



Agile Working Styles for Productivity

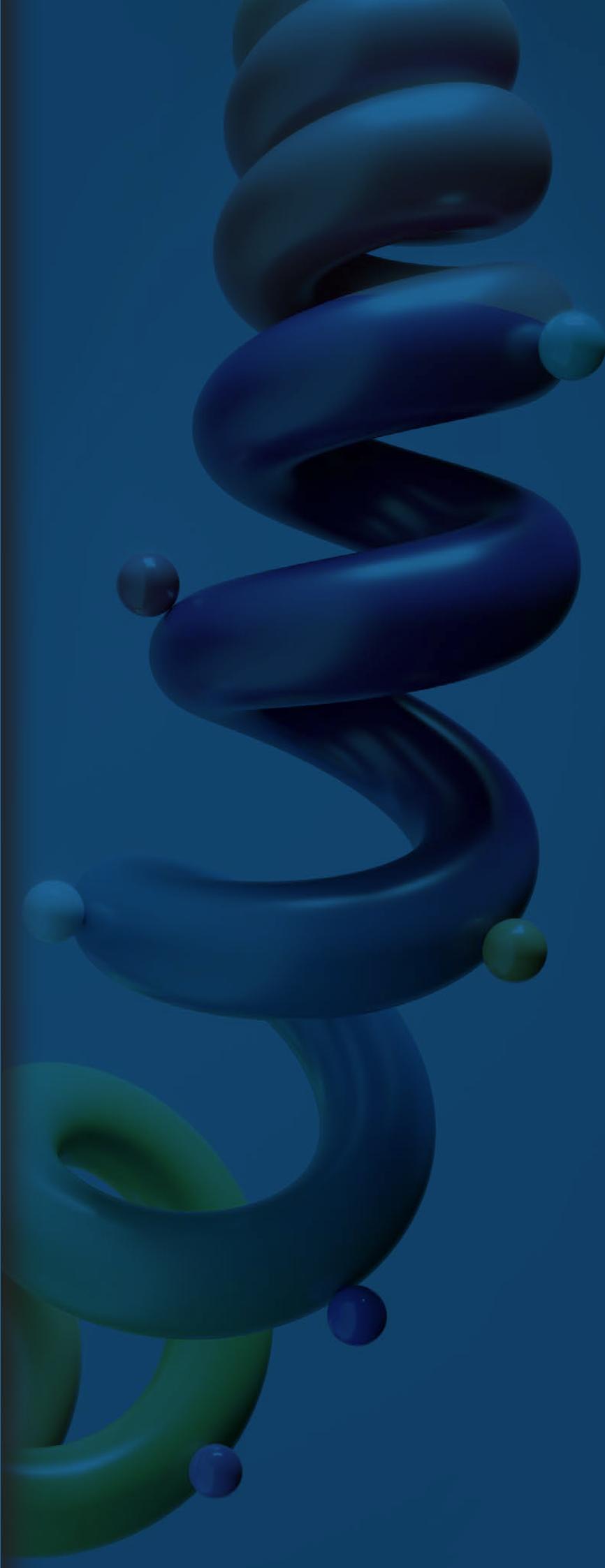
Asian Productivity Organization



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AGILE WORKING STYLES FOR PRODUCTIVITY

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Dr. Jinho Choi served as the chief expert and volume editor.

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FOREWORD

In today's global landscape, marked by rapid technological evolution and intense competitive pressures, the public and private sectors across Asia are increasingly embracing Agile methodologies to enhance productivity and operational responsiveness. This research report on *Agile Working Styles for Productivity* offers a timely exploration of the adoption of Agile practices within APO member economies, reflecting critical transformation in organizational cultures and workflows.

The APO has long recognized the necessity of evolving work practices to keep pace with the changing demands of the dynamic economic environment. Through comprehensive case studies from various APO members, this publication provides a detailed examination of practical applications and challenges of Agile methodologies in different contexts. Each case study not only evaluates the effectiveness of those practices but also contextualizes them within the broader spectrum of national productivity and competitiveness enhancement.

This publication is the result of a structured investigation carried out by a diverse team led by Professor Dr. Jinho Choi, Sejong University School of Business, Republic of Korea, and supported by national experts from Bangladesh, Cambodia, India, Malaysia, Pakistan, Sri Lanka, and Turkiye. It critically assesses the impact of Agile practices on improving organizational output and adaptability and proposes actions and strategies for enhancing public- and private-sector productivity and governance.

As organizations worldwide strive to optimize performance through greater flexibility and responsiveness, this report can serve as a resource for policymakers, industry leaders, and academics. A deeper understanding of Agile practices will encourage their broader applications to achieve sustained economic growth and social well-being across the Asia-Pacific region.

The APO is grateful to all the contributors whose rigorous analyses and insights shaped this comprehensive guide. By continuing to champion the principles of productivity, innovation, and adaptability, the APO remains committed to leading efforts to develop more resilient, productive economies.

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

EXECUTIVE SUMMARY

This study, endorsed by the Asian Productivity Organization (APO), assesses the Agile working implementations within APO member economies, aiming to benchmark effective practices for enhanced productivity. It identifies the successful practices and challenges faced by public and private organizations in adopting Agile working styles. Utilizing a standardized "case analysis canvas", the research studied initiatives from Bangladesh, Cambodia, India, Malaysia, Pakistan, Sri Lanka, and Turkiye, highlighting key success factors and drawing policy implications and recommendations.

The research revealed the critical role of supportive organizational and governmental strategies in promoting Agile working environments. The findings also underscore the value of adaptability, leadership, technology integration, and cultural shifts in enhancing productivity and propose actionable insights for nations to develop competitive, innovative, and adaptable organizations for Agile working transformation. The study also acknowledges limitations related to data scope and cultural context, recommending further comparative and longitudinal research to refine the application and sustainability of Agile practices globally.

In the context of Agile working transformation which is discussed through various case studies, it is clear that APO member economies can foster a deeper understanding of the challenges and opportunities facing their neighbors. By conducting a comprehensive review of the Agile work initiatives and changes undertaken in each country, we can gain valuable insights into the different approaches and strategies being used to respond to dynamic challenges, such as the COVID-19 pandemic.

Further, this research project and its findings hold the potential to extend their utility beyond APO member economies. The authors envision that this report can serve as a valuable repository of knowledge and experience, particularly for countries that were not directly involved in the research project, where they can indirectly access a wealth of information and insights derived from various Agile working implementation cases. As a result, the countries can draw inspiration and guidance from the practices and lessons learned in diverse contexts, ultimately aiding them in their own Agile working transformation endeavors.

CHAPTER 1

DELVING INTO AGILE WORKING STYLES FOR PRODUCTIVITY WITHIN APO MEMBER ECONOMIES

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Research Background

Interest in Agile working has grown significantly as the COVID-19 pandemic highlighted the need for adaptable, flexible work environments. Agile working is an organizational paradigm that empowers individuals to exercise maximum flexibility and autonomy in choosing their work locations, schedules, and methods, with the overarching goal of optimizing performance and delivering exceptional value and customer service [1–3].

Many organizations have deployed technology enabling people to work anywhere, at any time by developing adaptable structures [4–6]. Grounded in the integration of digital technology and the provision of adaptable work methodologies, Agile work fosters individual empowerment by affording them the autonomy to choose their preferred work settings, schedules, and methods, encompassing location-independent or remote work arrangements.

The management of Agile working is currently one of the foremost topics relating to leadership, technology, and project management [5, 7]. Agile organizations create a competitive capability for themselves by being able to adjust internal and external environments that are constantly changing due to the support of technical innovation and information technology [8].

Agile working offers advantages for businesses and individuals, such as increased productivity, cost savings, enhanced innovation, improved work-life balance, and higher employee engagement, achieved through flexible work practices, technology utilization, and innovative work environments [2].

Despite the advantages of Agile working, the challenge lies in effectively uniting the internal and external environments within a process to achieve organizational values in terms of cost and time.

This research investigates approaches/methods for creating Agile workplaces in diverse sectors, identifies factors contributing to successful implementation, and explores challenges and strategies for moving toward Agile working. With a comprehensive understanding of Agile working practices, this study will provide insights and guidance for organizations seeking to transform their work environments and maximize the benefits of agility.

Issues and Objectives

This research aims to identify successful Agile working styles for productivity that can serve as benchmarking guidelines and derive meaningful implications for other countries through the case studies of successful Agile working initiatives from around the Asia region.

The main objectives of this research project are to:

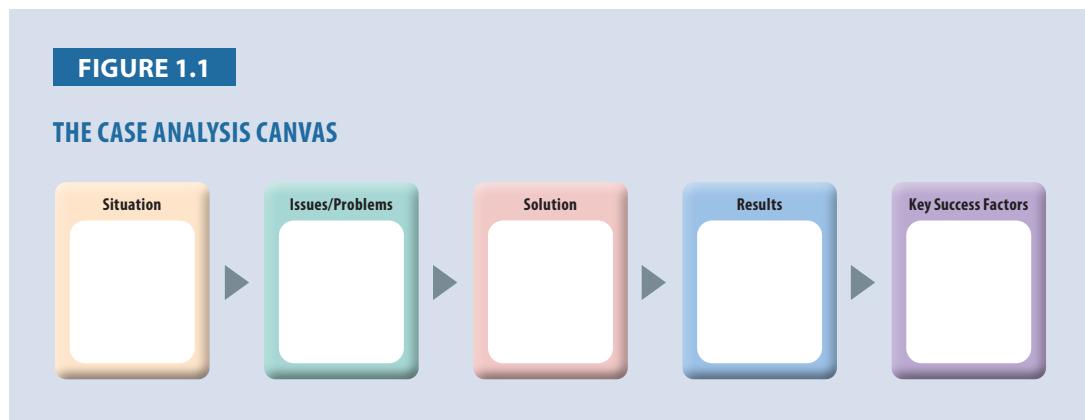
- i) Address critical issues faced by employers/employees during the adoption.
- ii) Identify approaches to create Agile workplaces across sectors.
- iii) Determine factors for successful Agile implementation, investigate challenges, and suggest strategies to overcome the challenges or difficulties.
- iv) Analyze lessons learned from the case analysis of each country and provide (policy) recommendations for introducing Agile practices to enhance productivity.

Specifically, the research presents case studies of successful Agile working initiatives from seven APO member countries, which provide comprehensive lessons on various aspects. This research focuses on how public or private organizations conduct Agile working as a way to meet rapidly changing social and economic needs. Further, it also focuses on analyzing what success factors are driving the Agile working styles. The case analyses are from Bangladesh, Cambodia, India, Malaysia, Pakistan, Sri Lanka, and Turkiye (in alphabetical order). A comprehensive lesson is provided in various aspects of Agile working transformation through this study.

It is necessary to use an analysis framework as a methodology to analyze various Agile working transformation cases more effectively. A comprehensive and systematic way to analyze specific cases in various environments is to use a standardized format, such as the Business Model Canvas [9–11]. Standardized frameworks enable consistent analysis and more efficient and effective communication between stakeholders. To this end, we present standardized analysis frameworks for consistency in each Agile working case.

Methodology

This research is conducted as a case analysis of public and/or private organization(s) in each member economy, in relation to Agile working style for productivity. Each national expert suggests the case analysis results based on selected topics among alternative issues. They present an analysis result of each member economy's case.



We propose a canvas for case analysis. The canvas is composed of five building blocks as a standardized framework for consistent representation and analysis of the various Agile working cases. Figure 1.1 presents the overall structure of the canvas.

Situation

Situation analysis is the process of appraising the organization(s)' internal and external environments to understand the capabilities, personnel, operations, and work environment of the organization(s). A situation analysis will help the organization(s) identify its strengths and weaknesses to understand how it can compete in the marketplace. There are several components in a situational analysis: the organization (includes vision, strategy, and goals), product/services, distribution, opportunities, customer analysis, competitors, partnerships, and the current business environment.

Issues/Problems

Issues/Problems describe points the corresponding private/public organization(s) or sector(s) are trying to solve regarding Agile Working Styles for Productivity. Issues/Problems are current or future challenges (that will be) faced by the organization(s).

Solution

Solution is the series of methods or high-level plans chosen to achieve Agile Working Styles for Productivity, and it can be regarded as a general direction for the organization(s) to achieve the desired Agile working style. Solutions can be suggested from diverse perspectives, including strategy, organization, process, people, activities, culture, and technology.

Results

Results are the performance that is achieved by adopting the Agile working style for the organization(s). Results can also be divided into financial or nonfinancial perspectives. Financial performance can include sales revenue, profit contribution, or return on investment. Nonfinancial performance generally consists of psychological elements, such as the overall satisfaction level of employees.

Key Success Factors (KSFs)

KSFs are elements deemed essential for an organization to resolve the issues/problems relating to Agile working. KSFs help an organization or team decide what to focus on and compare progress to achieve the desired status.

Report Structure

Chapter 1 presents the research background, research issues and objectives, and research methodology as a general introduction to this study. It also suggests a case analysis canvas composed of five building blocks for analyzing “Agile Working Styles” as a standardized analysis framework.

Chapter 2 through Chapter 8, each of the seven chapters presents case studies of successful Agile working styles in Asia. These member economies' chapters are presented in alphabetical order: Bangladesh, Cambodia, India, Malaysia, Pakistan, Sri Lanka, and Turkiye. Each chapter consists of a self-completed case study based on the common theme of Agile Working Styles for Productivity. So readers may accept this report either as a whole or a selective chapter. Endeavor was made to keep each chapter consistent from a holistic perspective. Further, national experts were given some degree of autonomy when applying the analysis framework and interpreting the analysis results.

Chapter 9 concludes with a summary of the full report content, overall lessons learned, limitations of research, and further research issues.

CHAPTER 2 : BANGLADESH

ADAPTATION OF AGILE WORKING STYLES IN BANGLADESH'S BRAC BANK

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Abstract

An organization/company requires agility to survive and thrive in an unpredictable changing context, such as the COVID-19 pandemic and competitive markets. During the COVID-19 crisis, the Bangladeshi business communities had to adopt remote work or Agile working style. This research is a narrative review on the general topic of Agile work practice in Bangladesh with a focus on the banking sector. BRAC Bank, like many other banks, had to be agile to respond to customer demands by bringing about operational changes, such as serving customers innovatively with upgraded products/services. Digital channels, transformation in work process/environment to allow their employees to work from home providing access to core banking software and technologies, and creating work-life balance opportunity for employees were the Agile features in BRAC Bank. However, the bank had to face challenges, such as strict regulatory requirements, lack of work-life balance policy, digital skills gap, unstable/slow internet connectivity, cybersecurity risks, etc. Adoption of Agile Work Policy would help with effective execution of Agile working style. Further extensive research can offer holistic examination of implications and challenges of Agile work, organizational culture and dynamics, infrastructural readiness, and impacts of tools/technologies on employee performance and well-being for a sustainable Agile working approach in BRAC Bank.

Introduction

Unlike most developed countries, where Agile work is a familiar phrase even if not regularly practiced, both the term and the concept are relatively new to Bangladesh. The COVID-19 pandemic has forced professionals to become familiar with similar terms, such as “work from home, remote working, and virtual work”. It became a mandatory option to adopt this new reality for both employers and employees during countrywide lockdown to continue business operations.

Agile work means aligning people, processes, and connectivity with technology, time, and place to find the most appropriate and effective ways of working to carry out a particular task [1]. Work has been moved to wherever it could be done, no matter who “owned” the space or its supporting infrastructure. Thus the Agile working method is performed from locations away from the office, however, this new work styles are specifically designed to maximize flexibility and use tools, technology, and resources to empower employees to work when, how, and where they want.

Agile working may incorporate flexible working practices, but the aims, drivers, and scope are significantly different. It is based on the complete flexibility of work to drive long-term organizational success [2]. Flexible working environment increases employees' job satisfaction and desire to be in the organization. It is observed that the more opportunities the organizations provide their employees, the

more loyal and efficient employees become [3]. Absenteeism reduced by 63% when employees worked flexibly and they were, on average, 20% more productive than their office-based counterparts. In this research, productivity was measured using internal business metrics, such as absenteeism, sick leave, and maternity return rates [2].

The key drivers of Agile working style involve customer needs, changing demographics, and workforce, increasing demand for work-life balance, cost and efficiency, technology, and sustainability. However, the practice of Agile approach is limited to software industry in Bangladesh where Scrum (58%), Extreme Programming-XP (24%), and Dynamic Systems Development Method-DSDM (18%) are the most popular software design and development methods [4]. The Agile methodology has still not filtered to the wider public- and private-level entities in Bangladesh and in fact, not practiced at all. A mobile operator namely, Robi¹ is trying to introduce Agile working system into its working environment. The PATH2 (formerly known as the Program for Appropriate Technology in Health), an international, nonprofit global health organization, is also forging local partnerships for innovative, agile health systems and PATH's partnerships in Bangladesh support local efforts to advance health equity across the country.

However, the situation and conditions brought on by the global pandemic have forced companies to rethink beyond their current processes and strategies and adopt some revolutionary changes to keep surviving. Knowingly or unknowingly, they have stepped into the "Agile world" [5].

Focus and Scope of Case Analysis

The central focus of this research is to explore the status of the present Agile working culture and technology-driven banking services in Bangladesh. It further explores their future prospects and challenges as well as ways to overcome any future challenges in order to justify the Agile working setting. The COVID-19 pandemic exposed the need and significance of new or emerging tools and technologies to strengthen the office environments and work processes. The Bangladesh banking sector is a significant sector for the whole economy, however it is still underdeveloped in terms of technology. Gradually, technological improvisation, online banking, and digital practices are being adopted into the banking sector by observing and learning about the banking facilities of developed countries. A researcher argued that Bangladeshi banking industry has matured and developed impressive offerings and activities, including electronic banking [6].

Secondary qualitative research methodology has been adopted solely based on data collection in shaping this research. The research is built entirely upon review of different online literatures related to the country's banking sector. A stumbling block is the insufficient local research papers on the new concept to get useful insights on the efficacy and impact of Agile working technologies and tools. Available literatures reveal that they are not of the result of extensive research or study, rather they were low-profile studies or short surveys that were mostly concentrated on the pandemic.

