountability, and relevance of innovation initiatives.

International Co-Operation

Vietnam actively participates in regional and international programs focused on public sector governance, productivity, and reform. Its partnership with the APO has contributed to the development of its national productivity agenda. In this respect, Vietnam has gleaned valuable insights from the APO's assessments and reports on productivity, innovation, and structural change in the country.

In November 2021, Vietnam and the OECD signed a memorandum of understanding to deepen co-operation in competition, investment, and governance reforms. This was followed by the approval of an Action Plan in October 2022 designed to support Vietnam's Socio-Economic Development Strategy (2021–2030).

These international linkages provide Vietnam with access to global policy knowledge, benchmarking tools, and capacity-building opportunities, reinforcing its role as a proactive reformer in the region.

KEY DRIVERS AND SUCCESS CONDITIONS

Vietnam's public sector innovation success stems not only from structural reforms and technology adoption but also from a combination of leadership, strategic alignment, and institutional learning. Experiences across ministries and local governments indicate that innovation flourishes where vision, incentives, capacity, and collaboration converge. These drivers transform policy intent into operational outcomes and determine whether innovation is sustained or fades after pilot stages.

Leadership Commitment and Strategic Vision

Strong political leadership remains the most decisive driver of innovation in Vietnam. Clear, top-level mandates, particularly within the National Digital Transformation Program (The Prime Minister, 2020), administrative reform strategies, and productivity enhancement agendas, signal that innovation is not optional but a core expectation of modern governance. This leadership manifests in two complementary ways. First, top-down direction ensures alignment with national priorities, consistency across sectors, and sustained policy continuity. Second, bottom-up experimentation is enabled through decentralization, allowing local governments to pilot tailored approaches based on their unique conditions.

Policy Coherence and Integrated Reform Agendas

Innovation thrives where policies are mutually reinforcing. Vietnam has increasingly aligned its major reform programs to focus on digital government, administrative simplification, civil service reform, science–technology strategy, and productivity improvement. This coherence reduces overlapping mandates and ensures that technological investments directly support process redesign, performance measurement, and citizen-centered service delivery.

Institutional Learning and Knowledge Transfer

Vietnam has made notable progress in institutionalizing mechanisms for horizontal and vertical learning. Provinces that perform well in PAR, PAPI, or DTI rankings frequently become national reference models, hosting study missions or training programs for peer provinces. Such structured learning cycles accelerate the diffusion of innovation and reduce implementation risks. Vietnam's governance system increasingly rewards provinces that adapt good practices to local contexts while maintaining accountability for outcomes.

Performance Measurement and Accountability Systems

The use of performance indices such as PAR, PAPI, Satisfaction Index of Public Administrative Services, PCI, and DTI creates transparent benchmarking across provinces and ministries. Public disclosure of these rankings generates competitive pressure for improvement, incentives for innovation in weaker localities, and recognition for high-performing provinces, reinforcing their reform momentum.

Digital Infrastructure, Technological Readiness, and Data Integration

Digital transformation is the technological backbone of innovation. Vietnam's expansion of broadband, cloud infrastructure, national data platforms (e.g., NDXP), digital IDs (VNeID), and online public service systems has enabled governments to reengineer processes, reduce transaction costs, and improve service accessibility.

Rather than the mere availability of technology, the real driver lies in the government's growing ability to integrate data across agencies and redesign workflows around digital tools. Provinces that have successfully combined infrastructure with organizational restructuring, such as Da Nang City and HCMC, have seen the fastest productivity gains.

Human Capital and an Innovation-Oriented Civil Service

Public sector innovation depends on the skills, mindset, and motivation of civil servants. Vietnam has accelerated competency-based recruitment, digital-skills training, and updated evaluation frameworks that emphasize problem-solving, analytical capacity, and service orientation. Although gaps remain, an increasing number of localities are investing in digital literacy programs, project-management training, innovation labs or reform units, and partnerships with universities or technology firms. A new generation of public officials is gradually emerging, one that is more adaptive, data-driven, and open to experimentation. This cultural shift is a key prerequisite for sustaining innovation beyond isolated pilot projects.

Collaboration, Co-Production, and PPPs

Vietnam's innovation ecosystem is increasingly shaped by collaboration across sectors. Partnerships with technology companies (e.g., Viettel, VNPT, and FPT), universities, research institutes, and civic groups help compensate for capacity gaps and introduce new ideas into public decision-making. Citizen participation is encouraged through open data portals, service-feedback apps, and co-design workshops.

Incentives, Recognition, and Reform-Friendly Organizational Structures

Innovation requires motivation. Several provinces now apply incentive mechanisms, including recognition awards, opportunities for career advancement, priority funding for innovative departments, and formal integration of innovation results into performance appraisals. Organizational changes such as the creation of PASCs, digital transformation steering units, and city-level operations centers are also creating structures wherein innovation becomes routine rather than exceptional.

International Co-Operation and Exposure to Global Best Practices

Vietnam is increasingly leveraging bilateral co-operation and its relationships with the APO, OECD, ASEAN, UNDP, and USAID to strengthen its public sector innovation capacity. International benchmarking improves policy design, while technical assistance helps ministries and localities adopt global standards in digital governance, regulatory reform, and productivity

management. In addition to enhancing technical capabilities, participation in international networks helps build Vietnam's confidence as an emerging regional leader in public sector innovation.

RECOMMENDATIONS

Vietnam has established a strong foundation for public sector innovation through consistent policy leadership, digital transformation, and administrative reform. However, to progress from episodic initiatives to a sustained culture of productivity and continuous improvement, the government must now focus on institutionalizing innovation and embedding it in all levels of governance. The following recommendations provide actionable pathways across institutional, capacity, and collaboration dimensions to ensure that innovation becomes an enduring part of Vietnam's administrative and productivity ecosystem.