Literature Review

Over the past few years, while the increased use of information and communications technology (ICT) and the internet has made the remote work concept much more popular, business operations demanded higher flexibility and agility during the pandemic. Traditional workplace functionalities, along with employee interactions and human resources management activities took dramatic shifts toward virtual workspace, adopting and populating the idea of remote work systems in making operations more

¹ <https://fintechbd.com/were-promoting-agile-working-culture-within-robi-to-facilitate-rapid-innovation/>

² <https://www.path.org/where-we-work/asia-pacific/bangladesh/>

dynamic and productive. Due to the rapid adoption of advanced technologies, people are more connected, which helped organizations to continue their operations during the COVID-19 pandemic [1].

Globalization and digitalization have triggered disruptive changes in many industries, often related to innovative technologies, such as artificial intelligence (AI), machine learning, blockchain technologies, Internet of Things (IoT) as well as advances in high-performance computing. Shorter product life cycles, fragmentation of value chains and new organizational models, such as value creation networks, platform solutions, and cluster organizations have emerged. Digitalization has forced companies to establish flexible operating models so that they can quickly adapt their business strategies in an unpredictable economic environment [7].

Agile project management approach (Agile) is a process that places a strong emphasis on adaptability, teamwork, and iterative development. It prioritizes on producing high-quality software by segmenting large projects into manageable chunks known as sprints [8]. It has become a key component of software management for many companies. An online article [9] reports that at least 71% of American companies are now using Agile. Agile projects have a success rate of 64% whereas projects under the competing methodology known as waterfall have only 49%. It is also reported that Agile projects are nearly 1.5 times more successful than waterfall projects. After adopting Agile, companies have experienced an average 60% growth in revenue and profit. Scrum is the most popular Agile framework with 61% of respondents from 76 countries reporting usage. To date, there are very few instances of low-scale usage of Agile methods in Bangladesh's companies and industries.

During the strict lockdown period when operations in almost all sectors had come to a standstill, banks and financial institutions (FIs) continued their operations to ensure the flow of money in the economy. The situation had compelled banks to be more agile and vigilant in the challenging environment for their survival. Many banks and FIs quickly adapted to operational change, including serving customers innovatively with upgraded products and services through digital channels, transforming the work process and environment, and allowing their employees to work from home while providing access to core banking software and other technologies [10].

Agile work is a way of working in which an organization empowers its people to work where, when, and how they choose with maximum flexibility and minimum supervision. These, among others, depend on team cohesion, team communication, team leadership, team diversity, employee work performance, flexible work arrangement, and strategy execution. Agile work is said to influence employee productivity and ultimately organizational performance [11]. They are again associated with the work-life balance and flexible working arrangements. Work-life balance helps to increase employee productivity that leads to better organizational performance [12].

Research also highlights that flexible working arrangements increase organizational performance as it boosts employee productivity [13]. However, the bigger challenge on this issue arises from the concern of work engagement - a description applied to the extent "which employees are involved with, committed to, enthusiastic, and passionate about their work". Work engagement has also been clearly defined as when employees "feel positive emotions toward their work, find their work to be personally meaningful, consider their workload to be manageable, and have hope about the future of their work". The flexible work model has been proffered as a useful tool for engendering work engagement. As these virtual and flexible work conversations continue to evolve, managers are grappling with how to formalize work policies for their increasingly virtual employees in getting a better comprehension on how to effectively manage them, maintain productivity, and ensure a positive work-life balance for the staff [11].

Work engagement is increasingly being recognized as a key predictor of numerous favorable outcomes, such as greater job satisfaction, proactive behavior, task performance, creativity, organizational citizenship behavior, and client satisfaction. Engaged employees are likely to perform their duties and responsibilities more sincerely and go the extra mile in solving customers' problems and meet their needs that lead to overall greater customer satisfaction. This is particularly relevant in the banking

sector, where service quality, customer satisfaction, and customer loyalty are top priority. Engaged employees play a vital role in achieving superior employee performance, a factor critical for organizational success. Research has extensively explored work engagement due to its link with favorable outcomes, such as employee well-being, life satisfaction, morale, intention to stay, job and creative performance, knowledge sharing, innovation, extra-role behavior, organizational effectiveness, and performance [14].

Banking institutions are increasing work pressure on their employees, leading to longer hours in the office and less time with their families. This imbalance between professional and personal life is highlighting the importance of “work-life balance”, especially in developing countries like Bangladesh. Implementing work-life balance policies not only enhance productivity but also reduce cost by improving staff retention rates, decrease negative spillovers, such as extended hours and fatigue, and ultimately fostering a safer and healthier workplace environment [3].

Meanwhile, the rise of financial technology or fintech start-ups in Bangladesh is creating opportunities for digital transformation in the financial sector. Fintech refers to the application of new technological innovations, mostly internet, software, and mobile apps that aims to make daily financial transactions safer, faster, and more efficient. These start-ups introduce innovative financial products and services that leverage digital technologies, such as mobile apps and blockchain. Fintech start-ups in Bangladesh are steadily growing and the country has witnessed a surge in digital transactions, particularly through mobile financial services (MFS).

Technology-driven banking represents a new era of system in Bangladesh. It offers promising prospects if it can overcome a few challenges. Any banking service provided through computer-controlled systems based on ICT that does not directly involve the bank's usual branch is termed technology-based banking (Allen & Barr, 1996). This approach allows bankers to innovate services at the most minimal cost as possible to ensure convenience to their customers [6]. Lynch (1996) described dual technological benefits: reducing the cost of production of financial services and it reduces the cost of delivery of the services to the customers. Technology maintains a lower cost by covering a huge population of a certain area at a time, which is virtually impossible through manual branch networking (Huda, Chisty and Rashid, 2007) [15].

In fact, the impact of the technological revolution and ICT has wide and far-reaching influence across the economy. According to Howcroft and Durkin (2003), one of the most imperative implementations of technological innovation in banking sector is to make distant customers come closer and enhance ease of service. Raihan (2001) pointed that technological improvement plays a vital role to bring efficiency and improve customer service in the banking sector. In Bangladesh, technology-driven banking marks a new era for the banking and financial service sector [16].

Rahman (2001–02) observed that issues relating to electronic fund transfer require security, availability, authenticity, non-reputability, and audibility. He suggested appropriate control and efficient security measures as well as proper utilization of audit trail in the e-commerce system [15]. Researchers opine that for Bangladeshi banks to remain competitive, they must swiftly initiate efforts to build the foundations for a good technology-oriented banking system. Huda, Momen, and Ahmed (2004) commented that the banking sector in Bangladesh is clearly recognizing the importance of information technology to their continued success; however, new technologies are not easy to implement. Howard and Moore (1982) reported that it is crucial for consumers to first be aware of new technologies for adoption. Therefore, banks must prioritize creating awareness of technology-based banking among consumers [6].

Case Analysis: Agile Working Settings in Brac Bank - Working Culture, Tools, Technology, and Work-life Balance

BRAC Bank Limited (BRAC Bank) is a scheduled commercial bank established under the Bank Company Act, 1991. The primary objective of the bank is to provide a comprehensive array of banking services. As a leading financial institution in Bangladesh, it aims to deliver exceptional customer experiences, focused on client centric, digitally enabled, and operationally integrated, to serve customers and clients in the most holistic way.

As per the annual report 2022, BRAC Bank has 187 branches, 11 subbranches, 324 ATMs (automated teller machines), 39 CDMs (cash deposit machines), 1,000 agent-banking outlets, and 457 SME unit offices located across the country. With a team of over 7,800 employees, the bank caters to more than 1.04 million customers through its diverse range of banking solutions in the SME, retail, and wholesale sectors. The products and services of the BRAC Bank include SMEs (asset products & services and deposit product & services), corporate (deposit product & services, funded & non-funded facilities, and deposit products and services), and retail (deposit products and loan products).

BRAC Bank is the first local commercial bank that offers online banking services since its inception. It also pioneered provision of loan facilities to SMEs, manufacturing, and service-oriented sectors all over the country. Today, BRAC Bank has established itself as one of the leading Bangladeshi development finance institutions, driven by its primary commitment to fostering economic development and regional integration through financial support. In response to the evolving business landscape shaped by the “new normal”, the bank has proactively implemented a comprehensive Pandemic Management Strategy and business continuity plan (BCP) to ensure operational continuity while adhering to health and safety guidelines. BRAC Bank is continuously embracing innovation and it remains at the forefront of leveraging new technologies to enhance its operational efficiency and deliver an enhanced customer experience.

Situation

The COVID-19 pandemic era hampered traditional methods of business of the BRAC Bank. The dynamics of business and operations in BRAC Bank were changed and had to remain agile and adapt to the “new normal”, exploring creative and innovative ways. The bank engaged and developed its human capital by ensuring: (i) a stable connection with the bank’s vision, core values, and operating principles; (ii) encouraging open, honest, and transparent communication; (iii) strengthening connection with employees and community through continuous engagement; (iv) supporting career development through trainings and a cutting-edge workplace environment; and (v) demonstrating employee care. The bank engaged its employees digitally and provided them with institutional assistance with a view to help them cope better. It valued flexible deployment that enhances employees' willingness to work in a variety of organizational roles and settings, meaning that employees are encouraged to work in inter and intradepartmental roles.

A mix of centralized and decentralized operations have been implemented in BRAC Bank to pursue and ensure the highest level of customer benefits. The board of the bank framed policies and procedures for the bank’s procurement activities and deputed empowered teams with decentralized responsibilities for making decisions with regard to effecting key procurement activities. The bank also continued to promote a hybrid work environment, allowing teams to be split between the office and home while leveraging hybrid engagement platforms for seamless and secure interactions. Many robotic process automation took place during the year to run processes more efficiently and reduce human efforts. Uniform and seamless support services were ensured throughout the country, across all branches, subbranches, alternate banking channels (ATM, CDM, internet banking, and bKash), and agent banking networks.

Adaptation in distribution channels and services was one of the transformations to meet the evolving expectations of its customers. The BRAC Bank adopted agent banking, an alternative delivery channel and an initiative by Bangladesh Bank to bring the disadvantaged and poor people into the financial

system. Online banking, ATM setup, and mobile financial service or mobile banking service, such as bKash were adopted by BRAC Bank to cope with the situation to increase service delivery efficiently.

The BRAC Bank partnered Thales Luna Hardware Security Modules (HSMs) across its existing infrastructure to meet the complex security requirements of the recently launched Interoperable Digital Transaction Platform (IDTP), which allows to move funds between bank accounts, mobile financial services, and payment system providers in real-time and at a lower cost. Thus BRAC Bank benefited from Luna HSMs' scalable, flexible, and Agile offering that can handle multiple applications with different crypto requirements.

In Bangladesh, fintech is still in its infancy, but it is slowly gaining traction as more people become aware of its potential. There are a number of factors driving the growth of fintech in Bangladesh. For one, the country has a large population of young people who are comfortable with using technology for their everyday transactions. Second, there is a growing middle class with increased disposable income and a greater demand for financial services. The final driving factor is the government being supportive of initiatives that promote financial inclusion and literacy. Currently, there are a number of fintech start-ups operating in Bangladesh that offer digital banking, mobile payments, peer-to-peer lending, and other services. In order to redefine traditional banking processes and practices, BRAC Bank collaborates with local and international fintech solution providers to conceptualize and to create innovative products and services that meet both customer expectations and aspirations. Taking into consideration of the competition emergent from the fintech companies, BRAC Bank places significant emphasis on digital banking platforms as means to secure its share of the market.

The bank has embarked on a digital transformation journey, aimed at dispensing best-in-class services to customers that include:

- **Core banking** - A host of services provided by a group of networked bank branches. Bank customers may access their funds and other simple transactions from any of the member branch offices
- **Internet banking** - Provides a secure medium for transferring funds electronically between bank accounts and also for making banking transaction over the internet
- **Mobile banking** - Involves the access to and provision of banking and financial services through mobile devices
- **SMS banking** - SMS banking allows customers to make simple transactions to their bank accounts by sending and receiving text messages. Short Message Service (SMS) is the formal name for text messaging
- **Electronic Funds Transfer (EFT)** - A system of transferring money from one bank account to another without any direct paper money transaction
- **Any branch banking** - A service that is widely popularized as online banking

With the insights learned from the COVID-19 pandemic situation, the board of the BRAC Bank articulated its focus on reemergence in the postpandemic era. The board aims to foster a highly resilient banking operation and thereby build a high-performing sustainable organization in a highly challenging and complex new reality in the future. BRAC Bank's annual report 2020 highlighted the board chairperson stating "The board will remain agile and proactive to current and future risks. Where necessary, we will re-prioritize our focus areas based on the evolving situation. Most importantly, we will remain resolutely devoted as a purpose-driven organization committed to advancing customers and society and leading the change. We will adapt and operate to the changing market, stakeholders and business contexts, without compromising on value creation."

Issues/Problems

BRAC Bank faced a significant technology challenge during the COVID-19 pandemic in operating the system from anywhere as the staff worked across the country and internationally. Additionally, customer behavior changed drastically. It had to work virtually, ensuring telecommunications and helpdesk to operate uninterrupted services through coordinated and sustained efforts with service providers to facilitate remote work. Fulfilling the urgent need for remote office facilities for a large number of employees was another challenge. Besides, the evolving regulatory policies and the ability to adapt to these also posed challenges. Among other key challenges were conducting programs while maintaining social distancing protocols and a shortage of skills. However, these were addressed by shifting all its programs to a virtual mode of developing unique talent acquisition strategies. The bank also faced a problem with the work-from-home modality as most employees lived with extended family and did not have the space or environment for a home office. Culturally, staying home means employees have time off, and most supervisors lack experience managing remote teams.

Solutions

As means of adaptation to the changing situation during the COVID-19 pandemic, BRAC Bank introduced a remote working culture. Accordingly, it has ensured remote office facilities for a large number of employees. BRAC was one of the first organizations in Bangladesh to implement a work-from-home policy for its head office. The bank provided competitive compensation and benefits packages to ensure employees' satisfaction and retention leading to better work-life effectiveness. It also activated a work-from-home (WFH) mandate, equipping all its staff with the right set of tools and technology to ensure enhanced collaboration and cooperation for seamless operations. All employees, except some frontliners and highly critical role players, were mandated to work from home and empowered with safe access to collaborative tools to remain connected with their teams and get the work done.

Getting into work-from-home mode was rapid. In less than 24 hours' notice, surveys on employee home connectivity, technical application setups, device readiness, and manuals for using various tools for collaboration were made. Policies on how a team would be monitored and supervised from a distance were decided and disseminated. How vendors would be managed, how procurement would continue, and how finance and HR would be organized were all sorted. Internal approvals, which required hard copy signatures, were now being approved through official emails. Collaborations happened in huge numbers between the head office and field offices through video conferences and shared drives.

The following arrangements taken by the bank were key to the success of remote working culture:

- **Building the sense of ownership** - Clear communication and justification for working from home helped employees know that the organization was taking the initiative for people's safety. This strengthened employees' faith and commitment, and their sense of ownership toward their work
- **Preparedness** - It was ensured that employees had devices with proper software installed and an internet connection at home. 'How to' manuals on software use were quickly designed, keeping in mind the varying degrees of user knowledge, and circulated. Everyone understood that whatever was needed would be supported by the technology team
- **Flexibility** - Management adopted even more of a can-do attitude than usual, modeling rapid decision-making, championing digital documents and signatures, and empowering staff to make more independent judgements

Moreover, BRAC Bank reorganized its operations early to embrace the new health and safety guidelines, rolled out a virtual operations platform, and significantly expanded digital customer solutions. Technology team played a huge role during the pandemic period by delivering all necessary infrastructures ahead of time to enable work-from-home at a large scale, upgraded a number of foundational systems, and made significant progress in all other ongoing large projects.

During the pandemic years, BRAC Bank shifted its physical modality to online modality by providing its staff with several upskilling and training as well as development opportunities while also ingraining a deeper culture of learning across the organization. Virtual and E-learning programs were found to be effective during pandemic and, seeing its success, the bank intends to continue these programs in the normal period as well. In order to maximize efficiency and productivity while working from home, the bank focused on meeting daily targets, enhancing collaboration with the colleagues, and sharing updates through ongoing communication. The board of the BRAC Bank also framed policies and procedures for the bank's procurement activities and deputed empowered teams with decentralized responsibilities for making decisions about effecting key procurement activities. The maximum possible delegation of responsibility for expenditure rests with the managing director, chief executive officer, and their team.

In order to combat the challenges, the BRAC Bank launched its digital transformation, such as new banking app, corporate payment solutions, in addition to other services, with the emergence of various new internal and external products. One of the significant initiatives was the upgrade of the bank's Core Banking System (CBS), which improved cost and process efficiency. The bank's System Support & Service Operation team implemented several customizations within the CBS for enhancing digital access to the bank for customers and staff members, and on bulk and straight-through processing as well. The bank also granted secure access to CBS to third-party applications/platforms through customized APIs (Application Programming Interfaces) for ensuring 24x7 services to customers. In addition, the bank invested substantially in Alternative Delivery Channels to enable banking services and features that circumvented physical customer visits to the branch, thus adhering to social distancing norms.

Results

By introducing remote working culture, BRAC Bank achieved several results, including:

- i) Development of a secure platform within a short period of time for operationalizing remote working (work-from-home or WFH).
- ii) Expansion of existing platforms with additional security layers to facilitate day-to-day operations remotely.
- iii) Introduction of safe and state-of-the-art remote collaboration tools to ensure ongoing employee communication and engagement.
- iv) Completion of all planned projects of technology deployment and migration of existing technologies remotely through secured channels.
- v) Deployment of enterprise-class storage solutions and next-gen firewall systems to enhance IT infrastructure and security.

Such progress has strongly propelled the bank on its path toward digitalization. These actions allowed the bank to continue to serve customers during the pandemic and even leverage the economic recovery. By executing effective work-life balance and flexible work policies, the bank experienced improved employee relations, improved staff retention rates, reduced absenteeism and sick leave, improved staff morale, employee engagement and satisfaction, greater staff loyalty and commitment, and improved productivity. With relentless focus on developing best-fit digital banking service propositions coupled with dynamic and Agile business strategies adopted by the bank, there was a strong recovery in business activity. As a result of digitalization, the transaction time and operation cost were reduced.

The bank's annual report 2021 reported that due to solid focus on developing best-fit digital banking service propositions, coupled with dynamic and Agile business strategies adopted by the bank, resulted in strong recovery in business activity. This positive momentum is reflected in the outstanding performance of the bank. The report also mentioned that all-out efforts in cost reduction enabled the bank to create a leaner and more agile organization, as evident in its cost-to-income ratio declining to

53% in 2021 from 58% in the previous year. Moreover, the annual report 2022 stated that due to making partnership with bKash, transaction volume increased by 53% between the bank and bKash. This partnership will continue to grow, offering new products to stimulate customers. The same report also stated that the Agile shift to digital services has not only reduced cost and improved operational efficiency, but also helped the bank simplify customer journeys. It has enabled customers to access banking services anytime and anywhere at their own convenience.

Key Success Factors

A multitude of factors have contributed to the success of BRAC Bank in making the Agile shift. They are:

- i) **Robust leadership team and specialist workforce** - Under mandatory lockdowns enforced by the government, the board embraced a proactive role in skills development, specifically focusing on building human resource capacity in strategic planning, credit underwriting, customer service, digital skills, and loan recovery, emphasizing on adherence to the bank's values and ethics in all activities. The board also engaged in holistic 360-degree appraisal, thus ensuring the attainment of goals and objectives and also evaluating how the performance was achieved.
- ii) **Adaptation capacity** - The success of BRAC Bank's smooth and productive operation in the face of new challenges and new ways of working relied largely on its adaptive capacity during the pandemic. The bank was able to quickly adapt to the government regulatory changes, formulate policies and measures, and adopt new technologies in a customer-centric manner during the pandemic. Due to adopting a flexible approach, the bank successfully reorganized its operations early to embrace the new health and safety guidelines, roll out a virtual operations platform, foster remote working culture that enabled the bank to continue its operations and winning employee and customer satisfaction. The bank's annual report 2021 stated that "Our consistent and forward-thinking initiatives in strategy execution, aligned with smart resource allocation has placed us in a strong position today. We are meeting the challenges, both collectively and individually, thanks to our financial strength and our values and ability to adapt to the evolving conditions and circumstances. We have remained agile in the past and this is helping us to remain resilient in withstanding the current crisis, while also preparing for growth in the aftermath of the pandemic."
- iii) **Culture of learning** - BRAC Bank fostered a learning environment as it strives to nurture a highly competitive, engaged, and motivated workforce for its business success. Launching several training programs of both classroom and virtual training made the employees well equipped with knowledge and skills to remain agile, competitive, and future-ready for excellence in innovation and performance. The bank's annual report 2020 highlighted that the bank supports its employees so they can acquire new skills or update existing ones and thus continue to contribute to the bank's digital and Agile mission.
- iv) **Technological innovation** - BRAC Bank emphasized enhanced automation and digitization (digitalizing products, services, and processes) across the company. Substantive investment in the improvement of technology contributed to consistently remaining ahead of the tech curve, effectively thwarting competition. Technological advancement has made customers more aware, which has altered their expectation levels. The bank launched an app called Astha (designed to provide easy and convenient banking services and built entirely in-house and based on Agile methodology) that has brought forth the most modern banking services right at the "virtual doorstep" of the customers. It has not only redefined banking experience for them, but also shed light on the positive impact of technology in making lives easier, simpler, and better.
- v) **Customer-centricity** - BRAC Bank is committed to putting customers at the heart of its product design. It emphasizes the perspective of its customers to align product propositions, resulting in the development of the best product-market fit propositions. The bank has been better able to embrace and adapt to new technologies in a customer-centric manner that led to driving enhanced

customer experiences and hence sharpening its competitive edge. As a result, the customers have been more satisfied and remained loyal to the bank, and created a stronger bond and fostered greater trust. The customers feel valued and their retention rates increased. In addition, the approach has contributed to increasing revenue generation by tapping into customers' existing relationship. They have further engaged with the bank's offerings compared to previously. The approach has contributed to resolving problems quickly and efficiently, minimizing customer dissatisfaction, and prevented resource wastage on the bank's offerings with low customer demand.

- vi) **Digitalization** - Digital solutions with artificial intelligence capabilities have significantly reduced human interventions in less value-adding activities. Many robotic process automation took place to run processes more efficiently and reduce human efforts, especially since the devastating impact of the COVID-19 pandemic situation. Digitalization prompted the bank to invest in digital banking solutions, transforming interactions and internal processes. This allowed BRAC Bank to accelerate the delivery of digital solutions, respond to emerging market opportunities, and iterate on its offerings based on real-time customer feedback.
- vii) **Accessibility and convenience** - The term "accessibility" in e-banking clarifies the capability of users to access information and services. These include content format; hardware, software and settings, internet connections as well as the abilities and disabilities of users. Accessibility toward the banking service, ATMs, telephone, and the internet banking service ensures better service to the customers. E-banking offers a higher level of expediency to customers to access internet banking anytime, anywhere. BRAC Bank adopted a "phygital" channel network comprising both branch-based physical banking as well as digital-based virtual banking for making the banking services more convenient and accessible for the customers. It strengthened its alternate banking channels comprising agent banking, alternate delivery channel (ADC), call centers, and internet banking for making the transaction and information services more accessible for customers. The bank will continue to introduce new "phygital" channels to bring the services to the doorsteps or fingertips of the customers to transform into a lean and agile organization.

Discussion

Agile frameworks are generally still not practiced in the Bangladeshi banking sector. However, different literatures of BRAC Bank demonstrate that some Agile expressions are used in its banking operations and services. The senior leadership in the bank upholds Agile mindset, which is positive for transformation, meaning that they are mentally prepared for embracing changes and responding to changes quickly. Already adopted strategies, such as safe and state-of-the-art remote collaboration tools to ensure ongoing employee communication and engagement, remote working facilities, adaptation and flexibility principles, technological upgradation, digitalization, innovation, responsibility delegation, flexible leadership, among others, indicate the active features for Agile approach as well as a trend of transformation or shifting from traditional approach to Agile method.

Therefore, adoption of Agile working style could help the BRAC Bank become more agile, flexible, and able to deal with the rapidly changing environment and the development of new technologies for improving its competitiveness. However, transformation does not happen overnight. Before adopting the Agile working style across the bank, the reality and overall environment, including the potential challenges and obstacles, need to be explored. Moreover, it is evidently more challenging for the banks due to regulatory compliance.

Working from home should have strong emphasis on monitoring employees' mental well-being. It needs to ensure that no one feels that they are expected to work around the clock. There should also be a focus on specific leadership courses on remote team management to effectively encourage work-life balance. COVID-19 has proved that culturally and capacity-wise, it is an effective way of increasing

employee productivity. All that is needed are some device augmentation, home connectivity, and awareness on electronic communication protocols.

BRAC Bank could utilize the opportunities, such as Smart Bangladesh ICT Master Plan (2021–2041) focusing on four key pillars: Smart Citizen, Smart Government, Smart Society, and Smart Economy to move from a Digital Bangladesh to a Smart Bangladesh, an initiative taken by the government, to facilitate the Agile banking software. The master plan emphasizes on the Agile way of working in public-sector departments. BRAC Bank can also utilize the Master Plan (2021–2030) adopted by the National Productivity Organization (NPO) set up under the Ministry of Industries to facilitate the high-productivity growth strategy and to achieve maximum excellence in productivity.

Policy Recommendations

As stated in the previous section, BRAC Bank has some Agile features in its working style, such as agility mindset in leadership, technological innovation, and adoption of remote/work-from-home culture, and adaptive capacity to the changing context. Based on these observations, the following recommendations are made in order to translate all these features into Agile working style across the bank:

- i) Adopting a new Agile methodology for BRAC Bank requires restructuring and costs and must be in line with new government regulations. Considering the complexity of the organizational structure and environment, it is recommended that BRAC Bank conducts a feasibility study before the adoption of the Agile working style. The study should consider the product development processes in the bank, prevailing culture in the bank, leadership motivation, the ability to adapt to change, and challenges of regulatory and other obstacles for adopting such Agile working style across the bank.
- ii) The bank should start with 'trial and error' method in going for adoption of Agile working style, determining which aspects of the bank promote agility and which do not. This will allow the bank to identify potential challenges and areas for advancement before committing to large-scale adoption.
- iii) Suitable training for the teams in Agile methods is important to ensure not only that the necessary technical Agile skills are required, but also to convince team members of the benefits of working in an Agile set-up so that banks can learn how to become agile on a project or even organizational level. Accordingly, the research recommends to organize proper training to equip the employees of the bank with essential skills and knowledge to work in the Agile environment.
- iv) Flexible work approach is a useful tool for creating work engagement and maintaining productivity and ensuring a positive work-life balance for the staff. Work-life balance for the employees is very important for their personal life as well as the country's economy. It is recommended that BRAC Bank should come up with Work-Life Balance Policy to help employees manage their family life and professional life balance in order to achieve sufficient levels of performance and well-being in life. By allowing employees to work flexibly and applying the "working smart" philosophy that applies to Agile working, the bank can save money and boost employee effectiveness and productivity.

Conclusion

The Agile working style, while it has some limitations and weaknesses, has become a popular method in many industries, including the banking sector. During the COVID-19 pandemic, BRAC Bank had to be agile, flexible, and innovative in its banking operations to maintain satisfactory productivity and customer satisfaction. To this end, BRAC Bank had to continuously make technological innovation

and adopt digitalization processes for banking transactions and distribution channels, make adjustments in the human resource management system, financial systems, payments systems, asset and risk management systems, among others.

The traditional operation style does not allow the bank to quickly respond to these transformations; hence the bank follows a hybrid work environment for seamless and secure operations. It is difficult for the bank to shift its working style from traditional approach to Agile working style overnight because it has to adhere with its own compliance system and central bank/government regulatory framework. Moreover, not all employees are ready to accept the new system and are not sufficiently knowledgeable, skilled, and capacitated to use Agile method. Thus gradual introduction of Agile working style in the bank with some experiment and/or research could be the option to cope with the rapidly changing context.

The failure to adopt Agile methodology formally across BRAC Bank might lead to a slow response to development activities, changing market conditions, and new customer requirements. However, as the Agile working concept is new and there is no large-scale researches conducted in Bangladesh, therefore, this study recommends for an extensive research for holistic examination of the Agile working style for adoption in the BRAC Bank exploring areas, such as:

- What is the status of adopting Agile working style in BRAC Bank and how ready are BRAC Bank and its employees to welcome this new Agile working style fully?
- Why should BRAC Bank adopt the Agile framework and methodology? How much can the existing infrastructure and IT professionals of the bank support to meet the demands for Agile work considering the future digital transformations?
- How to apply Agile working style across the bank? What is the effectiveness of this new approach taking into consideration of the local customs, norms, and regulations?
- What are the potential challenges and obstacles to adopt Agile working style in the bank?
- How do the HR approaches and technologies & tools make impacts on organizational efficacy, culture, and dynamics, including employee well-being?

CHAPTER 3 : CAMBODIA

TOWARD OPERATIONAL AGILE WORKING PRACTICE FOR PRODUCTIVITY IN THE PUBLIC SECTOR

Bronh Sopheana

Ministry of Labour and Vocational Training

Abstract

Operational Agile working practices have the potential to be successfully implemented in Cambodia. The COVID-19 pandemic has accelerated the acceptance of new ways of working, including Agile practices. Cambodia's young population, fast development of new technology, and relatively well-performing connectivity make it a fertile ground for the implementation of Agile practices.

The Ministry of Labour and Vocational Training (MLVT) has already taken some steps to implement Agile practices internally with positive results. The MLVT has changed its way of work internally at some levels, and put most of its services online. This has changed some internal operations of MLVT and the business operation that led to increase productivity for both sides.

However, more needs to be done to invest in technology infrastructure, develop collaboration tools, provide training and awareness programs, foster a culture of innovation, and regularly obtain and review feedback from service receivers. It is important to note that the successful implementation of operational Agile working practices requires not only technological solutions but also cultural changes and a supportive organizational environment.

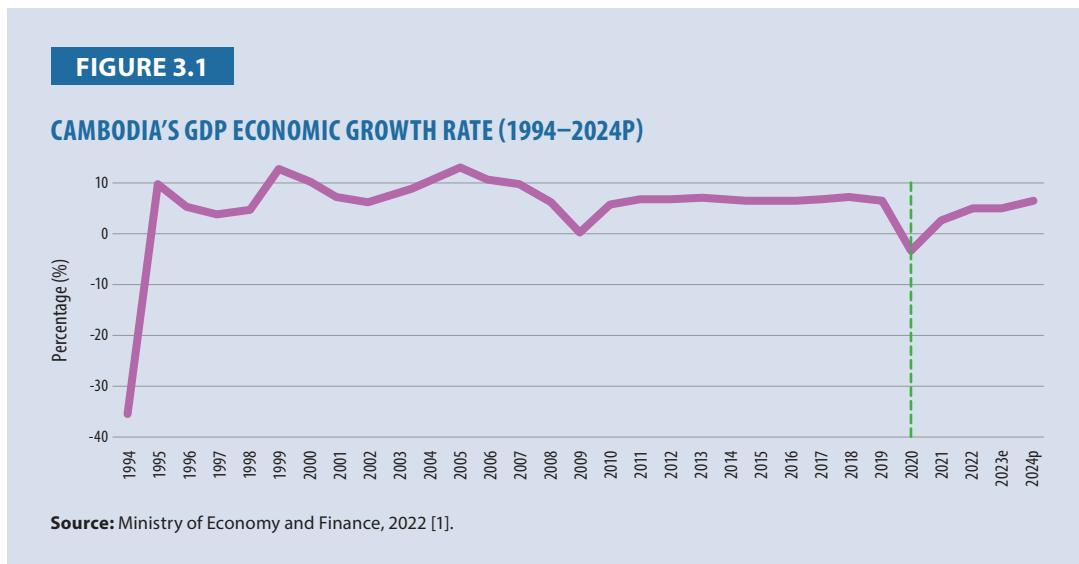
The MLVT should consider the specific context and needs of its organization and tailor its approach accordingly. By doing so, the MLVT can leverage Agile working practices to enhance its performance, improve employee satisfaction, and better serve the needs of the Cambodian people.

Introduction

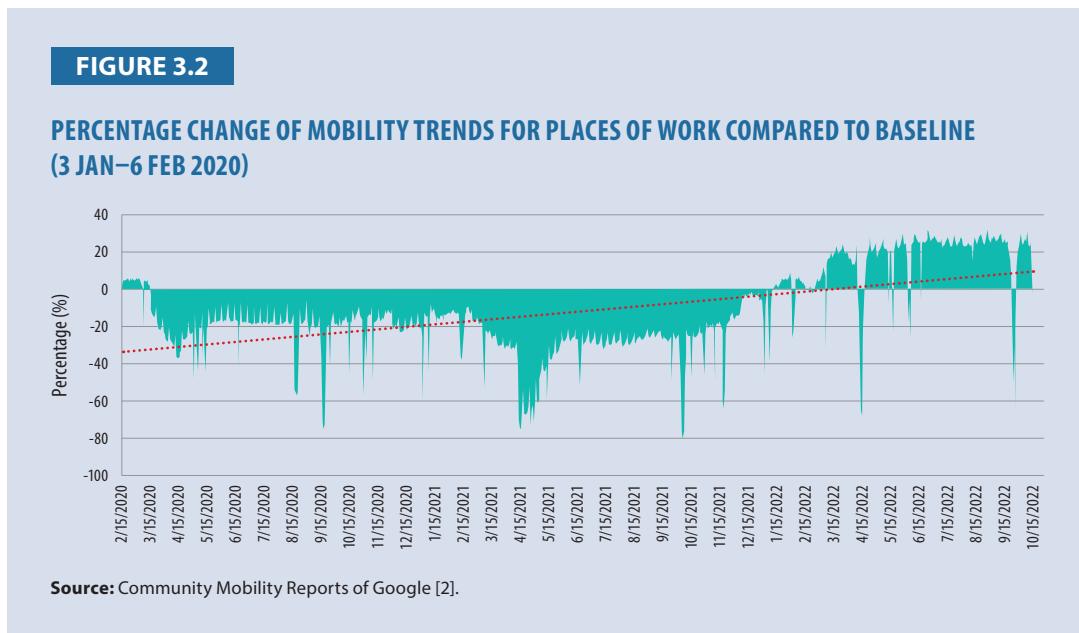
Cambodia began economic reforms in the late 1980s toward a market economy and international trade openness. These changes have positively impacted both the social and economic aspects of Cambodia. Foreign direct investment (FDI) inflows have increased for projects and investment assets, leading the creation of employment opportunities in the country. In the late 1990s, “Win-win policy” resulted in Cambodia achieving full peace, political stability, territorial integrity, and national unity for the first time. These achievements laid the foundation for subsequent social and economic development.

Over the last two decades, Cambodia experienced an annual economic growth rate of around 7% [1]. With high economic growth, the country seized the opportunity to enhance itself by increasing public investment, developing human resources, and initiating the establishment of a social protection system, consequently leading to gradual decrease in its poverty rate. In 2015, Cambodia transitioned from

being a low-income country into a lower-middle-income country, and the government has set ambitious goals to further progress. The aim is to become a higher-middle-income country by 2030 and a high-income country by 2050.



Unfortunately, since 2020, Cambodia, like the rest of the world, has been affected by the global health crisis caused by the spread of COVID-19, leading to negative economic growth. Cambodia's economic growth rate declined to -3.1% in 2020 before rebounding to 3% in 2021 and 5.2% in 2022 [1]. As a result of this crisis, both the private and public sectors have undergone significant changes in their working styles.



Business operations have been disrupted since the first quarter of 2020, prompting the government to carefully monitor the situation. In April 2021, the government decided to announce the two-weeks lockdown in the capital city and several other cities and provinces, with partial lockdowns continuing in various locations. This hindered the full operation of most enterprises that led to the implementation

of working-from-home policies in most private companies and government agencies. The government also made considerable efforts to provide vaccination for the population. At the same time, wage subsidies were also implemented for the two most affected sectors, namely the garment and tourism sectors. Further, many of the public services were interrupted. In 2020, mobility trends for places of work decreased by -18.4% with a further decline in 2021 by -26.7%, compared to the baseline period from 3 January to 6 February 2020 [2].