Policy Recommendations

Vietnam should institutionalize innovation by establishing innovation management units (IMUs) within ministries and provinces to coordinate reform initiatives, evaluate outcomes, and share good practices. Similar to Singapore's Public Sector Transformation Office, IMUs would help maintain momentum and ensure coherence across agencies.

Interagency coordination should be strengthened through the establishment of a cross-ministerial task force linking MOHA, MIC, MPI, and the Government Office to align administrative reform, digital transformation, and productivity programs. Annual innovation reviews would reinforce accountability and support horizontal collaboration.

To encourage experimentation, Vietnam should introduce sandbox regulations that allow ministries and provinces to test new solutions such as digital ID, data integration, or AI-enabled services without regulatory barriers. Evidence from these pilots can be used to inform scalable reforms.

Greater fiscal flexibility is also needed. An Innovation and Productivity Fund within the state budget should be set up to finance competitive reform proposals. Allowing agencies to reinvest part of the savings generated from innovation would strengthen ownership and incentivize continuous improvement.

Capacity and Systems Development

Vietnam should develop a national innovation competency framework that embeds digital literacy, data analysis, and creative problem-solving into civil service management. Alongside the integration of innovation competencies into recruitment and promotion, the provision of targeted training in design thinking, agile methods, and evidence-based policymaking would support a more reform-oriented workforce.

Robust measurement and data systems are essential. To this end, a unified innovation and productivity dashboard combining PAR, PAPI, and DTI indicators should be developed to help ministries and localities monitor progress, identify gaps, and expand transparency for citizens and researchers.

A stronger culture of learning should be fostered through annual innovation forums, online networks, and the systematic documentation of successful cases such as Quang Ninh Province's

service centers and Da Nang City's smart city model. These platforms would accelerate peer learning and national scaling of effective practices.

Vietnam should also improve its incentive systems by recognizing teams that deliver measurable improvements. Public recognition, advancement opportunities, or modest financial rewards tied to performance outcomes would encourage creativity while maintaining accountability.

Collaboration and International Integration

Vietnam should deepen its collaboration with private enterprises, universities, and think tanks to co-develop digital tools and policy solutions. PPPs are particularly valuable for smart city systems and data platforms, while academic engagement ensures evidence-based policymaking. Citizen participation through open data and feedback channels enhances trust and service relevance.

International co-operation remains central to Vietnam's innovation agenda. Engagement with the APO, OECD, ASEAN, and UNDP provides benchmarking tools, technical expertise, and exposure to global good practices.

Finally, innovation should integrate sustainability goals, including paperless operations, energy-efficient infrastructure, and circular procurement, thereby aligning Vietnam's public sector transformation with the National Green Growth Strategy and the SDGs.

Vietnam's long-term success will depend on institutionalizing innovation, strengthening human capital, and sustaining collaboration across sectors. By embedding innovation into governance systems and aligning incentives with outcomes, Vietnam can progress from modernization efforts toward a resilient innovation culture that drives productivity and inclusive development.

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CONCLUSION

Analysis of Innovation Types and Contextual Factors

Innovation Types

The framework for this research project suggested that there are four common types of public sector innovation (de Vries et al 2016):

1. Process innovations, primarily internal administrative and technological processes (almost half of the types of public sector innovation mentioned in the literature can be classified as process innovations);

2. Product or service innovations (the next most frequently mentioned type of public sector innovation in the literature);

3. Governance innovations, which occur in policy, governance, skills development, and organizational structures; and

4. Conceptual innovations, which reframe the meaning of innovation.

A wide variety of public sector innovations were observed across the 12 member economies. However, the most common types of innovation were process innovations, particularly the introduction of technology to improve processes, and service innovations, typically using new digital technology. Indeed, a striking commonality across all 12 member economies is the emphasis on the digitization of processes and services.

Closer examination of the 36 good-practice cases reveals two clear clusters of common types of innovation:

1. Digital innovation, such as e-government, digital services, AI, cybersecurity, digital skills training, and transparency (to reduce corruption and fraud).

2. Citizen-centric innovation, including direct engagement, feedback and complaints, responsiveness, accessibility of services, and trust building.

These two themes were often emphasized in national policy statements and strategies. These themes align with the APO's definition of innovation, which focuses on new ideas, delivering public value, and improving efficiency, particularly through digital transformation and transparency. They also reflect a focus on increasing productivity, service quality, and citizen satisfaction. In some member economies, all three innovations were from a single policy sector or were similar types of innovations. More often, however, the three good-practice cases were directed at different aims and not confined to a single sector or type.

Of the good-practice cases examined in detail, 32 were heavily driven by, or reliant upon, digital transformation. Multiple members had used digitization in modernizing and developing their citizen identification systems, land title management systems, smart city initiatives, procurement platforms and payment systems, and integrated (one-stop) service centers. The second most common type of innovation was directly related to citizen engagement, feedback, and satisfaction, with five cases directed at this type of innovation. Enhanced service delivery (usually supported by digitization) was mentioned in five cases. Skill development of civil servants was the most frequently mentioned governance innovation, with explicit emphasis in three member economies. There was also one example of national-level governance restructuring to encourage local initiatives.

The most common terms used to describe the goals of introducing public sector innovations were "efficiency," "transparency," "accessibility," "accountability," "cost-effectiveness/savings," "convenience," "responsiveness," "citizen feedback," "speed," "streamlining," and "integrated (single door/one stop) services/processes." Some of the cases noted more niche objectives, including encouraging decentralization to municipalities, increasing service quality, simplifying administration, protecting cultural heritage, providing advocacy support, ensuring capacity building for evidence-based policy, and conducting expat (skilled) recruitment.