This situation has served as a catalyst not only for businesses but also government agencies and citizens to adapt to the “new normal” while responding to the challenges posed by the Fourth Industrial Revolution (IR4.0). In this new normal, businesses have no other options but to leverage and maximize the benefits of Internet of Things (IoT) and advanced information and communication technologies (ICT) to maintain daily operations, increase productivity, and improve business efficiency. This shift in working styles has not only been a response to the pandemic but also continues as businesses seek to capitalize on the advantages of new and advanced technologies to foster an agile working environment.

The transformation to operational Agile working style has been supported by two main factors during and after the pandemic: government interventions and the benefits of demographic dividends.

Among the least developed countries, Cambodia’s connectivity performs quite well compared to its peers. For instance, mobile cellular subscriptions in Cambodia reached 120% in 2022, compared to an average of 78.7% for least developed countries and an average of 66.3% worldwide. Additionally, about 60.2% of Cambodia’s population used the internet, which is close to the global average of 66.3% during the same period [3]. This indicates that Cambodia’s connectivity structures are relatively good and can support technology transformation in both public and private institutions. The transition from traditional to Agile working style was made less challenging in terms of connectivity.

TABLE 3.1

SELECTED CONNECTIVITY INDICATORS FOR CAMBODIA, LEAST DEVELOPED COUNTRIES (LDCS), AND THE WORLD IN 2022

Connectivity Indicators	Cambodia	LDCs	World Average
Share of individuals using the internet (%)	60.2	36.1	66.3
Mobile cellular subscriptions per 100 inhabitants	120	78.7	108
Fixed telephone subscriptions per 100 inhabitants	0.2	0.6	10.8
Mobile broadband subscriptions per 100 inhabitants	105.7	41.9	86.9
Fixed broadband subscriptions per 100 inhabitants	2.0	1.6	17.6
Share of population covered by at least 3G mobile network	96	83	95
Share of population covered by at least 4G mobile network	96	49	88
Mobile broadband basket as a percentage of GNI per capita	2.3	5.8	1.5
Fixed broadband basket as a percentage of GNI per capita	11.6	18.5	3.2

Source: International Telecommunication Union, March 2023 [3].

Despite relatively well-performing connectivity compared to countries with similar economic status, the education level of Cambodia’s current labor force however may pose a challenge. Although there have been some improvements over the last decade, most of Cambodia’s labor force have only completed primary school education. Only 14.9% have completed low secondary school, 7.2% have completed upper secondary school, and another 7.4% have completed post-secondary school education [4].

TABLE 3.2**EDUCATION LEVEL OF LABOR FORCE (2009–20)**

Year/Education Level	None or Only Some Education	Primary School Not Completed	Primary School Completed	Lower Secondary Completed	Upper Secondary Completed	Post-Secondary Education	Don't Know
2009	20.2	35.1	26.1	11.9	4.6	2.1	0.1
2010	17.7	35.2	26.5	13.3	5.2	2.1	0.0
2011	15.0	34.4	27.3	15.1	5.7	2.5	0.0
2012	14.0	34.6	28.0	14.3	6.2	2.8	-
2013	13.1	35.4	27.2	13.8	6.8	3.6	0.0
2014	8.3	24.7	40.7	21.4	3.2	1.7	
2015	4.9	25.2	46.6	19.6	2.7	1.0	-
2016	9.7	32.3	28.9	15.1	7.3	6.7	-
2017	2.9	25.2	40.7	24.4	5.5	0.7	0.5
2020	12.4	31.8	26.4	14.9	7.2	7.4	-

Source: National Institute of Statistics (NIS), 2009–20 [4].

Agile working requires a workforce capable of critical thinking, creative problem-solving, and adaptability to change. A workforce with higher education levels is more likely to possess these skills and be able to thrive in an agile environment. Education level can significantly impact Agile working styles in various ways:

- **Understanding and implementing Agile methodologies** - Agile methodologies can be complex, requiring a certain level of education and training to understand and implement them effectively. A workforce with higher education levels is more likely to grasp and execute Agile methodologies quickly and easily
- **Critical thinking and creative problem-solving** - Agile working demands the ability to think critically and solve problems creatively. A workforce with higher education levels is more likely to have these skills
- **Adaptability to change** - Agile working thrives in a dynamic environment and the ability to adapt to change is essential for success. A workforce with higher education levels is more likely to be able to adapt to change more quickly and easily
- **Ability to work independently and collaboratively** - Agile working necessitates both independent work and teamwork. A workforce with higher education levels is more likely to excel in both aspects
- **Effective communication** - Agile working requires effective communication among team members, stakeholders, and customers. A workforce with higher education levels is more likely to have good communication skills

Focus and Scope of Case Analysis

This paper will enhance understanding of Agile working practices in the public sector in Cambodia by elaborating the government policies that support the Agile working approach. The literature review will present best practices of operational Agile working in various institutions, including those in the public sector. Additionally, it will present some perceptions of Cambodian employees regarding Agile working practices following the COVID-19 pandemic.

In the Case Analysis segment, the paper will outline the changes in working practices within the public sector, specifically focusing on MLVT. The operational Agile working approach for MLVT comprises two main components: first, the alteration of international operations, and second, the launch of an online platform for public services. While both components faced some challenges, MLVT leadership successfully managed them with proper supporting mechanisms. Finally, the paper will propose policy options based on the case analysis.

Literature Review

Defining Agile Working Style

Agile working style is not a new term and different people may define it differently. Some people define it as the style of working that organizations empower their employees to work where, when, and how they choose. The initial concept of Agile working is to maximize flexibility while minimizing constraints. This allows businesses to work smarter by removing location or time barriers [5]. In a workplace, Agile can be referred in two ways: workforce Agile and operational Agile. Workforce Agile refers to flexibility in matching workforce fluctuation to demand while operational Agile refers to the responsiveness and adaptiveness of process and structure [6].

Agile working has been reported to benefit both businesses and workers in different ways. For example, the County Council of Cumbria, a ceremonial county in Northwest England, set up the Agile working style named “Better Place for Work” program. It claimed that this style of working helps to [7]:

- Increase work effectiveness
- Decrease council operation costs by making best use of the council's assets
- Focus more on works over processes, enabling flexible time and location for work
- Improve staff work-life balance by arranging flexible working hours for both staff and customers
- Encourage collaboration and innovation in the office through technology, which leads to reducing the need for physical meeting and travel time
- Minimize environmental footprint

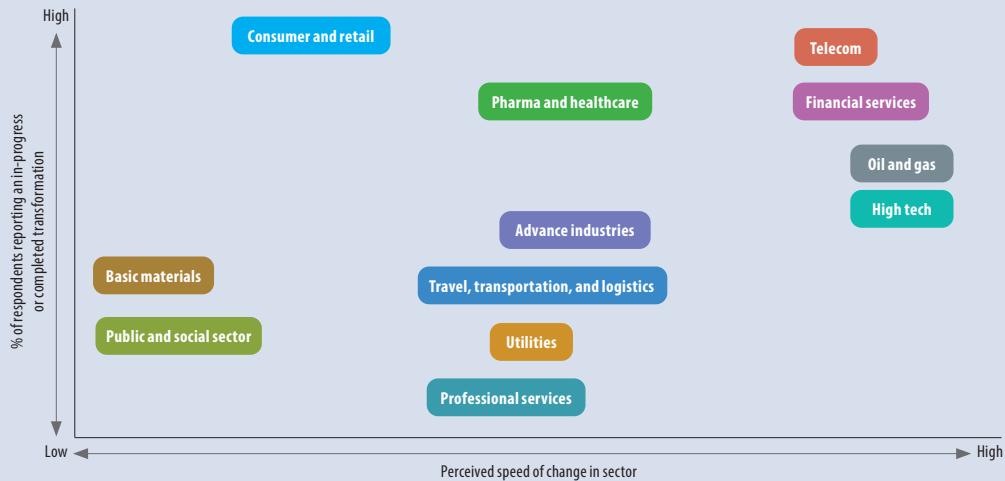
The Council applied a four-stage process to adopt the Agile working style:

- **Stage 1: Awareness** - All staff need to understand the common goals of transitioning from traditional to Agile working. Informing everyone about the benefits of this transformation is crucial
- **Stage 2: Preparation** - Prepare all supporting tools and infrastructure, initiate gradual practice of change, and address challenges encountered during implementation
- **Stage 3: Implementation** - Begin engaging staff in practicing the Agile working style
- **Stage 4: Embedding** - Review to ensure the Agile working style remains relevant to work circumstances and identify areas for improvements

However, Agile work transformation can vary across sectors, potentially due to the sector-specific characteristics. For example, a survey by McKinsey & Company involving 2,000 global respondents revealed that the telecom and financial services sectors reported a high percentage of transformations with rapid changes [8]. Sectors, such as consumer and retail, pharma and healthcare, oil and gas, and high-tech also demonstrated a significant share of transformations. In contrast, the public and social sectors had a smaller share of transformation. This suggests that sectors embracing more technology in their daily operations tend to undergo more transformations.

FIGURE 3.3

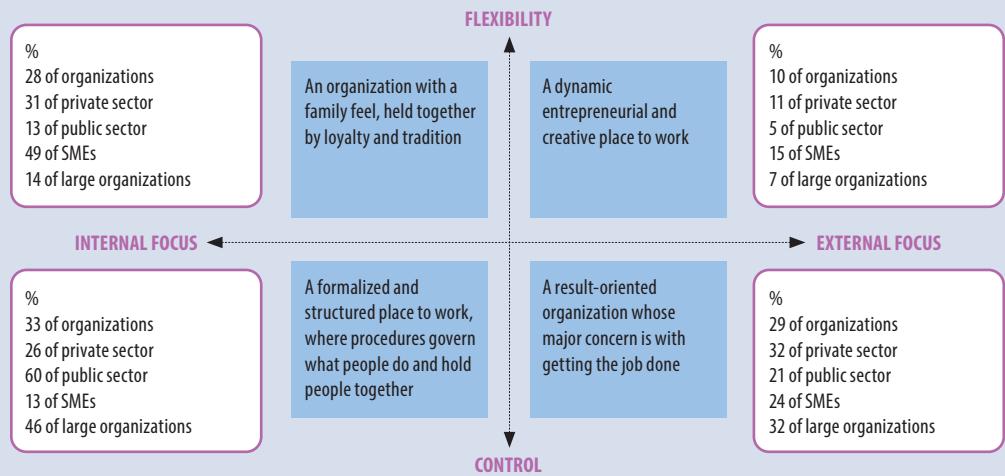
AGILE WORK TRANSFORMATION RESPONSE BY SECTORS



Source: McKinsey & Company, May 2021 [8].

FIGURE 3.4

AGILE WORK TRANSFORMATION BY SECTORS

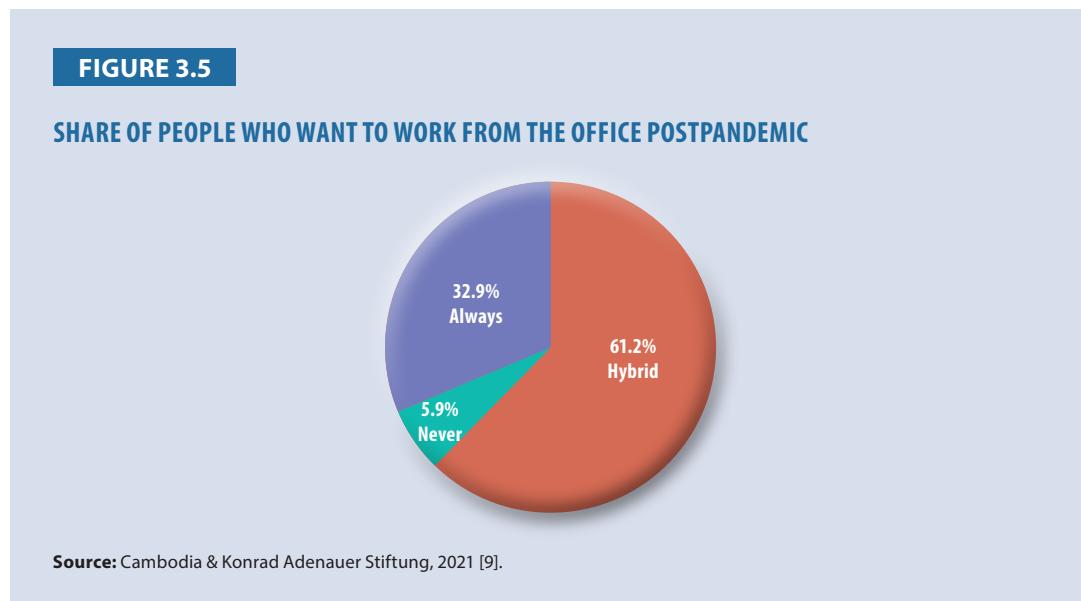


Source: The Agile Forum, November 2014 [6].

Figure 3.4 shows that the response to change depends on the organizational culture. Institutions with an internal focus and greater control tend to resist change. For instance, 60% of public-sector organizations fall into this category (internal focus and control) [6].

Agile Working Style in Cambodia

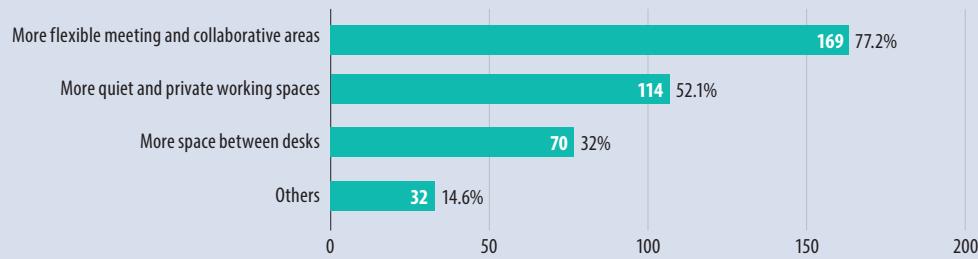
Even though the COVID-19 pandemic has accelerated the use of technology and changed working styles, perspectives on Agile working style in Cambodia are mixed. While not many people prefer to work in the office, around 61.2% of respondents expressed a desire for hybrid work arrangements, which became prevalent after the pandemic [9].



Moreover, employees are more likely to travel less postpandemic, indicating that commuting to work may not be the preferred option after experiencing remote work between 2020–21 [9].

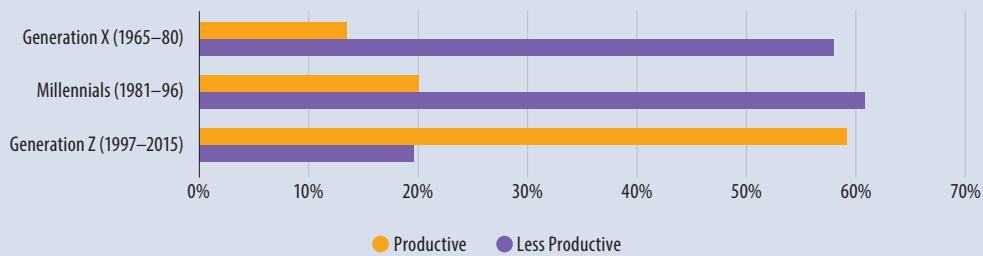


Changes in office design and meeting arrangements have also changed. A significant number of employees (77.2%) prefer flexible meeting and collaborative areas while 52.1% would like to have more quiet and private working spaces. Approximately, 32% want more space between desks [9].

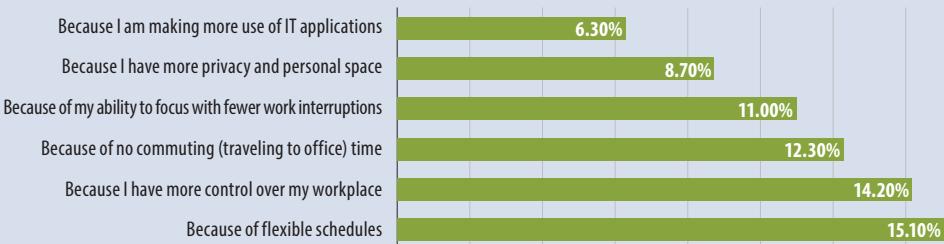
FIGURE 3.7**TOP PRIORITIES WORKERS WOULD LIKE TO HAVE AFTER THE PANDEMIC**

Source: Cambodia & Konrad Adenauer Stiftung, 2021 [9].

The younger generation tend to favor Agile working arrangements while older generation are more resistant to change. Productivity levels also differ between the younger and older generations when working remotely. Those born between 1997 and 2015 claim to be more productive when working remotely while less than 20% of those born between 1965 and 1980 share the sentiment [9].

FIGURE 3.8**PRODUCTIVITY IMPROVEMENT ACROSS GENERATIONS WHILE WORKING REMOTELY IN PERCENTAGE**

Source: Cambodia & Konrad Adenauer Stiftung, 2021 [9].

FIGURE 3.9**EMPLOYEES' REASONS FOR IMPROVED PRODUCTIVITY**

Source: Cambodia & Konrad Adenauer Stiftung, 2021 [9].

Young individuals who prefer remote work cite reasons, such as flexible schedule (15.1%), greater control over their workspace (14.2%), and no commuting time (12.3%) [9].