Table 13 summarizes the innovation types for each of the good-practice examples presented by the 12 national economies. Table 13 focuses on the innovation types described by de Vries et al. (2016) rather than on the innovation's vehicle of delivery; as noted above, most innovation was achieved through digitization. Applying this typology demonstrates that process innovations are the most frequently presented as good-practice examples, with these cases representing shifts toward digital processes to improve outcomes for the government and citizens. In many cases, process innovations were combined with service innovations, including several examples of "one door" services. In most member economies, at least one of the three good-practice examples was a governance innovation, including major policy shifts and organizational reforms, citizen-centered initiatives, and the introduction of innovation capacity building, most notably through training and skills development. Although many of the cases cannot be easily classified into a single innovation type, this overview evidences a major focus on process innovations (21 of the 36 cases). Governance innovations were less frequently mentioned (13 of 36 cases). Conceptual innovations were not explicitly mentioned; however, some of the governance innovations could be considered partially conceptual, particularly in the cases of Nepal and the Philippines.

TABLE 13

OVERVIEW OF INNOVATION TYPES IN 12 APO MEMBER ECONOMIES.

APO Member Economy	Innovation 1	Innovation 2	Innovation 3
Bangladesh	Process	Process	Governance
Cambodia	Process	Product/service	Governance
India	Service	Governance	Process and service
Lao PDR	Process and service	Process and service	Governance
Malaysia	Process	Process	Process and service
Mongolia	Process	Governance	Process and service

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APO Member Economy	Innovation 1	Innovation 2	Innovation 3
Nepal	Process and service	Process	Governance
Pakistan	Process and service	Process and service	Service
The Philippines	Governance	Governance	Governance
Sri Lanka	Governance	Process	Process
Turkiye	Process and governance	Process and governance	Product/service and process
Vietnam	Process	Process and service	Governance

Source: Author's compilation.

Policy Tools for Public Sector Innovation

There is a clear focus on digitalization. Based on the cases presented, digitalization is delivering many benefits. This section discusses the numerous other supportive factors making public sector innovation a reality. Leadership, policies, people and organizational capacity development, collaboration, citizen-centric design, decentralization and local empowerment, and changing cultures were all important in the good-practice cases presented by the 12 member economies.

As shown in Table 13, process innovations were the dominant type, while conceptual innovations were largely absent. There is a common distinction between technical and cultural innovation in the public sector (Lewis & Mikolajczak, 2023), with most of the cases in these APO member economies belonging to the first type. In this respect, there were few references to the use of the OECD's Observatory of Public Sector Innovation (OPSI) toolkits and frameworks. Some of the tools and frameworks promoted by OPSI were apparent in the examined cases, particularly in references to innovation labs, the use of systemic frameworks, and an ambition to use adaptive and anticipatory strategies. However, there was little mention of policy design or the use of behavioral insights, future and foresight toolkits, or open innovation/co-design. This is related to the challenges and barriers to public sector innovation faced across the 12 member economies, with a recognition that innovation is generally project-based and time-limited.

Many of these toolkits and frameworks may prove useful in building a culture of productivity and innovation to advance public sector innovation (oecd-opsi.org). While these approaches are not necessarily appropriate or possible in the context of all APO members, they could be trialed and adapted. Targeting these kinds of innovations is necessary to move beyond the apparent focus on process and product/service innovations, which are heavily driven by digitalization, and advance a broader system-wide shift to an innovation culture.

Contextual Factors

Public sector innovation across APO member economies is shaped by several shared structural drivers, although the institutional arrangements and governance capacities that support these drivers vary considerably. Overall, four major themes emerged: (1) digital transformation as the dominant innovation paradigm; (2) the uneven centralization and coordination of innovation systems; (3) multi-actor ecosystems involving government, development partners, and private technology firms; and (4) growing but varied emphasis on citizen-centric service reform.

As reported in the previous section, digital transformation is the predominant and most consistent form of public sector innovation. Even where formal innovation policies are less apparent

(Nepal and Lao PDR), digital strategies, egovernment programs, and ICT modernization provide the *de facto* architecture for innovation. Digital reforms typically focus on the following:

1. Service digitization and one-stop platforms (e.g., Bangladesh's a2i, Mongolia's EMongolia, and Malaysia's digital economy blueprint).

2. Digital identity and authentication systems supporting interoperability (e.g., Nepal's NID and Pakistan's NADRA-linked initiatives).

3. Administrative streamlining (especially in land management), business processes, and civil registration.

4. Smart city models in large municipalities (e.g., Turkiye and Vietnam).

Member economies differ markedly in terms of whether innovation is centrally orchestrated or fragmented across multiple agencies:

1. Highly centralized models include Bangladesh, the Philippines, Mongolia, and Turkiye, where a designated apex body or strong ministry provides coherence and authority.

2. Hybrid or federated models appear in India and Pakistan, where national direction is balanced with state/provincial tailoring.

3. Fragmented or distributed systems are visible in Nepal and Lao PDR, where innovation appears across sectoral strategies without a central policy home.

Across most member economies, innovation ecosystems extend beyond government, reflecting a shift toward collaborative governance. Key actors include:

1. Development partners, who provide technical and financial support, especially in lowerincome economies (Bangladesh, Cambodia, Lao PDR, and Nepal).

2. Private-sector technology firms, which increasingly shape digital government reforms (Cambodia, India, Malaysia, and Pakistan).

3. Universities and research bodies, which play influential roles in countries with long-standing knowledge infrastructure (Mongolia, the Philippines, and Sri Lanka).

4. Civil society, which is emerging as an actor in feedback, transparency, and accountability mechanisms (Bangladesh, Mongolia, and Sri Lanka).

A notable trend across the innovation cases is the movement toward more citizencentered service delivery. However, its depth and institutionalization differ:

1. Strong citizen-centric frameworks exist in Bangladesh, Mongolia, Vietnam, and Turkiye, where feedback loops and service redesign are integrated into digital systems.

2. Functional but less institutionalized citizen engagement is visible in Cambodia, Nepal, and Pakistan, where mechanisms exist but might not drive systemic redesign.

3. Member economies focusing on administrative efficiency more than participation include Malaysia and Sri Lanka, where reforms emphasize process improvement, compliance, and transparency rather than user cocreation.