Case Analysis

Support of National Policies

The government rolled out several policies to support the transformation and adoption of new technologies. These policies include:

- i) **Strategic Framework for Economic Recovery 2021–2023** - This policy identifies digital transformation as a strategic direction to address short-term and long-term challenges. The government recognizes that during and after the COVID-19 crisis, digitalization is an effective tool for economic growth, improving the general population's way of life, and enhancing the functioning of both private and public sectors. In the digital sector, the policy focuses on two main objectives: (i) to enhance the implementation of measures outlined in the Digital Economy and Society Framework 2021–2023; and (ii) to develop and strengthen the quality of digital public service [10].
- ii) **Cambodia Digital Economy and Society Framework 2021–2035** - This framework aims to "build a digital economy to become both a new growth driver, as well as an ecosystem to contribute to increasing economic productivity and efficiency, and improve the welfare of the people of Cambodia's digital society." It outlines five policy goals to achieve this objective [11]:
 - **Developing infrastructure** - Focuses on expanding the high-speed internet network, setting up digital payment systems, and implementing logistics system and last-mile delivery to support the digital socioeconomic development process
 - **Building reliability and confidence in digital system** - Concentrate on establishing legal frameworks and raising awareness of digital security to increase reliability and confidence among relevant stakeholders. This initiative aims to encourage a wider participation in the digital socioeconomic development process
 - **Building digital citizens** - Aims to promote digital leadership, develop and mobilize digital talents, and transform digital citizens into a driving force for digital transformation
 - **Building digital government** - Emphasizes promoting digital public services based on principles of being simpler, faster, better, and cost-effective. Strengthening data-based governance is also a focus to enhance the role of the public sector in paving the way, bridging investment gaps, and streamlining public-service delivery in the digital era
 - **Enabling digital businesses** - Focuses on encouraging enterprises, especially small and medium enterprises (SMEs), to widely adopt digital technologies. This includes creating ecosystems for start-ups and fostering participation in regional and global digital chains aimed at encouraging businesses to leverage technology systems, exploit digital technologies, and promote innovation
- iii) **Cambodia Productivity Economic Policy Framework 2022–2035 [12]** - Sets its vision to build and improve national economic productivity through a high-skilled labor force and innovation to drive social and economic development. Among the four strategic goals, this policy framework aims to:
 - **Increase the adoption of technology and innovation** - Increase competitiveness and build value for the economy and society by prioritizing technological skills development, supporting businesses in adopting technology and innovation, and strengthening the inter-institutional cooperation on technology and innovation

- **Build capacity of public institutions** - Aims to enhance management and governance, increase productivity, and improve public-service efficiency for long-term resilience and sustainability

Operational Agile Working Approach Implemented at MLVT

MLVT was established in 2005 with the mission to promote the livelihoods, dignity, rights, freedom, and social protection of Cambodian workers domestically and internationally. It also aims to strengthen industrial relations based on the principles of transparency and accountability, and to develop capable, productive workforces with good morals and behaviors as well as adaptable to technology, social, and economic structures.

In its strategic development plan for 2019–23, the ministry focuses on: (i) promoting working conditions and industrial harmonization; (ii) modernizing technical and vocational education and training system; (iii) maintaining and creating employment for Cambodian labor forces domestically and abroad; (iv) developing social security systems; and (v) strengthening general support services.

With the goal of encouraging industrial harmonization and improving working conditions, MLVT has registered and provided various public services to about 18,000 enterprises with 1.5 million workers nationwide. Thus to enhance service effectiveness, MLVT has implemented Agile operations for both internal work processes and public-service delivery through the adoption of appropriate tools and technology.

As shown in the literature review in the previous section, institutions like the public sector, characterized by formalized structures and procedures, are often resistant to transitioning to Agile working style. However, MLVT has seen a cultural shift at some levels that are attributed to widespread internet connectivity, the introduction of new technologies, and notably, the willingness and commitment of MLVT leadership.

Situation

Since its establishment in 2005, MLVT has tried to improve the efficiency and effectiveness of its operations, spanning from internal operations to the delivery of its public services. Currently, the MLVT employs approximately 4,500 officials nationwide. About 37% of these officials are based in the main office located in Phnom Penh, the capital city of Cambodia while the remaining 63% worked in offices spread across 25 cities and provinces.

The working approaches, including the provision of public services, have gradually evolved, especially since the onset of the COVID-19 pandemic in early 2020. Among others, there are three areas that have observed notable changes in the last few years that are attributed to rapid improvement of technology, improved internet services, and the proactive leadership of the MLVT (Figure 3.10).

FIGURE 3.10

CHANGE TOWARD OPERATIONAL AGILE WORKING APPROACHES



Issues

Before 2021, MLVT primarily provided its services manually, adhering to traditional internal operations, including communication methods among officials. This approach posed several challenges, including:

- **Limited accessibility** - One of the primary challenges faced by the MLVT is limited accessibility to its services. Traditional methods of service provision, such as physical visits to main offices, often require individuals to travel long distances, incurring inconvenience and additional expenses. This poses a significant challenge for those residing in different provinces or individuals with limited mobility. Consequently, this limited accessibility hampers the MLVT's ability to reach a wider service receiver base, including employers and workers, and could not provide services equitably despite maximum efforts by management and officials of the ministry
- **Time-consuming** - MLVT's manual processes are often time-consuming, resulting in delays in service delivery despite providing numerous public services. The need for physical paperwork, multiple visits, and lengthy administrative procedures can be frustrating for both service providers and recipients. For example, individuals seeking work permits or vocational training enrollment may face waiting times, leading to dissatisfaction and potential economic setbacks. These delays not only impact individuals but also hinder the overall productivity of the workforce, including MLVT officials
- **Inefficient resource allocation** - Another challenge faced by the MLVT is inefficient resource allocation due to manual paperwork and data management. This requires a significant number of human resources, leading to increased costs and potential errors. The allocation of officials to handle administrative tasks limits their availability for more critical functions, such as policy formulation and implementation. As a result, the MLVT's ability to address emerging labor market challenges and provide timely support to the workforce is hindered
- **Doubts regarding transparency and accountability** - MLVT officials may perform professionally based on their assigned duty and timeframe set in legal regulations, but without tracking mechanism, the public may question the transparency and accountability in the MLVT's service provision. Traditional methods of service delivery often lack clear mechanisms for tracking the progress of applications, making it difficult for individuals to ascertain the status of their requests. This opacity can lead to mistrust and dissatisfaction among service recipients, further exacerbating the challenges faced by MLVT
- **Inadequate data management** - MLVT's reliance on manual data management systems poses a significant challenge. The absence of a centralized database makes it difficult to analyze labor-related data and develop effective policies. Inadequate data management also impedes MLVT's ability to accurately monitor and evaluate the impact of its programs and initiatives accurately
- **Challenge for internal communication and document processing** - Communication among MLVT officers is slower and less efficient, relying on traditional methods, such as phone calls or physical meetings, that consume more time. Document processing that requires printing and submitting documents for review (as carried out traditionally), further add to inefficiencies

Solutions

The management team of MLVT acknowledges that the change toward operational Agile approach using technology can streamline internal operation and enhance the accessibility of public services. Automation of numerous tasks and processes has transformed the workplace, reducing the time and effort required. Technology has become an indispensable component of the modern workplace. With the rise of hybrid working, technology has enabled teams to interact and cooperate more efficiently regardless of location. Management and officials of MLVT can use technology to connect with office activities. In short, the management of MLVT agreed that technology enables efficient work by automating processes, improving communication and cooperation, and providing officials with a more connected experience. Ultimately, public service will be more effective and accessible.

Working arrangement using technology

Since the onset of the COVID-19 pandemic, the mode of work has undergone significant changes, particularly in meeting formats. Face-to-face meetings have been reduced and replaced by online meetings, with Zoom being the common platform used by MLVT.

In addition to changes in setting up meetings, document processing has also undergone some level of transformation. Currently, many documents, including official ones, can be processed online via platforms, such as WhatsApp and Telegram messenger.

Launching online platform for providing public services

MLVT has launched an online platform for a range of services, from company registration to labor-related services. This shift not only changes the workflow for MLVT officials but also improves the business environment. Officials no longer receive hard copies of documents from business owners and workers, enabling them to work more productively by providing more efficient services through online platforms. Business owners can save time by not having to repeatedly fill in same information for different requests or visit MLVT to submit documents. Instead, they can work on the MLVT platform from their offices, saving time and travel expenses.

One of the most effective services is business registration, which integrates different public institutions and ministries, including MLVT. If relevant ministries do not inspect or raise objections within one working day, registrations are automatically processed. In case of false information, the relevant institution has the right to revoke the license within one month.

Since 11 January 2021, MLVT has also launched public services related to labor and vocational trainings through an automation system to enhance quality, effectiveness, transparency, and accountability, in line with the request of private sectors in the Industrial Relations Working Group of the Government-Private Sectors Forum.



Two main services that have transitioned to operational Agile work for all relevant MLVT staff include labor-related services and self-declaration of labor inspection. MLVT has put 17 services online to facilitate this transition.

TABLE 3.3**SERVICES RELATED TO LABOR**

Services Related to Labor Sector	
1. Enterprise opening registration	2. Issuing recognition letter for shop steward election
3. Enterprise book registration	4. Approval on the use of child labor between 12–15 years of age or between 15–18 years of age
5. Registration of Payroll Book/Approval of E-payroll	6. Book of child labor's names registration
7. Internal work rules registration	8. Approval of overtime work on weekdays
9. Physical check-up for local employees (at MLVT)	10. Approval of overtime work on paid public holidays
11. Issuing workbook for local employees	12. Approval on overtime work on weekend
13. Registration on declaration of movement of personnel "IN"	14. Approval of suspension of employment contracts
15. Registration on declaration of movement of personnel "OUT"	16. Approval of apprenticeship applications
17. Reissuing workbook and employment card for local employees	

Self-declaration of labor inspection

The online self-inspection system is designed to require business owners to carry out a self-review online against existing laws and regulations. According to the regulation announced by MLVT in 2021, enterprise or factory owners operating under the provision of labor law are obligated to do the online self-inspection twice a year. First, before the end of June, and second, before the end of December each year. Additionally, enterprises or factory owners need to update relevant information in the autonomous system report to proclaim work before the scheduled annual physical labor inspection conducted by the labor inspection department of MLVT.

FIGURE 3.12**ONLINE SELF-DECLARATION OF LABOR INSPECTION****Definition**

A system that allows labor inspectors to inspect the implementation of laws and regulations related to the field of labor using information technology

Regulatory in implementation process

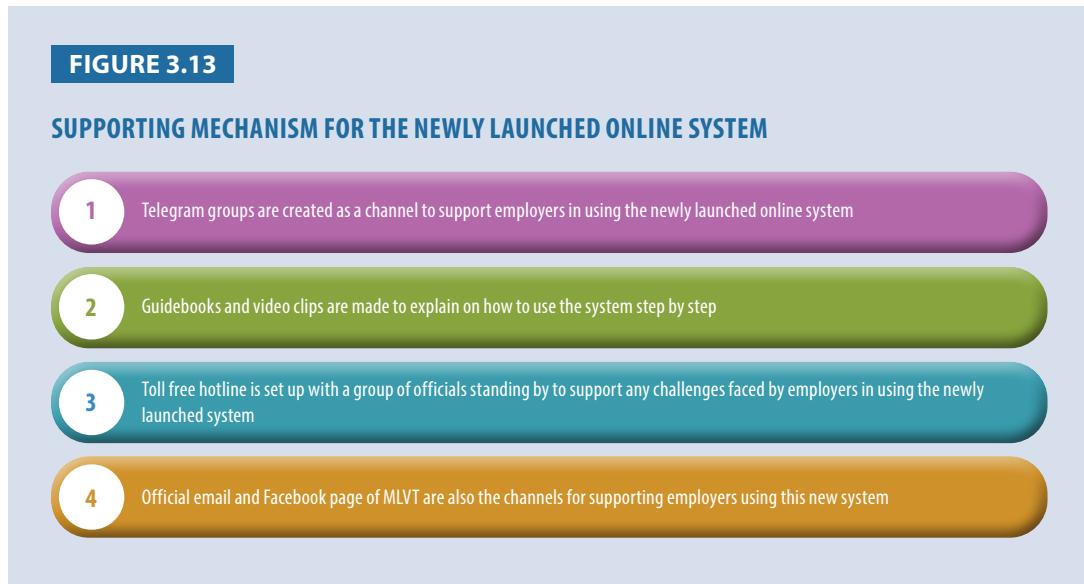
PRAKAS dated 30 December 2021 and Notification dated 27 May 2022 on the Launch of Labor Inspection Self-Declaration and Labor Inspection Via Automation System

Inspection

Regular labor inspection once/year except special labor inspection

Supporting mechanism

Changes often present challenges, especially operational changes that affect all relevant stakeholders. This applies to changes in work and service provisions at MLVT. Recognizing this, MLVT management has established several channels or methods to support those who may face challenges with the new system. Some supporting mechanisms are elaborated in Figure 3.13.



Results

Working arrangement using technology

Meetings within MLVT are now easily conducted via Zoom applications if face-to-face meeting are not required. This is cost-effective as the government does not need to spend money on missions, such as for provincial department directors and other relevant departments. This shift indicates that the working style has gradually changed toward work that is more productive and efficient. It is also in line with the government's policy to promote digital government from 2023.

In government institutions over the past several years, document processing has become easier, faster, and more efficient. The vast majority of government officers, from top-ranking officials to the prime minister, communicate and process documents via Telegram. Documents can be sent via Telegram while feedback or directions can be given by the responsible officer online if desired.

Launching online platform for providing public services

As of October 2023, over two years after launching the online platform, approximately 12,000 enterprises are registered and currently using online service (2.5 million requests submitted), accounting for 68% of total enterprises registered at MLVT.

Transitioning some services online has significantly changed not only the way MLVT officers work toward operational Agile working styles but also improved productivity and the business environments. Thus far, daily work efficiency has increased as online services have streamlined processes and reduced the need for manual paperwork, resulting in increased efficiency. Assigned officers can now process applications and requests more quickly, leading to faster service delivery. Simultaneously, with online services, MLVT officers can allocate their time and resources more effectively. The management can focus on critical tasks, such as policy formulation and implementation, as administrative tasks are automated or simplified through online platforms.

With online platform, MLVT management from each department and business owners can easily track documents and monitor the status of requests, improving transparency and accountability.

Self-declaration of labor inspection

Instead of randomly conducting labor inspections with limited information, labor inspection departments can effectively manage their resource and set targets for conducting inspections based on data collected from online self-declaration of enterprises.

TABLE 3.4

DIFFERENCE BETWEEN TRADITIONAL AND ONLINE SELF-DECLARATION LABOR INSPECTION

Traditional Labor Inspection	Online Self-declare Labor Inspection
The methods for providing advance notice of inspections and updating factory information remain limited. Consequently, department officials devote significant time to composing and dispatching letters to enterprises regarding inspection notifications.	The advance notices for inspection work is prepared electronically with detailed information of each enterprise is managed by the IT system. It saves times and money.
Lack of understanding of the law and inaccurate provision of information in labor inspection reports create unrealistic expectations and hinders the implementation of a culture of compliance.	Increases awareness of the law and provides more comprehensive information through data with public services in the field of labor domain, coupled with the identification of inaccuracies by the labor autonomous system, will create a preventive system against enterprise law violations and disputes over benefits.
The information and data gleaned from the Labor Inspection Report are difficult to analyze to make timely strategic decisions.	Information factories and enterprises is managed by information technology systems that is capable of predicting trends in various sectors and facilitating strategic analysis.

Key Success Factors

National policies support

One of the driving factors behind MLVT's adoption of Agile working approaches is alignment with all national policies, especially those enacted after the COVID-19 pandemic, with the aim to build a digital Cambodia for citizens, businesses, and government. These policies provide crucial support without which transformation in each ministry may be hindered by budgetary constraints.

Management support

Senior management, especially the minister, plays a pivotal role in supporting the implementation of Agile working approaches. Their endorsement ensures that Agile working is given the necessary resources and support to succeed. MLVT's top management has set a clear vision in transforming daily work and public service delivery into a modern working environment.

Cultural change and willingness

All officials embrace new ways of working and become more flexible and adaptable. During the early stages of launching the online platform, MLVT officials were mobilized to learn about the system and later supported the change, demonstrating a willingness to adapt to new practices.

Setting up supporting mechanisms

Establishing supporting mechanisms is essential to ensure that the new work method proceeds smoothly. Without these mechanisms, employers may struggle to utilize the new system, potentially leading to failure of the initiative.

Discussion

The adoption of Agile working practices in Cambodia both in the public and private sectors has gained recognition and acceptance. However, there are still persistent challenges in achieving widespread adoption. A survey cited in the literature review indicates a preference for Agile working among the younger generation while the older generation appears less familiar with the concept. This may be due to the lack of awareness and understanding of Agile working as well as barriers, such as limited access to technology and digital infrastructure, cultural norms that favor traditional work arrangements, and resistance to change.

The government, particularly during the seventh mandates of the National Assembly, has intensified efforts to promote digital usage and technology adoption, thereby encouraging the implementation of Agile working practices within the public sector. This can be seen from several newly adopted national policies, especially following the COVID-19 pandemic, aimed at fostering digital adoption in the era of IR4.0. The government believes that embracing these new technologies can enhance public administration and governance. Even though there are no detailed data on the adoption of Agile working practices within MLVT and government agencies, addressing these challenges and barriers is crucial for successful implementation. This involves a multifaceted approach incorporating technological solutions, process improvements, and cultural changes. Upgrading technology infrastructure, developing collaborative tools, establishing document management guidelines, providing training and awareness programs, fostering a culture of innovation, and regularly reviewing and updating policies are important steps that can be taken in this endeavor.

It is also important to note that creating a supportive organizational environment is paramount for the successful implementation of Agile working practices. MLVT and government agencies should foster a culture that values flexibility, innovation, and collaboration. This can be achieved through effective communication channels and regular feedback mechanisms, ensuring that employees feel empowered to embrace Agile working practices and contribute to their successful implementations.

Policy Implications and Recommendations

Given the status of Cambodia's development status, especially in digital and technology adoption, MLVT should consider the following policy options:

- i) **Regular feedback review** - As the ministry provides public services, MLVT should regularly solicit and review feedback from both employers and employees to improve service satisfaction and make necessary adjustments as needed, especially for services provided via online platform. Implementing a brief online survey alongside existing platforms after service delivery can facilitate this feedback loop.
- ii) **Investment in technology infrastructure** - MLVT, in alignment with the seventh mandates of the National Assembly, has invested in technology infrastructure, and should prioritize investment in technology infrastructure. This includes at headquarters and provincial levels, including technical training institutions under the supervision of MLVT.
- iii) **Development of collaboration tools** - MLVT should explore and invest in collaboration tools that facilitate simultaneous document collaboration among officers. This may involve implementing cloud-based document management systems or adopting online collaboration platforms. Initial implementation can be piloted in select departments, drawing insights from successful implementations in the private sector.
- iv) **Promote training and awareness** - MLVT should conduct regular training sessions to educate officers on alternative methods and best practices. Training topics may include effective email

communication, utilization of file-sharing platforms, secure document handling, and service provisions through online platform.