Innovation across the APO member economies involved in this project is converging around a shared digital public sector paradigm but diverging in terms of governance arrangements, institutional capabilities, and the depth of citizenoriented change. The most robust systems combine strong central coordination, integrated digital architectures, multiactor collaboration, and an explicit citizen focus. Where these elements are weaker or fragmented, innovation exists but is less cohesive, less scalable, and more dependent on external support or isolated initiatives.

Key Drivers of Innovation Improvement

Public sector innovation and productivity improvements across the APO member economies involved in this project are driven by a consistent set of mutually reinforcing factors. Although national contexts differ, comparative analysis of the 12 national cases shows that successful innovation emerges where leadership, institutional capacity, technology, and citizen-centricity converge to create an enabling environment for reform.

Strong Political and Strategic Leadership

Sustained high-level commitment is the most decisive driver of public sector innovation. Member economies with clear national visions mobilize coordination across ministries, legitimize reforms, and reduce resistance. Examples include Bangladesh's *Smart Bangladesh 2041*, Cambodia's *Pentagonal Strategy, Digital India,* Vietnam's *National Digital Transformation Programme*, and Turkiye's *AI Strategy. Strategic leadership* ensures policy continuity, accelerates decision-making, and drives administrative alignment toward innovation outcomes.

Coherent Policies, Legal Frameworks, and Institutional Structures

Updated laws on digital identity, data protection, etransactions, and cybersecurity establish the trust needed for digital governance. Regulatory reforms, wholeofgovernment strategies, and structured coordination bodies (e.g., Cambodia's Digital Government Committee, Lao PDR's DGC, and Turkiye's Digital Transformation Office) enable interoperability, reduce fragmentation, and anchor innovations across electoral cycles. Many member economies are increasingly aligning administrative reform, ICT strategies, civilservice reform, and productivity agendas to create integrated reform ecosystems.

Digital Transformation and Shared Infrastructure

ICT adoption is a universal catalyst. Investments in egovernment platforms (e.g., e-filing, e-GP, cloud services, and digital land systems), broadband, biometrics, and national ID systems significantly streamline service delivery, enhance transparency, and reduce corruption. Shared digital assets (e.g., data exchange layers, single-window systems, API-based integrations, and digital payment platforms) act as "building blocks" that accelerate innovation and reduce duplication. Technology can be a performance multiplier when paired with process redesign.

Data-Driven Governance and Performance Systems

Data platforms, key performance indicators (KPIs), dashboards, and realtime monitoring systems reinforce accountability and enable evidencebased decisions. Member economies like India, Malaysia, and Vietnam have institutionalized performance scorecards, citizen feedback systems, and competitive benchmarking, creating incentives for continuous improvement. Open data, audit trails, and public reporting further enhance transparency and trust.

Human Capital Development and Organizational Capacity

Innovation depends on people and their skills. Cases consistently evidenced the significance of targeted capacity building, including digitalskills training, analytics, change management, and innovation management. Initiatives like India's Mission Karmayogi, Sri Lanka's digital literacy programs, Lao PDR's GPAR/GIDP, and the Philippines' research-oriented capacity programs strengthen the ability of civil servants to adopt and sustain new systems. Civil services increasingly value problemsolving, experimentation, and adaptive leadership to build innovation capacity.

Citizen-Centric Design and Service Accessibility

Successful reforms increasingly place citizens at the center through feedback mechanisms, grievance redress systems, co-design processes, and inclusive service delivery models. Simplification, one-stop centers, digital identity-enabled integration, and multi-channel access reduce transaction costs and expand reach, particularly for rural, marginalized, and digitally constrained groups.

Collaboration and Multi-Stakeholder Partnerships

Cross-sector partnerships with technology firms, academia, NGOs, and development partners bring external expertise, funding, and innovation models into the public sector. Member economies like Malaysia, Cambodia, Vietnam, and the Philippines demonstrate that collaborative ecosystems accelerate scale and quality. Knowledge exchange through regional and international organizations (e.g., the APO, OECD, UNDP, and ADB) strengthens institutional learning and the uptake of global good practices.

Process Agility, Decentralization, and Local Empowerment

Innovative systems thrive where frontline units can adapt solutions. Decentralization in Nepal and Vietnam, parallel processing in Malaysia's construction permit reforms, and the empowerment of local offices in Bangladesh and Lao PDR enable localized innovation and faster responsiveness. Agile regulation and process reengineering can reduce bottlenecks and increase service throughput.

Incentives, Motivation, and Cultural Change

Reward systems, innovation awards, performance incentives, and competitive benchmarking reinforce reform momentum. A shift toward safe-to-fail environments and learning cultures encourages risk-taking and experimentation and reduces the fear of making mistakes. Such conditions are essential for sustained innovation. Strong organizational champions, recognition mechanisms, and visible successes help diffuse reforms across agencies.

Barriers and Challenges to Public Sector Innovation

The barriers and challenges described by the 12 member economies are summarized here. Across Bangladesh, Cambodia, India, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Sri Lanka, Turkiye, and Vietnam, publicsector innovation faces a shared set of structural, institutional, and capacity-related constraints, with differences in intensity shaped by governance systems, levels of decentralization, and digital maturity.

Common Barriers Across Countries

Institutional Fragmentation and Weak Coordination Almost all of the member economies face siloed ministries, fragmented legal mandates, and weak interoperability, limiting data sharing, slowing the integration of digital platforms, and hindering whole-of-government reforms. This challenge is pronounced in federal or decentralized systems (India, Nepal, Pakistan, and the Philippines) and in members with legacy regulatory frameworks (Malaysia, Sri Lanka, and Vietnam).

Human Capital and Skills Gaps A pervasive constraint is the shortage of digital, analytical, and change-management skills within the public service. Member economies such as Cambodia, Lao PDR, Nepal, Pakistan, and Vietnam struggle to retain specialized staff, leading to reliance on donors or external vendors. Frontline capacity gaps among local officials, healthcare workers, trainers, and municipal staff reduce implementation quality and consistency, particularly outside major urban centers.

Digital Divide and Infrastructure Constraints Major barriers across South and Southeast Asia include uneven ICT infrastructure, unreliable connectivity, and low digital literacy, especially in rural, remote, or vulnerable populations. These divides constrain equitable access to services in Bangladesh, India, Lao PDR, Nepal, Pakistan, Sri Lanka, and Mongolia, often necessitating hybrid (i.e., digital-plus-manual) delivery models that reduce productivity gains.

RiskAverse Bureaucratic Culture and Resistance to Change Many member economies reported complianceoriented, hierarchical administrative cultures that discourage experimentation and bottomup innovation. Fear of transparency, audit rigidity, and entrenched informal practices slow reform adoption (Bangladesh, Cambodia, Malaysia, Sri Lanka, and Vietnam). Consequently, innovation is often confined to limited pilots rather than institutionalized systems.

Data Governance, Trust, and Interoperability Issues Weak or fragmented data governance frameworks pertaining to interoperability, privacy, cybersecurity, and legal recognition of digital records undermine trust and limit scaling. This is especially evident in land administration (Bangladesh), AI and advanced analytics (Turkiye and the Philippines), and large digital platforms (India, Mongolia, Pakistan, and Vietnam).

Financial Sustainability and Donor Dependence Several member economies are heavily reliant on donor-funded pilots without embedding innovations into regular budgets or personnel systems (Bangladesh, Lao PDR, Nepal, Sri Lanka, and Vietnam). Fiscal volatility and annual budget cycles (Mongolia and Pakistan) further weaken sustainability, while limited domestic R&D investment constrains institutional learning.

Key Differences Across Member Economies

1. Centralized versus decentralized systems: Centralized authority (Cambodia, Turkiye, and Vietnam) enables rapid rollout but can mask local capacity gaps; decentralized systems face coordination and consistency challenges.

2. Digital maturity: Member economies like India, Malaysia, and Turkiye have advanced platforms but struggle with outcome alignment, interoperability, and adaptive learning, while lower-capacity systems face more basic infrastructure and skills constraints.

3. Accountability mechanisms: Citizen feedback systems (Mongolia, Pakistan, and India) improve transparency, but the uneven response quality highlights misaligned incentives and weak performance management.

Across all cases described by the National Experts, the core challenge is not the absence of innovation, but the difficulty of institutionalizing, scaling, and sustaining it. Structural fragmentation, human capital constraints, risk-averse cultures, and weak data governance have consistently limited productivity gains. Members that have made the most progress combine a strong political mandate, regulatory flexibility, sustained capacity investment, and whole-of-government coordination, while those lacking these conditions remain locked into project-based innovation.

Recommendations for Building a Culture of Productivity and Innovation

Analysis of the public sector innovation efforts across 12 APO member economies reveals a consistent pattern of drivers, institutional enablers, and strategic priorities that enable governments to build a culture of productivity and innovation. Despite contextual differences, national reports highlight shared principles that underpin successful transformation. This synthesis consolidates the major lessons and themes into a set of recommendations.

Leadership

A strong overarching national vision is the most important catalyst for sustained innovation. Member economies that anchor reforms within a coherent longterm strategy are likely to achieve deeper institutional commitment and cross-government coordination. High-level leadership enables whole-of-government alignment, reduces fragmentation, and ensures that reforms endure beyond administrative cycles. This leadership is vital for setting priorities, mobilizing resources, and institutionalizing innovation as a core function of governance rather than a series of isolated projects.

Governance

Effective innovation requires coordinated governance arrangements. Several member economies have established or strengthened central innovation authorities to lead reforms, enforce interoperability standards, and provide policy coherence. Across cases, common governance recommendations include

1. Establishing central coordination bodies with legal mandates for digital governance and innovation;

2. Integrating innovation objectives into national development plans;

3. Ensuring policy coherence across digital government, administrative reform, AI strategies, open data initiatives, and sectoral policies; and

4. Updating legal frameworks on data governance, privacy, cybersecurity, and e-signatures to build trust.

These structures reduce duplication, enforce standards, and facilitate seamless data exchange across ministries. They are vital for scaling successful pilots into national systems.

Performance-Oriented Accountability Systems

Performance-oriented accountability systems are essential for creating a culture of productivity. Many members now use dashboards, KPI frameworks, and citizen feedback mechanisms to inform decisionmaking. Key recommendations include

1. Embedding innovation and productivity metrics in institutional strategic plans;

2. Institutionalizing monitoring and evaluation frameworks with transparent reporting;

3. Using open data and digital audit trails to reinforce trust and accountability; and

4. Establishing national platforms for documenting and disseminating good practices.

This evidence-based approach enables continuous learning, benchmarking, and peer comparison across regions and agencies.

Human Capital

Human capital in the form of a capable and motivated civil service is fundamental to sustaining innovation. All member economies highlighted the need for targeted capacity development in digital skills, data analytics, user-centered design, and agile project management. Capacity gaps are especially significant in rural and subnational administrations, where many reforms ultimately succeed or fail. Common recommendations include

1. Developing national digital skills frameworks;

2. Providing specialized training in AI literacy, cybersecurity, data management, and service design;

3. Establishing innovation fellowship programs to cultivate internal change agents;

4. Integrating innovation competencies into recruitment, promotion, and career pathways; and

5. Offering structured peer learning, mentorship, and communities of practice.

Countries also stress the importance of organizational culture change, encouraging experimentation and risk-taking, reducing fear of failure, rewarding creativity, and enabling frontline discretion within program limits. Such cultural transformation is often as important as technological investment.