Conclusion

In summary, Cambodia has potential in implementing operational Agile working practices, particularly evident since the onset of the COVID-19 pandemic. The shift in working styles has gained more recognition and acceptance across both government and private sector. Thus it may not be a new concept for both employers and employees anymore. With a young population, fast development of modern technology, robust connectivity, and the commitment and willingness of the government, the groundwork for implementing operational Agile working approaches is well-established and ready to be implemented, especially in government offices.

Even though some studies found that the operational Agile working approach may be challenging to be implemented in some sectors, especially in the sectors with more control and internal focus like the government, these obstacles can be overcome with speed and commitment. For instance, in response to technological transformation and government policies, MLVT has internally transformed its work processes and transitioned most of its services online. This shift has not only streamlined MLVT's internal operations but also enhanced productivity for businesses. Even though, MLVT faced initial challenges during the launch of its online platform, the ministry has successfully mitigated these issues with the intensive support from officials during implementation, resulting in smooth operations within two years.

While positive change is evident from operational Agile working approaches, further actions may be necessary. These include investing in technology infrastructure, developing collaboration tools, providing comprehensive training and awareness programs, fostering a culture of innovation, and regularly getting and reviewing feedback from service receivers. It is crucial to recognize that successful implementation of operational Agile working practices requires not only technological solutions but also cultural changes and a supportive organizational environment. MLVT should consider tailoring its approach to the specific context and needs of its organization accordingly. By doing so, MLVT can leverage Agile working practices to enhance its performance, improve employee satisfaction, and better serve the needs of the Cambodian people.

CHAPTER 4 : INDIA

INDIA'S IT SECTOR AND ITS AGILE WORKING STYLE FOCUSING ON CULTURAL ALIGNMENT FOR PRODUCTIVITY

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Abstract

The success stories of prominent IT companies, including Tata Consultancy Services (TCS), Infosys, MakeMyTrip, Wipro, Flipkart, and Mindtree are critically reviewed to underscore the impact of adopting the Agile Working Style. These case analyses delve into the multifaceted landscape of Agile methodologies within the Indian context, focusing on culture changes, transition strategies, efficient tools, and project management for Agile teams. It addresses challenges in Agile project management and provides strategic recommendations for overcoming them. Key areas explored include cultural compatibility, the impact of technological considerations on Agile adoption, data protection, policy recommendations, and strategies for successful Agile implementation. The researchers used a canvas of five building blocks as a standardized framework for consistent representation of case analysis. TCS approached integrated Agile with cultural alignment and resource provisioning, Infosys emphasized change management and cultural integration, MakeMyTrip thrived in the competitive travel industry through Agile, Wipro combined cultural change and client education, Flipkart's customer-centric Agile approach sustained its e-commerce dominance, and Mindtree's commitment to Agile yielded improved project outcomes and scalability. Beyond process changes, these transformations encompassed cultural alignment, client collaboration, and employee development. These cases highlighted the holistic nature of Agile transformations, driving positive outcomes across IT industries.

Introduction

In recent years, there has been a significant surge in the adoption of Agile working methodologies in India, with a particular emphasis on the information technology (IT) and manufacturing industries. Agile techniques have emerged in response to the dynamic nature of software development and project management, prioritizing the attainment of swift, cost-efficient, and customer-centric results.

The fundamental tenets of Agile techniques emphasize the significance of adaptability through the utilization of self-organizing teams, the emergence of architecture and requirements, task modularity, and incremental development in concise iterations. Agile methodology places considerable attention on the makeup of teams, with a focus on including highly qualified and experienced developers. Additionally, active involvement from client representatives is sought to facilitate good communication with stakeholders.

The adoption of Agile working styles in India signifies a shift away from conventional managed services toward Agile managed services. It is in accordance with the need to effectively expand digital work in response to evolving market requirements.

The discourse surrounding Agile working methodologies in the Indian context also covers the examination of the obstacles and prospects that emerge from the nation's extensive cultural variety and entrenched hierarchical systems. The essential importance lies in achieving cultural compatibility and adaptability that focuses on aligning Agile concepts with the distinctive cultural fabric of India. This alignment is crucial in order to facilitate cooperation, effective communication, and cohesive teamwork.

As the adoption of Agile techniques in India persists in its pursuit of augmenting creativity, productivity, and competitiveness, it becomes increasingly imperative for organizations and policymakers to adeptly manage the complexities inherent in this revolutionary expedition. The cultural, technological, and legislative factors unique to India significantly influence the effective adoption of Agile methodologies.

In the present setting, the emphasis lies on the role of tools and technologies in aiding Agile operations. While the IT sector in India demonstrates proficiency in this aspect, it is worth noting that other industries, such as manufacturing, may necessitate investment in appropriate software and infrastructure to effectively facilitate Agile methodology.

Moreover, the COVID-19 pandemic has expedited the worldwide transition to remote work, which in turn has significant ramifications for Agile teams operating in India. The importance of effective communication channels, virtual collaboration technologies, and remote work practices has significantly grown in recent times.

Further, the increasing apprehensions over data protection and security in the Indian context underscore the importance of incorporating strong data security measures into Agile working environments. This encompasses adherence to the data protection rules of India, the use of encryption measures, the localization of data, and the enforcement of rigorous access controls.

The implementation of Agile methodologies in India signifies a substantial transformation in the realms of project management and software development. It requires a careful and nuanced strategy due to many cultural, technological, and legislative factors. This approach should prioritize the alignment of cultural values, the readiness of technology infrastructure, the ability to work remotely, and the assurance of data protection.

Focus and Scope of Case Analysis

The primary focus of this study is on conducting case analyses on Agile working in Indian organizations, particularly the IT industries. The prime objective of this study is to examine several facets pertaining to Agile techniques and their implementation.

Agile practices have seen a notable rise in Indian firms with domains, like IT, manufacturing, and healthcare, at the forefront. Widely recognized Agile models, such as Scrum, Kanban, and Extreme Programming (XP) are common, providing versatility and flexibility in project oversight [1]. The IT domain, being an early enthusiast, has observed extensive Agile integration, highlighting cyclical development and tight customer collaboration [2]. Conversely, sectors like manufacturing are progressively acknowledging Agile's merits in adapting to market shifts [3].

- **Cultural synchronization in Agile integration** - The alignment of culture is pivotal for Agile's successful adoption within Indian firms. India's multifaceted cultural setting offers both prospects and obstacles. Agile's core tenets of cooperation and group dynamics might align with India's collective culture, emphasizing group unity and consensus-driven choices [4]. Yet, the top-down organizational setup and respect for seniority in Indian professional settings might conflict with Agile's autonomous and empowered groups [5]

- **Obstacles and impediments in Agile evolution** - Shifting to Agile project management in India comes with its own set of challenges. Firms face opposition from staff familiar with conventional approaches [2]. The limited availability of Agile specialists is a concern, necessitating resources for training and capability enhancement initiatives [6]. Cultural aspects, like communication norms and authority dynamics, must be tackled to effectively nurture Agile methods [4]. Moreover, the swift expansion of Agile across varied sectors and locales in India brings scalability issues [3]
- **Triumph tales and proven methods** - Numerous Indian entities have successfully adopted Agile practices. An illustrative example is a prominent Indian global IT firm that integrated Agile methods, witnessing marked enhancements in efficiency and client contentment [1]. Crucial elements for success encompass leadership dedication, comprehensive training, and cultivating an atmosphere of transparent dialogue and cooperation
- **Policy and regulatory considerations** - Indian firms must maneuver through policy and regulatory landscapes, especially concerning data safeguarding and employment regulations. The upcoming Personal Data Protection Bill in India demands adherence measures in Agile settings [2]. Upholding data confidentiality and security, given the sensitive data in Agile endeavors, is of utmost importance [1]
- **Cultural awareness and inclusiveness** - Crafting a culturally aware and inclusive Agile milieu is vital. Indian firms should acknowledge and honor the varied cultural origins of team members [5]. Tactics to champion inclusivity encompass encouraging open dialogue, recognizing cultural variances, and valuing diversity [4]
- **Training and capability enhancement** - Allocating resources to training and capability enhancement initiatives is crucial to addressing the Agile skill deficit [6]. Indian professionals necessitate training in Agile models, teamwork, critical thinking, and flexibility [1]. Collaborations between the government and industry can further the creation of certified Agile experts, leading to a proficient Agile workforce
- **Technological infrastructure for Agile** - The digital infrastructure landscape in India differs across sectors and regions. While the IT domain enjoys a solid digital foundation, the manufacturing and rural sectors confront infrastructure hurdles [3]. Boosting digital infrastructure in less-served regions is essential for balanced Agile integration [6]
- **Distributed Agile operations and data safeguarding** - The COVID-19 outbreak fast-tracked the trend of remote operations, influencing Agile groups in India. Distributed Agile collaboration depends on tools and technology for dialogue and project oversight [5]. Nonetheless, guaranteeing data safeguarding and security in dispersed Agile teams is crucial, especially with the surge in remote operations [1]

Literature Review

Agile practices have become increasingly prominent in India's dynamic corporate sector, especially within the IT and manufacturing domains. However, for these methodologies to be effectively integrated into India's distinct environment, several key factors need to be considered. One of the primary considerations is cultural alignment, given India's vast cultural tapestry, which can impact the perception and execution of Agile methods [7]. To navigate the complexities introduced by this cultural diversity, companies should evaluate their prevailing cultures and pinpoint elements that resonate with Agile principles [8].

The journey of incorporating Agile in India comes with its own set of challenges, such as opposition to new methods, limited familiarity with Agile, and the imperative for extensive training and mentorship [9]. It is essential for businesses to channel resources into Agile educational initiatives that encompass both Agile techniques and cultural nuances [10].

Having access to appropriate tools and technology is vital for streamlined Agile project oversight. While the IT industry in India is adequately prepared, other sectors might need to allocate investments to relevant software and infrastructure [11]. It is crucial for Agile groups to utilize communication and teamwork platforms, like Slack and Zoom, ensuring they adhere to Indian data safeguarding regulations, including the forthcoming Personal Data Protection Bill [12]. Essential Agile management tools, such as Jira and Trello should be employed, with a focus on stringent access restrictions and encryption measures [13].

The swift shift to remote operations, propelled by the COVID-19 crisis, has seen Indian Agile units working alongside global teams. Overseeing geographically dispersed Agile groups demands solid communication pathways, online teamwork tools, and strategies adapted to remote scenarios [14].

A cultural transition toward transparency, cooperation, and autonomous organization is pivotal for Agile's success in Indian entities [15]. Cultivating trust within teams, especially those that are multifunctional or geographically scattered, is vital for fruitful teamwork [10].

While India's varied talent pool can be a boon for Agile squads, creating a setting that champions diversity and inclusivity is key to instigating cultural evolution [16]. Firms can embark on their Agile path by initiating pilot projects on a smaller scale, which can act as benchmarks of triumphant Agile integration and bolster confidence in this novel approach [10].

Tackling obstacles in Agile deployment, such as disparities in digital infrastructure and legal constraints, is essential [17–18]. Collaborative efforts between governmental entities and regulatory bodies can result in the modification of employment regulations to suit Agile operational setups [18].

Effective Agile operations in India should place data safety and confidentiality at the forefront. This entails adherence to data residency norms, encryption techniques, and obtaining user permissions [19]. Moreover, firms should establish a solid action plan to swiftly address potential security infringements [20].

Agile practices are transforming the way projects are managed in India. For their successful integration in India's multifaceted and evolving corporate landscape, it is imperative to address cultural alignment, skill enhancement, infrastructure upgrades, and data security.

Case Analysis through the Canvas

Leading IT firms' success tales, like those of TCS, Infosys, MakeMyTrip, Wipro, Flipkart, and Mindtree, all emphasize the value of implementing Agile principles in their respective fields. These adjustments went beyond simple process modifications and included wider changes to culture, client collaboration, and staff growth.

Several success stories show how Agile transformations can have a beneficial impact across a range of industries when they are tackled holistically. For example, the success of TCS is credited to its all-encompassing strategy, which combines Agile methodology with culture alignment and resource supply (Source: TCS). During its Agile at Scale transformation, Infosys placed a strong emphasis on change management, customization, and cultural integration (Source: Infosys). To succeed in the cutthroat travel sector, MakeMyTrip used Agile approaches (Source: MakeMyTrip). Through a combination of culture change and customer education, Wipro transformed itself, enhancing both productivity and client happiness (Source: Wipro). Flipkart has managed to maintain a dominant position in e-commerce due to its Agile strategy and customer-centricity (Source: Flipkart). Finally, the use of Agile approaches by Mindtree has resulted in enhanced project outcomes and scalability (Source: Mindtree).

TCS

In order to become Enterprise Agile by 2020, Tata Consultancy Services (TCS) set out on a three-year journey in 2017. TCS wanted to implement Agile throughout the whole company after realizing it was more than just an IT operating model. IT services, cognitive business operations, and enablement tasks were all included in the change, which was spearheaded by the Agile Initiative Network. TCS created Living Agile, which promotes agility as a way of life through quick, hands-on initiatives. When the COVID-19 pandemic hit, remote work became necessary, and the idea of Location-independent Agile (LIA) was established. With its management of multiple Agile projects and creation of the Agility Debt index, TCS has emerged as a world leader in agility. The business seeks to engage international standards organizations and encourage enterprise agility within the industry.

Infosys

The complex and diverse IT environment that Infosys faced as a major producer of equipment and engines made it difficult to see business demands and required a lot of human reporting work. Infosys used the Agile methodology to automate reporting, simplify applications, and optimize IT infrastructure, overcoming major obstacles, including manual reporting, expensive licensing, and project delays under the waterfall paradigm. Agile technique was used by Infosys, which increased teamwork, clarified business demands, and sped up implementation. The strategy enhanced insight into business requirements, increased productivity by up to 50%, and decreased operating expenses through 10 Sprints, eventually improving the effectiveness of business reporting.

MakeMyTrip

To remain competitive in the rapidly changing travel business, MakeMyTrip, a well-known Indian online travel agency, implemented Agile approaches, such as Scrum and Kanban, in its product development process. They established cross-functional teams, prioritized a user-centric strategy through research and feedback analysis, and engaged in short-cycle iterative development. Their Agile methodology included regular feedback loops, a prioritized product backlog, daily stand-up meetings, and release preparation. MakeMyTrip placed a strong emphasis on ongoing adaptation and development through retrospectives and made use of collaboration technologies to facilitate efficient communication across distant teams.

Wipro

In order to maintain its position as a leader in a sector that is changing quickly, the well-known IT and consulting firm implemented a strategic Agile transformation. There were difficulties in this departure from standard project management, including cultural opposition and complicated projects. Wipro still sought to increase client pleasure, raise productivity, motivate staff, establish a competitive advantage, and increase flexibility. This case study examines how Wipro effectively embraced Agile methodology, modified its culture, and flourished in a fast-paced business climate, providing insightful information for companies going through similar changes.

Flipkart

This well-known Indian e-commerce behemoth went through a transformation and adopted Agile methodology. This change reorganized internal procedures and provided a notable illustration of Agile's flexibility outside of software development. Flipkart's Agile transformation has a major influence on the e-commerce sector by focusing on operational excellence and customer centricity. This case study investigates the motivations, tactics, cultural shifts, and results of Flipkart's Agile journey, emphasizing Agile's contribution to improving flexibility and responsiveness in sizable, cutthroat marketplaces.

Mindtree

The 1999-founded multinational provider of IT services underwent an Agile transition to improve software development. Their goals included a customer-centric strategy, increased teamwork, a shorter time to market, and higher quality. The adoption of many Agile approaches by Mindtree encouraged a culture shift toward cooperation and adaptability. This transformation made Mindtree a more Agile

and client-focused leader in the IT services sector by accelerating delivery, improving software quality, raising client happiness, and boosting employee morale.

The canvas case analysis technique has been used as a standardized framework for consistent representation and analysis of the various Agile working cases. This technique is used to summarize the selected case studies in Tables 4.1–4.6.

TABLE 4.1

CASE STUDY 1 - TCS: AGILE TRANSFORMATION SUCCESS

Situations	Issues/Problems	Solutions	Results	Key Success Factors
Tata Consultancy Services (TCS) initiated an Agile transformation to adapt to the evolving IT sector demands by transitioning from traditional project management methodologies.	<ul style="list-style-type: none"> Resistance to change Difficulty in scaling Agile Cultural shift Skill gaps among employees Communication 	<ul style="list-style-type: none"> Invested in training and skill development programs Implemented change management strategies Hired Agile coaches Used Agile frameworks, like Scrum and SAFe Utilized Agile tools and technology 	<ul style="list-style-type: none"> Improved work efficiency Improved customer satisfaction Improved employee engagement Enhanced product quality Enhanced market responsiveness 	<ul style="list-style-type: none"> Strong leadership commitment and dedication A continuous learning culture Employing a skilled workforce A successful change management plan Communication using a collaborative Agile tool

Canvas analysis of Agile transformation success for TCS is summarized in Table 4.1. TCS faced challenges in adopting Agile methodologies due to resistance to change, difficulty in scaling Agile, cultural shift, and skill gaps among employees. To address these issues, TCS invested in training programs, implemented change management strategies, hired Agile coaches, and used Agile frameworks, like Scrum and SAFe for larger projects. They also utilized Agile project management tools to facilitate collaboration and communication among teams.

The results showed improved efficiency, higher customer satisfaction, employee engagement, enhanced quality, and market responsiveness. Key success factors included strong leadership commitment, continuous learning, a skilled workforce, successful change management, and the use of collaborative Agile tools.

Leadership commitment was crucial for the successful Agile transition, as it encouraged a culture of growth and learning. A skilled workforce ensured that teams were knowledgeable about Agile processes. A successful change management plan addressed cultural transformations and resistance, and collaboration tools facilitated communication between geographically dispersed teams. Overall, TCS's Agile transformation successfully met the changing demands of the IT sector.

Canvas analysis of Agile transformation success for Infosys is summarized in Table 4.2. Infosys, a multinational IT services provider, implemented an Agile at Scale transformation program to improve delivery methods and meet changing customer demands. However, the program faced resistance to change, coordination challenges, lack of Agile expertise, and varied client expectations. To overcome these challenges, Infosys implemented a strong change management approach, including leadership support, communication, and training.

TABLE 4.2**CASE STUDY 2 - INFOSYS: AGILE AT SCALE**

Situations	Issues/Problems	Solutions	Results	Key Success Factors
Infosys, a multinational IT services provider, implemented an Agile at Scale transformation program to improve delivery methods and meet evolving customer demands across its large workforce.	<ul style="list-style-type: none"> Resistance to change Coordination challenges The lack of Agile expertise Varied levels of client expectations 	<ul style="list-style-type: none"> A strong change management approach A flexible Agile framework Invested in training and certification programs Worked on client education Promote teamwork 	<ul style="list-style-type: none"> Improved productivity Improved client satisfaction A cultural shift Achieved market competitiveness 	<ul style="list-style-type: none"> Effective change management A customizable framework Client collaboration Continuous learning Cultural integration

A flexible Agile framework was created, tailored to fit various projects and teams while maintaining standardization of Agile practices. Investments in Agile training and certification programs were made to equip staff with the necessary skills. Client education was also implemented to inform clients about Agile methods, create reasonable expectations, and promote teamwork.

The results showed improved productivity, client satisfaction, and a cultural shift as Agile concepts became part of Infosys' foundation. By providing Agile services that adapted to clients' changing needs, Infosys gained a competitive advantage. Key success factors included effective change management, a customizable framework, client collaboration, continuous learning, and cultural integration.

The success of the Agile at Scale program was largely influenced by the successful integration of Agile concepts into the organization's culture and values.

TABLE 4.3**CASE STUDY 3 - MAKEMYTRIP: AGILE IN PRODUCT DEVELOPMENT**

Situations	Issues/Problems	Solutions	Results	Key Success Factors
MakeMyTrip, a leading travel company, faced threats, including cybersecurity, legislation, economic changes, and competition while opportunities included technological developments and industrial expansion. To succeed, MakeMyTrip embraced agility, modernized outdated technologies to manage resources intelligently, and offered staff training.	<ul style="list-style-type: none"> Intense industry competition Complex development process High customer expectations Team cooperation 	<ul style="list-style-type: none"> Adopted Agile methodologies Organized cross-functional team Incorporated customer feedback Embraced an iterative development methodology Implemented automated testing 	<ul style="list-style-type: none"> Faster time-to-market Improved customer satisfaction Increased innovation Enhanced collaboration 	<ul style="list-style-type: none"> Effective leadership Customer-centricity Team empowerment Continuous learning Flexibility and willingness to accept change

Canvas analysis of Agile transformation success for MakeMyTrip is presented in Table 4.3. MakeMyTrip, a leading travel company, faces challenges, such as intense industry competition, legacy system agility limitations, resource allocation issues, and the need for a culture change. Threats include cybersecurity, legislation, economic changes, and competition while opportunities include technological developments and industrial expansion. To maintain its competitive edge, MakeMyTrip must embrace agility, modernize outdated technologies, intelligently manage resources, and provide staff training.

The travel sector is highly competitive, making it essential for MakeMyTrip to innovate swiftly. Traditional product development methods can be cumbersome and slow, and customer expectations demand a seamless and customized experience. Agile's success relies on effective cross-functional team cooperation, which can be challenging to establish.

To address these issues, MakeMyTrip adopted Agile methodologies, like Scrum or Kanban, organized cross-functional teams, and incorporated customer feedback into the development process. Iterative development enabled ongoing revisions based on user feedback, and continuous testing identified and addressed issues early in the development cycle.

Results include faster time-to-market, improved customer satisfaction, increased innovation, enhanced collaboration, and key success factors. Effective leadership, customer-centricity, team empowerment, continuous improvement, and flexibility are essential for success.

MakeMyTrip's success in the travel industry depends on its ability to adapt to market demands, embrace agility, modernize outdated technologies, manage resources effectively, and offer staff training.

TABLE 4.4

CASE STUDY 4 - WIPRO: AGILE TRANSFORMATION IN A TRADITIONAL ENVIRONMENT

Situations	Issues/Problems	Solutions	Results	Key Success Factors
Wipro, a leading IT services company, embarked on an Agile transformation journey due to its strong reputation, knowledgeable employees, and global presence.	<ul style="list-style-type: none"> Resistance to change Cultural resistance Hierarchical structure Skill gaps Client expectations 	<ul style="list-style-type: none"> A detailed change management plan Offered training and skill development opportunities Designated internal change agents Hired Agile coaches Flattened the hierarchy Worked on client education Small-scale pilot projects Created continuous feedback channel 	<ul style="list-style-type: none"> Cultural shift Increased efficiency Improved customer satisfaction Achieved competitive edge Enhanced innovation 	<ul style="list-style-type: none"> Strong leadership commitment Employee engagement Effective training Well-planned change management Client collaboration

Canvas analysis of Agile transformation success for Wipro is summarized in Table 4.4. Wipro is a leading IT services company that embarked on an Agile transformation journey due to its strong reputation, knowledgeable employees, and global presence. However, the company faced challenges, such as cultural resistance, a hierarchical structure, skill gaps, and customer expectations. To overcome these issues, a detailed change management plan was necessary.

Wipro offered training and skill development opportunities, designated internal change agents, hired Agile coaches, and flattened the hierarchy to promote cross-functional cooperation. Client education about Agile development's advantages and requirements was also crucial. Agile small-scale pilot projects were a good starting point for success and inspiration. Continuous feedback was created to monitor progress and make necessary corrections.

The results showed a cultural shift, increased efficiency, customer satisfaction, a competitive edge, and innovation. Key success factors include strong leadership commitment, employee engagement, effective training, well-planned change management, and client collaboration.

Cultural resistance, customer churn, and future market upheavals were some of the challenges faced by Wipro in adopting Agile approaches. Other challenges included rivalry from natively Agile organizations, and potential market upheavals due to rapid technical advancements. The company's strong reputation, skilled employees, and global presence provided a solid foundation for its transition. By leveraging its strengths while addressing its weaknesses, Wipro can successfully navigate the evolving IT ecosystem.

TABLE 4.5

CASE STUDY 5 - FLIPKART: AGILE IN E-COMMERCE

Situations	Issues/Problems	Solutions	Results	Key Success Factors
Flipkart, a major player in the Indian e-commerce market, can diversify into other product categories, customize marketing using data analytics, and potentially expand internationally. However, it faces threats, such as increased regulatory scrutiny, pricing competition, shifting customer tastes, and supply chain disruptions.	<ul style="list-style-type: none"> Market competition Supply chain challenges in rural areas Constant innovation Client acquisition costs Regulatory environment 	<ul style="list-style-type: none"> Adopted Agile development Invested in supply chain optimization Focused on customer-centric innovation Created a robust e-commerce ecosystem Adaptation of evolving legal regulations 	<ul style="list-style-type: none"> Competitive edge Improved delivery Increased customer loyalty Expansion of the e-commerce ecosystem 	<ul style="list-style-type: none"> Agility Customer-centricity Supply chain efficiency Innovation Adoption of changing market conditions and regulatory changes

Canvas analysis of Agile transformation success for Flipkart is presented in Table 4.5. Flipkart, a major player in the Indian e-commerce market, faces fierce competition from Amazon, challenging delivery conditions in rural areas, constant innovation, and high client acquisition costs. Despite these challenges, Flipkart can diversify into other product categories, customize marketing using data analytics, and potentially expand internationally. However, it faces threats, such as increased regulatory scrutiny, pricing competition, shifting customer tastes, and supply chain disruptions.

To overcome these challenges, Flipkart has adopted Agile development, invested in supply chain optimization, and focused on customer-centric innovation. It has also collaborated with sellers and vendors to create a robust e-commerce ecosystem. Adaptation to regulations has been a key success factor, resulting in a competitive edge, improved delivery, increased customer loyalty, and ecosystem growth. Key success factors include agility, customer-centricity, supply chain efficiency, innovation, and the ability to adapt to changing market conditions and regulatory changes.

By focusing on customer needs and expectations, enhancing logistics and supply chain processes, and focusing on customer-centric innovation, Flipkart has been able to maintain its competitive edge and thrive in the Indian market.

TABLE 4.6**CASE STUDY 6 - MINDTREE: AGILE FOR SOFTWARE DEVELOPMENT**

Situations	Issues/Problems	Solutions	Results	Key Success Factors
Mindtree, a global software company, has a strong Agile culture that values teamwork, adaptability, and customer focus. Mindtree has successfully navigated the challenges of the expanding software sector and the increasing demand for services focused on Agile digital transformation.	<ul style="list-style-type: none"> Inconsistent Agile implementation Resource allocation High client expectations Lesser scalability 	<ul style="list-style-type: none"> Implemented a standardized Agile framework Prioritized resource management Participative client collaboration Scalability planning 	<ul style="list-style-type: none"> Consistent Agile implementation Efficient resource allocation Increased client satisfaction Achieved scalability 	<ul style="list-style-type: none"> Strong leadership support Continuous training and education Client engagement Effective resource management Implementation of a scalable approach

Canvas analysis of Agile transformation success for Mindtree is summarized in Table 4.6. Mindtree, a global software company, has a strong Agile culture that values teamwork, adaptability, and customer focus. However, the company needs help in maintaining consistent Agile practices across multiple teams and locations, resource allocation, meeting client expectations, and ensuring scalability. To address these issues, Mindtree implemented a standardized Agile framework, such as Scrum or Kanban, and provided training to all teams.

Resource management was also improved to balance workloads, prioritize jobs, and reduce bottlenecks. Client collaboration was enhanced through participation in the development process, including sprint reviews and feedback sessions. A scalable plan was created, including the creation of Agile Centers of Excellence (CoEs).

Results showed consistent Agile implementation, efficient resource allocation, and increased client satisfaction. The company achieved scalability by efficiently managing expansion and maintaining agility while growing its clientele. Key success factors include strong leadership support, ongoing training and education, client engagement, effective resource management, and a scalable approach that allows for expansion while maintaining agility.

By addressing these challenges, Mindtree has successfully navigated the challenges of the expanding software sector and the increasing demand for services focused on Agile digital transformation.

Discussion

Collectively, these case studies highlight the significance of Agile transformation as a strategic solution to the problems presented by a constantly changing global context. These companies showed that adopting Agile approaches can boost innovation, increase client satisfaction, and provide them a competitive edge in fast-moving markets, whether in IT or tourism. The companies recognized the importance of cultivating cultures of agility and innovation, adapting to shifting paradigms, and ultimately providing their clients with more value. A summary of the main topics from these case studies are as following:

- Industry dynamics and transformation imperative** - The organization recognized that Agile transformation was crucial for staying competitive amid increased competition, growing client demands, and the advent of the digital era (TCS). In order to remain relevant and outperform the

competition in project delivery and customer satisfaction, the company reacted to shifting industry paradigms by promoting agility and innovation (Infosys). To improve responsiveness to client requests and preserve a competitive edge in the fast-paced travel business, Agile transformation in product development was judged vital (MakeMyTrip)

- **Global context and competitive landscape** - Operating in a fiercely competitive global IT market, TCS strategically used Agile transformation to succeed at delivering software and solutions. In order to stay ahead in a fiercely competitive industry and keep up with changing customer needs and technology breakthroughs, the global leader in IT services adopted Agile at scale (Infosys)
- **Cultural shift and innovation** - Adopting an agile mindset enabled companies like TCS to overcome the challenges of the digital era and embracing a culture transformation to encourage innovation and collaboration. A cultural transformation of innovation and adaptability showcased how a large organization can change to meet the demands of the contemporary IT ecosystem (Infosys)
- **Responsiveness to customer needs** - A key component in the competitive travel business, Agile product development improved responsiveness to consumer requests (MakeMyTrip). By adopting Agile approaches, companies demonstrated a commitment to innovation and enhancing client satisfaction through improved software development procedures
- **Transformation in traditional environments** - A case study demonstrated the effective implementation of Agile approaches to maintain competitiveness in a fast-changing sector for firms steeped in conventional processes (Wipro). By successfully adopting Agile in a conventional setting, a company can establish itself as a client-centered participant in the IT services sector (Mindtree)
- **Strategies, obstacles, and outcomes** - In-depth exploration of tactics, challenges, and outcomes of Agile transformation provided valuable lessons for companies undergoing similar transitions (Wipro). The successful adoption of Agile transformed software development procedures can position companies to be competitive and client-centered company (Mindtree)

Policy Implications and Recommendations for Enhancing Streamlined Agile Operations in India

Based on the analysis of case studies as well as the review of relevant literature, the policy implications and recommendation are drawn as below.

Organizational Measures

- **Promote Agile training and skill development** - To address skill shortages and to ensure staff are prepared to operate in Agile settings, organizations in India should invest in Agile training programs. This can be accomplished through internal training programs or collaborations with educational institutions (TCS case analysis)
- **Establish Agile Centers of Excellence (CoEs)** - Encourage enterprises to create Agile CoEs within their structures. These facilities can serve as hubs for sharing Agile best practices, information, and skills with teams across the organization (Infosys case analysis)
- **Emphasize change management** - When switching to Agile methodologies, organizations should put a high priority on change management strategies. This involves communication, training, and leadership support to help staff embrace Agile concepts and practices (Wipro case analysis)
- **Encourage collaboration with clients** - Businesses should actively involve customers in the development process. In addition to improving client-provider relationships, this cooperation helps to ensure alignment of client expectations with Agile methods (MakeMyTrip case analysis)

- **Resource allocation optimization** - Businesses should focus on optimizing resource allocation methods to balance workloads, prioritize jobs, and reduce bottlenecks for effective Agile software development (Infosys case analysis)

Government Policies

- **Tax incentives for Agile adoption** - To aid with the cost of change, offer financial incentives to companies who invest in Agile methodologies and training (policy recommendation)
- **Agile certification and accreditation** - Establish a certification program for Agile practitioners and organizations to verify proficiency and advance best practices (policy recommendation)
- **Support for Agile research and development (R&D)** - To promote innovation in Agile technologies and methodologies, encourage government financing for R&D in Agile (policy recommendation)
- **Collaboration with industry bodies** - Encourage cooperation between government agencies and business organizations to create Agile frameworks and best practices that are industry-specific (policy recommendation)

Data Protection and Security

- **Agile data security standards** - Implement data security and protection regulations that are specific to Agile development methods. Within Agile teams and processes, these standards should cover data protection, access control, and encryption (policy recommendation)
- **Secure collaboration tools** - Encourage the adoption of safe, collaborative Agile tools that comply with privacy laws. While maintaining data security, these technologies should promote communication and information exchange (policy recommendation)
- **Data privacy training** - Demand that businesses teach Agile teams and staff on data privacy. Best practices for data protection, regulatory compliance, and the careful management of sensitive information should be included in this training (policy recommendation)
- **Data audits and compliance checks** - Implement regular data audits and compliance checks to make sure Agile teams follow the rules on data security and protection. Corrective measures ought to be taken in response to noncompliance (policy recommendation)
- **Incident response plans** - Encourage businesses to create and regularly update incident response strategies that are tailored to Agile development. These strategies have to specify how to handle security or data breach situations (policy recommendation)

Conclusion

In summary, India's progression toward Agile project management is characterized by notable prospects and considerable obstacles. In order to facilitate the effective integration of Agile processes, it is crucial to establish a comprehensive policy framework that adeptly tackles the associated obstacles while concurrently fosters the fundamental values and principles that underlie Agile.

The significance of cultural alignment becomes evident in the success of Agile practices in India. Policymakers assume a pivotal role in stimulating and facilitating the cultural shift of organizations toward Agile methodologies, fostering the development of more competitive, inventive, and adaptable firms within the nation.

The implementation of Agile working practices in India is vital for sustaining global competitiveness, notwithstanding its complexity. The policies and solutions advocated in this discussion can provide valuable guidance for addressing these difficulties and fostering a workforce that is both adaptable and creative, leading to increased productivity.

Ensuring the preservation of sensitive information and compliance with rigorous regulatory standards are fundamental principles that must be upheld by Agile practices in India, hence emphasizing the utmost significance of data protection and security.

Recommendations for Future Research and Analysis

- **Impact of government policies on Agile adoption** - The precise influence of governmental incentives and laws on the adoption of Agile methodologies in Indian IT enterprises may be studied through research. This could include grants, tax breaks, or regulatory assistance. Discuss how initiatives, like "Make in India", have impacted Agile adoption in Indian IT businesses
- **Agile and data protection compliance** - Future study might examine how Agile techniques comply with data protection laws in India, such as the Personal Data Protection Bill, given the significance of data protection and privacy. Also examine how Agile concepts fit with India's data protection rules and the difficulties encountered
- **Agile CoEs in India** - Examine how well Agile CoEs are operating in Indian enterprises. Analyze their contribution to advancing Agile principles and establishing uniform implementations. Examine the use of Agile CoEs by Indian firms and the effects they have on the Agile transformation
- **Client education and expectations** - Further investigation on the function of client education in Agile projects in India is possible. Examine the impact that Agile client education has on project success and client satisfaction. Discover case studies of Indian IT companies using Agile methodologies to clients
- **Agile skill development** - Examine the success of Agile training and skill-development initiatives in Indian businesses. Analyze how these programs fill in skill shortages and aid in the implementation of Agile. Examine how Agile training programs have affected the IT workforce in Indian firms
- **Agile transformation in non-IT sectors** - Expand investigation into India's Agile transition outside the IT industry. Examine the ways in which the ideas of Agile may be used in industries, like manufacturing, healthcare, or education. Review case studies of Indian non-IT enterprises that have embraced Agile techniques
- **Agile and start-ups in India** - Look at how Agile methodologies are being used in Indian start-ups. Examine how the Agile principles help new businesses flourish in India's thriving entrepreneurial environment. Examine the adoption of Agile principles by Indian start-ups and the effect they have on innovation
- **Cultural adaptation in Agile transformation** - The cultural adjustments necessary for Agile transformations in Indian firms might be the subject of research. Examine how cultural influences affect the adoption of Agile and its successes or difficulties. Discuss how cultural change affects Agile transformations in Indian companies
- **Agile framework preferences** - Look at the demand for particular Agile frameworks in India across a range of sectors and organization sizes (e.g., Scrum, Kanban, SAFe). Examine the variables influencing these preferences. Research the ways in which Agile frameworks are used in Indian businesses
- **Agile in government and public sector** - Examine how Agile methodologies are being used in India's public and government initiatives. Analyze the effect on citizen services, transparency, and project delivery. Examine case studies of Agile adoption in projects run by the Indian government

CHAPTER 5 : MALAYSIA

GOING AGILE WITH CONSTRUCTION PERMITS IN KULIM

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Abstract

Adopting Agile regulations becomes necessary to promote productivity in the disruptive environment. The development of digital technology and lifestyle changes impact work processes in various sectors worldwide. The public sector also faces the challenge of increasing capacity to cope with the demands of customers who insist on speed, accuracy, and agility. Reliance on bureaucratic methods is likely to put the business ecosystem at a disadvantage. The emergence of the COVID-19 pandemic has opened a new chapter in the work process and regulatory enforcement framework. The case study conducted in Kulim, Malaysia shows that Agile regulation has a significant impact on the efficiency of the public sector to increase productivity. This effect is not only on industry players but also increases the productivity of public agencies.