Systems and Technology

As noted, systems and technology are crucial. Digital transformation is an important driver of public sector innovation. Successful initiatives across APO members show that technology is impactful only when combined with process simplification, interoperability, and shared digital infrastructure. Technology is understood not as an end but as a platform enabling more efficient, transparent, and citizen-friendly public administration. Shared principles include

1. Prioritizing interoperability and API-based integration;

2. Investing in foundational digital structures such as national ID systems, cloud platforms, and payment rails;

3. Using regulatory sandboxes to safely test emerging technologies (e.g., AI, biometrics, and automation); and

4. Ensuring cybersecurity and privacy-by-design to maintain public trust.

Citizen-Centered Design

A defining feature of contemporary reforms is the shift from government-centric to citizen-centric service delivery. In this respect, member economies emphasize

1. Co-designing services with users;
2. Providing multi-channel access (e.g., digital, assisted digital, and front-office help desks);
3. Strengthening grievance redress and feedback loops; and
4. Ensuring affordability and accessibility for underserved groups.

Digital inclusion policies are especially important to prevent widening inequality. Rural connectivity, local digital literacy initiatives, and gender-responsive communication strategies are key to ensuring that innovations benefit all citizens equitably.

Cross-Sector Collaboration

Cross-sector collaboration is a powerful catalyst for innovation. Partnerships with academia, private-sector technology firms, and development agencies expand expertise, funding, and capacity. Recommendations include

1. Establishing joint R&D platforms;
2. Leveraging donor support for pilots while ensuring long-term domestic financing;
3. Strengthening regional collaboration through APO and ASEAN networks; and
4. Creating national innovation portals for knowledge sharing.

These ecosystems help institutionalize innovation beyond individual agencies and foster system-wide adaptation.

Local Empowerment, Agility, and Decentralization

Local empowerment, agility, and decentralization are important because innovation thrives where local units have the space and resources to experiment. Suggestions from the 12 member economies include

1. Providing contestable innovation funds for subnational administrations;
2. Empowering frontline workers with decision-making authority within program limits;
3. Encouraging parallel processing and agile regulatory approaches; and
4. Using challenge funds to incentivize measurable improvements.

Decentralized innovation promotes bottom-up problem solving and improves responsiveness to local needs.

Conclusion

Across APO member economies, the path to a productive and innovative public sector requires an integrated approach combining leadership, governance reform, capacity building, data-driven accountability, digital infrastructure, citizen-centricity, and collaborative ecosystems. Member economies face a common set of barriers and challenges, as well as some that are unique. The shared recommendations from the national reports point toward public sector innovation that is systemic, institutionalized, and embedded in everyday governance practices. Collectively, these recommendations provide a roadmap for governments seeking to move beyond the digitization of processes and services, toward transformational, sustainable, and citizen-focused innovation cultures.

The cases presented in this report demonstrate that innovation is delivering many benefits and that many supportive factors make public sector innovation a reality. However, process innovations dominate, with conceptual innovation largely absent. There is a common distinction between technical and cultural innovation in the public sector (Lewis & Mikolajczak, 2023), with the majority of cases in these APO members representative of the first type. While some of the cases were more systemic and directed at governance innovations, there was less mention of conceptual innovations like policy design, future and foresight toolkits, or open innovation/co-design. This is related to the challenges and barriers to public sector innovation faced across the 12 member economies, which make it easier to focus on process-based and time-limited innovations.

To advance public sector innovation through the cultivation of a culture of productivity and innovation, the OECD OPSI toolkits and frameworks could prove useful, particularly in shifting the balance toward more cultural innovations that support system-wide changes. While these tools and frameworks may not necessarily be appropriate or possible in the context of all APO members, they could be trialed and adapted. A focus on these types of innovations is needed to move beyond the apparent concentration on process and product/service innovations, heavily reliant on technology and digitalization, and facilitate a broader system-wide shift to an innovation culture.

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ABBREVIATIONS

a2i	Access to Information
AANR	Agriculture, Aquatic, and Natural Resources
AAVC Lab	Agri-Aqua Value Chains Laboratory
ABDM	Ayushman Bharat Digital Mission
AC of Land	Assistant Commissioner of Land
ADB	Asian Development Bank
ADC of Revenue	Additional Deputy Commissioner of Revenue
AI	Artificial Intelligence
AIM	Atal Innovation Mission
AKS	Agensi Kawal Selia
AP	Agensi Pelulus
API	Application Programming Interface
APO	Asian Productivity Organization
ASEAN	Association of Southeast Asian Nations
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy
B2C	Business-to-Citizen
BI Team	Behavioural Insights Team
BI-RADS	Breast Imaging Reporting and Data System
BPATC	Bangladesh Public Administration Training Centre
BPPA	Bangladesh Public Procurement Authority
BRAC	Bangladesh Rural Advancement Committee
BPR	Business Process Reengineering
BU Satellite	Bicol University Satellite Socio-Economic Research and Data Analytics Center
CAMIS	Company Administration Management Information System
CBDDO	The Presidency of Digital Transformation Office
CCC	Certificate of Completion and Compliance
CCCPV	Central Committee of the Communist Party of Vietnam
C-DAC	Centre for Development of Advanced Computing
CEM-UPLB	College of Economics and Management of the University of the Philippines Los Baños
CKAN	Comprehensive Knowledge Archive Network
CKDu	Chronic Kidney Disease of Unknown Etiology
Citra Lab	Citra Social Innovation Lab
COVID-19	Coronavirus Disease 2019
CPTU	Central Procurement Technical Unit
CRC	Communications Regulatory Commission of Mongolia
CSM	Cabinet Secretariat of the Government of Mongolia
CSO	Civil Society Organization

CSC	Common Service Center
DA	Department of Agriculture
DAO	District Administration Office
DC	Deputy Commissioner
DDF	District Development Fund
DDI	Domestic Direct Investment
DEPDev	Department of Economy, Planning, and Development
DFS	Digital Financial Services
DGC	Digital Government Center
DIP Lab	Development Innovations and Policy Laboratory
DNF	Digital Nepal Framework
DOE	Department of Energy
DoIT	Department of Information Technology
DoLRS	Department of Land Records and Survey
DoNIDCR	Department of National ID and Civil Registration
DOST	Department of Science and Technology
DS	Divisional Secretariats
DSC	District Skill Committee
DSP	Digital Seva Portal
DTI	Digital Transformation Index; Department of Trade and Industry
e-BMD	Electronic Birth, Marriage, and Death Management
e-CMS	Electronic Contract Management System
e-Governance	Electronic Governance
e-GP	Electronic Government Procurement
e-KYC	Electronic Know Your Customer
e-NAM	National Agriculture Market
e-SLIMS	State Land Information Management System
E10	Express Construction Permit
EGDI	E-Government Development Index
EP	Employment Pass
ePPAx	Integrated Foreign Workers Management System
ERP	Enterprise Resource Planning
ESC	ESD Satellite Centre
ESD	Expatriate Services Division (TalentCorp)
EU	European Union
E Visayas SUCs/ RDOs	Eastern Visayas-Based State Universities and Colleges and R&D Organizations
FCNA	Federalism Capacity Needs Assessment
FDI	Foreign Direct Investment
FEMIS	Foreign Employment Management Information System
Fintech	Financial Technology
FY	Fiscal Year
G2C	Government-to-Citizen
G2P	Government-to-Person
GAD Lab	Gender and Development Laboratory
GDP	Gross Domestic Product

GIDP	Governance for Inclusive Development Programme
GIOMS	Government Integrated Office Management Information System
GIS	Geographic Information System
GIU	Governance Innovation Unit
GoB	Government of Bangladesh
GoN	Government of Nepal
GPAR	Governance and Public Administration Reform
NGPAR	National Governance and Public Administration Reform
GSWG	Governance Sector Working Group
GVA	Gross Value Added
HCMC	Ho Chi Minh City
HNRDA	Harmonized National R&D Agenda
HWC	Health and Wellness Centers
IBAN	International Bank Account Number
ICT	Information and Communication Technology
ICTA	Information and Communication Technology Agency
ID	Identification
IDs	Identification Documents
IGFC	Intergovernmental Fiscal Council
IGOD	Integrated Government Online Directory
iBAS++	Integrated Budget and Accounting System
iLab	Innovation Lab
ILO	International Labour Organization
IMED	Implementation Monitoring and Evaluation Department
IMU	Innovation Management Units
IOC	Intelligent Operations Center
IPF	Innovative Partnership Fund
ISO/IEC	International Organization for Standardization/International Electrotechnical Commission
IT	Information Technology
ITES	IT-Enabled Services
ITMIS	Integrated Treasury Information System / Integrated Treasury Management Information System
ITU	International Telecommunication Union
IoT	Internet of Things
IWMS	Integrated Welfare Management System
IVME	Data Center of the Ministry of Interior of the Republic of Türkiye
JDN	National Digital Department
JTKSM	Department of Labour of Peninsular Malaysia
JKKP	Department of Occupational Safety and Health
KABEV	The Public Buildings Energy Efficiency
KABİT	Public Sector Ongoing Information Technology Projects Program
KETEM	Cancer Early Diagnosis, Screening, and Training Centers
KFL	Kulai Fast Lane
KHUR	National Data Exchange System of Mongolia
KII	Key Informant Interviews

KLIA	Kuala Lumpur International Airport
KPI	Key Performance Indicator
KPITB	Khyber Pakhtunkhwa Information Technology Board
LCGD	Land Commissioner General's Department
LGC	Lanka Government Cloud
LGED	Local Government Engineering Department
LGI	Local Government Institution
LGN	Lanka Government Network
LGUs	Local Government Units
LMBIS	Line Ministry Budget Information System
MCS	Ministry of Civil Service
MDDIC	Ministry of Digital Development, Innovation and Communications
MeitY	Ministry of Electronics and Information Technology
MIC	Ministry of Information and Communications
MMP	Mission Mode Project
MM Screening	National Screening Mammography Reporting System
MNT	Mongolian Tögrög
MoCIT	Ministry of Communication and Information Technology
MoFAGA	Ministry of Federal Affairs and General Administration
MoHA	Ministry of Home Affairs
MoHFW	Ministry of Health and Family Welfare
MoICS	Ministry of Industry, Commerce, and Supplies
MoITT	Ministry of Information Technology and Telecommunication
MoL	Ministry of Land
MoP	Ministry of Planning
MOSIP	Modular Open-Source Identity Platform
MPC	Malaysia Productivity Corporation
MPTC	Ministry of Post and Telecommunications
MPK	Majlis Perbandaran Kulim (Kulim Municipal Council)
MPKu	Majlis Perbandaran Kulai (Kulai Municipal Council)
MRI	Magnetic Resonance Imaging
MSDE	Ministry of Skill Development and Entrepreneurship
MSMIS	Medical Supplies Management Information System
MSMEs	Micro-, Small-, and Medium-Sized Enterprises
MST	Ministry of Science and Technology
MTC	Ministry of Technology and Communications
MUES	Museum National Information System
MyDIGITAL	Malaysia Digital Economy Blueprint
MYXpats	Malaysia Expatriate Services Centre
NADRA	National Database and Registration Authority
NAOG	National Academy of Governance
NASTP	National Aerospace Science and Technology Park
NCSTI	National Council of Science, Technology and Innovation
NCVET	National Council of Vocational Education and Training
NDX	National Data Exchange
NDXP	National Data Exchange Platform

NeGP	National e-Governance Plan
NGO	Nongovernmental Organization
NGPAR	National Governance and Public Administration Reform
NIASD	National Innovation Agenda and Strategy Document
NIC	National Innovation Council
NIA	National Innovation Agency
NID	National Identity
NITC	National Information Technology Center
NMC	National Medical Commission
N Mindanao SUCs/ RDOs	Northern Mindanao-Based State Universities and Colleges and R&D Organizations
NNRFC	National Natural Resources and Fiscal Commission
NPA	National Productivity Awards
NPC	National Planning Commission
NPO	National Productivity Organization
NPS	National Productivity Secretariat
NPEDC	National Productivity and Economic Development Centre Ltd.
NPR	Nepalese Rupee
NSDC	National Skill Development Corporation
OCR	Office of the Company Registrar
ODSC	One Door Service Center
OGP	Open Government Partnership
OPMCM	Office of the Prime Minister and Council of Ministers
OPSI	Observatory of Public Sector Innovation
OSC	One Stop Centre
OSSC	One-Stop Service Center
OSS	One-Stop-Shop
OECD	Organisation for Economic Co-operation and Development
Oth Luzon SUCs/ RDOs	Other Luzon-Based State Universities and Colleges and R&D Organizations
Oth Mindanao SUCs/RDOs	Other Mindanao-Based State Universities and Colleges and R&D Organizations
P2M	Person-to-Merchant
P2P	Person-to-Person
PAMS	Public Asset Management System
PAN	Permanent Account Number
PAPI	Viet Nam Provincial Governance and Public Administration Performance Index
PA	Provisional Approval
PAs	Procuring Agencies
PASC	Public Administration Service Center
PCAARRD	Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development
PCP	Pakistan Citizen Portal
PCI	Provincial Competitiveness Index
PDA	Pakistan Digital Authority

PEs	Procuring Entities
PEMUDAH	Special Taskforce to Facilitate Business
PERKESO	Pertubuhan Keselamatan Sosial
PLFS	Periodic Labour Force Survey
PLGSP	Provincial and Local Governance Support Programme
PMGDISHA	Pradhan Mantri Gramin Digital Saksharta Abhiyaan
PMKVY 4.0	Pradhan Mantri Kaushal Vikas Yojana 4.0
PMO	Prime Minister's Office
PPA	Public Procurement Act;
PPAs	Productivity Project Awards
PPP	Public–Private Partnership
PPPPs	Public-Private-People-Partnerships
PPR	Public Procurement Rules
PPRP-II	Public Private Reform Project-II
PROMISe	Procurement Management Information System
PSIF	Public Sector Innovation Facility
PSP	Principal Submitting Person
PW	Perimeter Wall
Q1	First Quarter
Q2	Second Quarter
QR	Quick Response
R&D	Research and Development
RDA	Roshan Digital Account
RDOs	R&D Organizations
RGC	Royal Government of Cambodia
RIICs	Regional Inclusive Innovation Centers
RKB	Reformasi Karenah Birokrasi (Reform of Bureaucratic Burdens)
RPL	Recognition of Prior Learning
SBP	State Bank of Pakistan
SDG	Sustainable Development Goal
SDA	State Designated Agencies
SERD	Socio-Economics Research Division
SERDAC	Socio-Economic Research and Data Analytics Center
SERDAC Luzon	Socio-Economic Research and Data Analytics Center, Luzon
SERDAC Mindanao	Socio-Economic Research and Data Analytics Center, Mindanao
SERDAL	Socio-Economics Research and Data Analytics Laboratory
SIF	Service Innovation Fund
SLUDI	Sri Lanka Unique Digital Identity
S Luzon SUCs/RDOs	Southern Luzon-Based State Universities and Colleges and R&D Organizations
SMS	Short Message Service
SMEs	Small and Medium-sized Enterprises
SOCSO	Social Security Organization
SOPs	Standard Operating Procedures
SP	Submitting Person
SPS	Service Process Simplification

SPSS	Statistical Package for Social Sciences
SPV	Special Purpose Vehicle
SSC	Sector Skill Councils
SSDMs	State Skill Development Missions
SSF	Social Security Fund
SSM	Companies Commission of Malaysia
STI	Science, Technology, and Innovation
STZA	Special Technology Zones Authority
SUCs	State Universities and Colleges
SUFS	Service User Feedback Survey
SuTRA	Subnational Treasury Regulatory Application
TCVs	Time-Cost-Visits
TEDAŞ	Turkiye Electricity Distribution Corporation
TIB	Transparency International Bangladesh
TLG	Temporary Labor Quarters
TRY	Turkish Lira
TÜBİTAK	Scientific and Technological Research Council of Türkiye
TÜBİTAK BILGEM	TUBİTAK Informatics and Information Security Research Center
UBCGO	Ulaanbaatar City Governor's Office
UDC	Union Digital Center
UDISE	Unified District Information System for Education
UKP	Uji Kaji Peraturan (Regulatory Experimentation)
UMANG	Unified Mobile Application for New-Age Governance
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNDP Acc Labs	UNDP Accelerator Labs
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSD	United Nations Statistics Division
UPLB	University of the Philippines Los Baños
UPV Satellite	University of the Philippines Visayas Satellite Socio-Economic Research and Data Analytics Center
USAID	United States Agency for International Development
USD	United States Dollar
USM Satellite	University of Southern Mindanao Satellite Socio-Economic Research and Data Analytics Center
VALUES Lab	Valuation and Accounting of Ecosystem Services Laboratory
VLE	Village-Level Entrepreneurs
VNeID	Vietnam Electronic Identification
ViSERDAC	Visayas Socio-Economic Research and Data Analytics Center
WASH	Water, Sanitation, and Hygiene
WB	World Bank
WEF	World Economic Forum
WHO	World Health Organization
W Mindanao SUCs/ RDOs	Western Mindanao-Based State Universities and Colleges and R&D Organizations

WMSU Satellite	Western Mindanao State University Satellite Socio-Economic Research and Data Analytics Center
WoG	Whole-of-Government
W Visayas SUCs/ RDOs	Western Visayas-Based State Universities and Colleges and R&D Organizations
"11-11" Citizens' Call Center	11-11 Center

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