Introduction

Malaysia aims to achieve developed nation status by 2025 with the overarching theme of prosperity, inclusivity, and sustainability. Therefore, a comprehensive productivity framework should be prepared to deal with global economic and political turmoil, such as the Russia-Ukraine war and the global economic downturn as well as the postpandemic challenges of COVID-19. Thus Malaysia Productivity Corporation (MPC) promotes productivity growth by focusing on three key drivers, namely talent, technology, and regulation. MPC is a central agency that drives productivity and competitiveness improvement holistically at national, sectoral, and enterprise levels in Malaysia.

The emergence of COVID-19 starting in December 2019 opened up a new perspective on bureaucratic theory as some of its key elements were challenged due to the movement controls enforced around the world. Among the most affected were the elements of work processes, which must be governed by a fixed system of rules and guidelines. The need for compliance with the rules became a "bottleneck" to some work processes due to limited mobility and there were various obstacles to comply with the rules. This situation required this element to be swiftly adjusted to prevent the country's productivity from being stunted, leading to an Agile approach to enable productivity to continue to grow.

Forming a sustainable business climate to attract businesses and investments by providing a quality regulatory ecosystem can boost Malaysia's ranking in ease of doing business. Therefore, Agile business regulations and effective bureaucracy become necessary to support robust national productivity and competitiveness. Malaysia ranked 27 out of 64 countries in ease of doing business in 2023. Although this position is considerably good, efforts to increase efficiency in facilitating business, especially construction permits, need to be improved.

Focus and Scope of Case Analysis

This study focuses on the causes and approaches taken to overcome the delay in the commencement of industrial building construction works in Malaysia. A case study was conducted in Kulim, one of the 12 districts in the state of Kedah, Malaysia, to understand how Agile regulation contributes to boost productivity in the country.

Productivity in the Kulim district is dependent on the influx of domestic and foreign investors as this district is slated as a high technology industry hub in Malaysia. Kulim's productivity was affected when the influx of investors into the district contracted. As a local planning authority, Kulim Municipal Council (also known as MPKK) is the local authority that approves development planning applications in the district. MPKK has taken adaptive measures to encourage productivity to continue to grow by adopting outcomes-focused regulation (OFR) approach. This initiative is a realignment of the development approval process using the Agile approach in approving construction permits. The authority of MPKK operates under three main laws, namely the Local Government Act 1976 (Act 171), Town and Country Planning Act 1976 (Act 172), and Street, Drainage and Building Act 1974 (Act 133).

There are two main sections in this study. First, Case Analysis Through the Canvas. This section discusses the situation that causes the delay in starting construction in Kulim as well as the issues/problems that arise. This section further discusses the solutions used as well as the results and key success factors that contribute to it. Second, Discussion and Policy Recommendation. This section discusses how the OFR approach used has impacted the Agile working style planning, the change in values among local authority staff as well as how to meet the challenges and strategies used. Data presented in this study are derived from 2019–22.

Literature Review

Why Agile Working Style is Important

Discussions about Agile working style (AWS) have been ongoing in the business world since the mid-20th century. This approach continues to evolve as the world faces the development of disruptive technology. The emergence of digital technology that dominates some human functions has presented new challenges to various work processes, either in the manufacturing industry or the management systems themselves. Organizations are grappling with the need to act quickly, efficiently, and effectively to keep their businesses competitive [1]. Thus, AWS provides an avenue for organizations to raise productivity through increased revenue and growth in the business. This includes the organization's ability to change business routines, ways of working style, adapting more efficient and effective work processes, and exploring new markets [2].

The public sector also experiences similar pressure. The bureaucratic methods practiced in the public sector began to be challenged by the development of technologies capable of solving problems and processing government functions faster. However, this new approach is often plagued by the difficulties of the public sector to depart from the bureaucratic approach that has taken root in government administrations. Public agencies are still hesitant and worried about escaping the clutches of the bureaucratic processes because it is considered to deviate from public management procedures. Things get tougher when the external business environment demands speed, agility, and dynamism, yet public administrators spend most of their energy following strict and rigid policies and regulations. They also have to comply with various layers of procedures in processing the approval of an application. This slows down the work process and affects the planning of the business community [3].

The emergence of COVID-19 truly challenged the status quo of public bureaucracy. The movement controls, which were fully enforced at the end of the first quarter 2020 until early 2021, crippled the operations of public agencies. This also had a serious impact on business activities around the world. The most significant impact of this movement control was on foreign and local investment activities in various countries. Movement control in each country crippled multicomponent manufacturing

operations because workers were unable to go to the plant to produce products. Therefore, it hindered various other downstream operations.

Agile Regulation

In response to the situation, the awareness of the need to leverage technology and introduce Agile regulation began to receive serious attention from various parties, including the public sector. There are various definitions of concepts that explain Agile regulation. However, the closest definition to this study is "a framework for designing regulations to be flexible and adaptable to a dynamic market and the speed of world change and promising effective regulatory processes for future production of goods and services" [4]. There are at least three main features of Agile regulation, namely stringent, flexible, and predictable [5].

As a regulatory authority, MPKK falls under the public sector which is part of the economic system, the main driver of the socioeconomic development of the country. Regulations include various laws, official and informal instructions, bylaws, and various circulars issued by official and unofficial government bodies. Strictly enforcing the rules can affect socioeconomic development. Thus taking an agile and flexible approach is a strategic step toward creating a win-win situation in the implementation of regulations. The World Economic Forum [6] recommends seven approaches to ensure that the regulations enacted can be a catalyst for productivity and at the same time ensure public well-being. They are: (i) anticipatory regulation; (ii) outcomes-focused regulation; (iii) experimental regulation; (iv) data-driven regulation; (v) self and co-regulation; (vi) join-up regulation; and (vii) international regulatory cooperation.

Outcomes-focused Regulation (OFR)

While the debate on the concept and approach of Agile regulation is still vibrant in the world of academia and practitioners, the focus of this chapter is to discuss how Agile regulation impacts on local productivity. This study adopted the OFR approach as a framework for discussion. OFR helps regulators make decisions by making reasonable judgements of what regulations want to achieve and how to achieve them. It involves a focus on the achievement of "real-world" outcomes for citizens and the environment. As such, increasing flexibility for business on the ways they can achieve these outcomes and enabling them to find the most efficient way to comply and reduce costs for consumers [7]. This approach will open the door to make regulation more flexible [8].

OFR hinges on regulators' ability to exercise sound judgements when implementing regulations [9]. This entails a deep comprehension of rule objectives and an awareness of potential ramifications of regulatory enforcement actions. Evaluating the effect involves assessing the project's impact upon successful implementation or failure. Ultimately, the goal is to ensure that investors receive services tailored to their needs. OFR extends beyond viewing rules as rigid boundaries; it facilitates investors' decision-making by presenting suitable options to consider [10].

Why Construction Permit Matters

A construction permit is a permission granted by the local authority to the landlord to build a building on the land he owns. Permission from the local authority is required to ensure that the building built with the relevant laws enforced in a local authority, including to be safe and suitable to be occupied. Malaysia enforces building laws known as Street, Drainage and Building Act 1974 (Act 133). Section 70 Act 133 states "No person shall erect any building without prior written permission of local authority". A construction permit is issued to Principal Submitting Person (PSP), a competent person who submits a building plan approval application to the local authority. A PSP may be an architect or engineer.

To enable effective control over construction activities in Malaysia, a specific bylaw was passed, known as Uniform Building By-Laws (1982). These bylaws were enacted to create uniformity in the approval of construction permits in every local authority in Malaysia. Since the authority to issue construction permits lies with the local authorities, each local authority has its own bylaws to suit its

local needs. Different definitions lead to inconsistency in processing development permit approvals. This also adds to the risk of delays in the process [11].

Delays in starting construction will also expose industrial building development projects to other delays. This is due to the project management of the building construction process being vulnerable to weather issues, the supply of building materials, construction labor, the spread of diseases, among others. Throughout the construction process, the investor faces the above risks. Should such situation occur, the construction process will be dragged longer and cause further delays to the production process. The entire established business plan may be affected.

An Agile approach in enforcing construction-related regulations is to ensure that development projects can be implemented within the stipulated period. This will reenergize economic activities that have been stunted by movement control order.

Kulim's Process for Construction Permit

The process of development order in the Kulim district begins with the submission of planning permission application to the Kulim Municipal Council (MPKK) through its One Stop Centre Unit (OSC). OSC is a local unit that is the secretariat to process all applications to build buildings in the area. The planning permission application is submitted together with a plan that shows the layout plan of the respective area. Based on normal practice, the OSC will refer the application to 15 technical agencies at the district level who will review the layout plan to ensure that it complies with the regulations enforced in their respective agencies. They have 14 days to respond to the application. Normally technical agencies will impose the conditions as specified in the respective regulations and the applicant is required to comply with the requirements before they are escalated to the OSC Committee. The OSC committee will meet twice every month. The committee is made up of the technical agencies involved in reviewing the layout plan submitted. Finally, the committee will grant conditional approval that requires the applicant to comply with any imposed additional requirements .

Applicants are given 14 days to comply with the requirements. In many instances, the applicant will take longer if the conditions imposed involved various other parties, such as having to make land acquisition to build a drainage system from the project site to a river.

Once the layout plan is approved, the applicant is allowed to submit earthworks plan, and road and drainage plan. The process of referring to technical agencies is repeated and each agency has another 14 days to provide a review. Once both plans are approved, the applicant is allowed to submit a building plan and again the process of referring to the relevant agency is done. The whole process takes between 10–24 months before the commencement of the construction process.

Case Analysis

Situation

The COVID-19 pandemic that hit the world in 2020 has had a significant impact on the industrial sector around the world. Movement control order limited manufacturing activities to the detriment of the supply chain of various products. To meet the expectation of increased demand for various upstream products, players in the manufacturing sector took steps to expand their operations around the world.

The expectation of increased demand for various key components of production, especially semiconductor, also increased the pressure on the producers to hasten production as required by customers. However, the process of factory construction and product production depends on various regulations enforced by the country in which the company does business.

Issues and Problems

The construction of a factory for industrial purposes in Kulim requires an investor to go through three main processes. The first is to apply for a development order from MPKK. This application must be

accompanied by a planning permission plan, earthworks plan, road and drainage plan as well as a building plan. The second is to obtain the Certificate of Completion and Compliance (CCC) to certify that the building is completed and safe to occupy. The CCC is issued by the PSP after collecting completion form (Form G) from various technical agencies indicating that these agencies are satisfied with compliance with the requirements set. Form G is deposited into the OSC and certified by the local authority for the PSP to issue a CCC. The third is to obtain a composite license that allows the company to carry out its operations. The composite license is issued by MPKK based on the space used in the factory building.

The approval process for each of the three stages takes between 10 to 24 months before the production activities begin. This is due to the approvals being given sequentially to each other. The delay in approving each application is due to the practice of requiring each development plan to be approved in advance before the next plan can be submitted. This situation leads to a delay in entering the site and starting the construction process.

On the other hand, investors need a short time and a flexible approach to enable the plant construction process and production activities to be carried out within a stipulated time frame. Pressure on regulatory compliance and time periods often provokes an inharmonious relationship between investors and regulators. If this situation continues, local productivity growth could be affected and negatively affect the local development as well. Therefore, the OFR is the best approach that can contribute to the success of all parties.

The win-win approach is to take the middle ground in regulatory enforcement. As such, regulators need wisdom, not only authority, in ensuring that regulations can be successfully implemented. It may be difficult to define the meaning of wisdom in a complete manner, but some variables may be useful if regulators can understand the environment for such situation. Among the variables that may require attention are: (i) the situational characteristics of a community; (ii) how the structure of an individual, society, and a firm is formed; (iii) the form of motivation required; and (iv) the possibility that there are obstacles that affect compliance [12].

It is important that all MPKK staff understand these variables as the rules are not enacted for the interests of every individual in society. It is general in nature and enacted for the interests of the majority. Therefore, during the regulatory implementation process there will be a gap between the enforcement of the rules and the interests of individuals (whether private persons or firms) that require adjustments to compliance with such regulations. The position of this gap is illustrated in Figure 5.1.

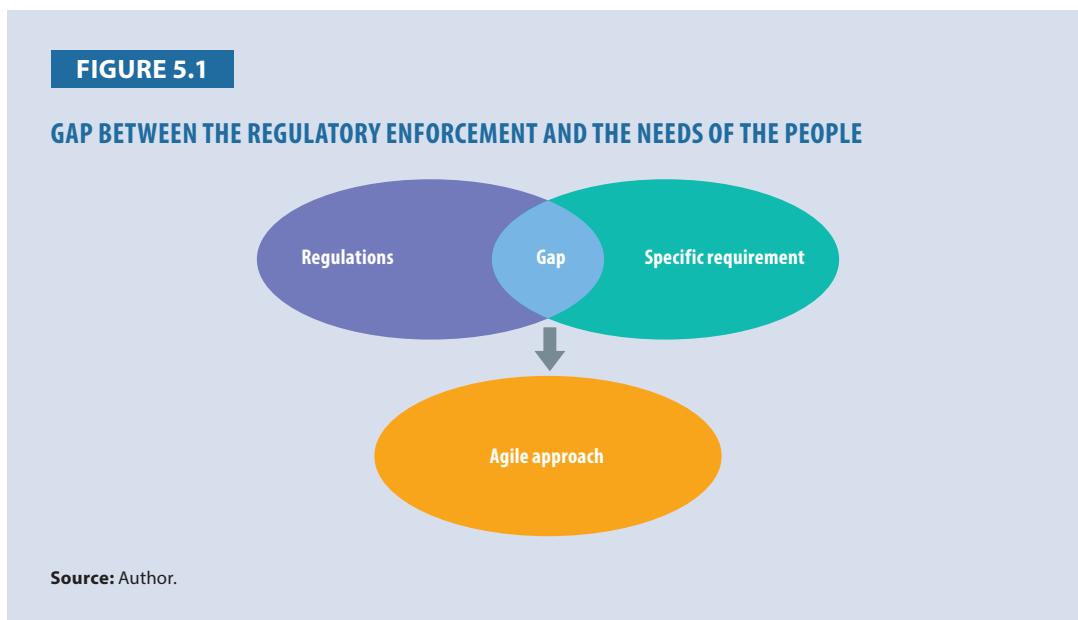


Figure 5.1 shows the gap that exists between the regulatory enforcement authorities and the specific requirements for the productivity of the relevant individuals or companies. In this regard, the regulator plays an important role in meeting the needs of the client and, at the same time, the needs of the regulations.

In Malaysia, the government encourages regulators to identify strategies in developing regulations that are comprehensive, up-to-date, and in line with the current business environment. Local authorities also need to ensure that domestic business/trade regulations cover international business needs, advances in knowledge and technology, including Industrial Revolution 4.0. Therefore, a win-win approach is considered a strategic way to ensure that the gap between the needs of regulatory enforcement and the expectations of the industry or society can be met harmoniously.

Recognizing the need for this adaptation, the OECD, a global cooperation body aimed at enhancing economic management productivity and efficiency, introduced the principles of good regulation in 1995. These principles have evolved through a variety of approaches. Among the most popular and accepted in most countries in the world, especially in Southeast Asia is the "good regulatory practice" (GRP) approach. No single method has been introduced to determine how GRP should be implemented. Yet the OECD recommends some common approaches. Among them are: (i) reviewing the existing regulations to ensure that they are still relevant to the current requirements; and (ii) adopting the Regulatory Impact Analysis (RIA) approach, if necessary, to make changes to the relevant regulations.

Although the rules are still relevant to the current requirements, enforcement of the rules sparks public pushback, often influenced by various factors. One common complaint is that there is a gap between the needs of the public and the strict compliance requirements of the rules. In the context of obtaining a construction permit, investors usually need between 10 to 24 months to enable them to start construction work. This puts pressure on them as the delay in starting the factory construction works can affect their business planning schedule and risk of financial loss if they are unable to supply their production commitments to customers as promised.

Solution

In a case study, MPKK took a win-win approach in approving construction permits for investors who were doing their business in the Kulim district. The approach, known as the Express Construction Permit (ECP), creates an effective interaction between investors and MPKK to enable the production of industrial products to be started within the timeline that had been mutually agreed by both parties. This means that both sides need to understand the needs of each other. Investors need to understand the need to comply with the regulations and how effective compliance processes can enable production operations to start within the stipulated period. MPKK, on the other hand, needs to understand the need for investors to start their production operations as soon as possible. This approach is one of the methods to ensure that the enforcement of regulations does not fail [12].

ECP focuses on the effectiveness of interaction between the government and the business community to ensure that business can be conducted within the stipulated time frame without delay. It also ensures the main actors, the business community, and the government understand the needs of each other. Therefore, ECP is defined as "effective interaction between the government and the business community to enable business activities to be carried out within a mutually agreed period without delay."

In this context, MPKK as a local planning authority should play the role as a facilitator to help investors run their business within the stipulated period. The role of MPKK as a business facilitator is illustrated in Figure 5.2.

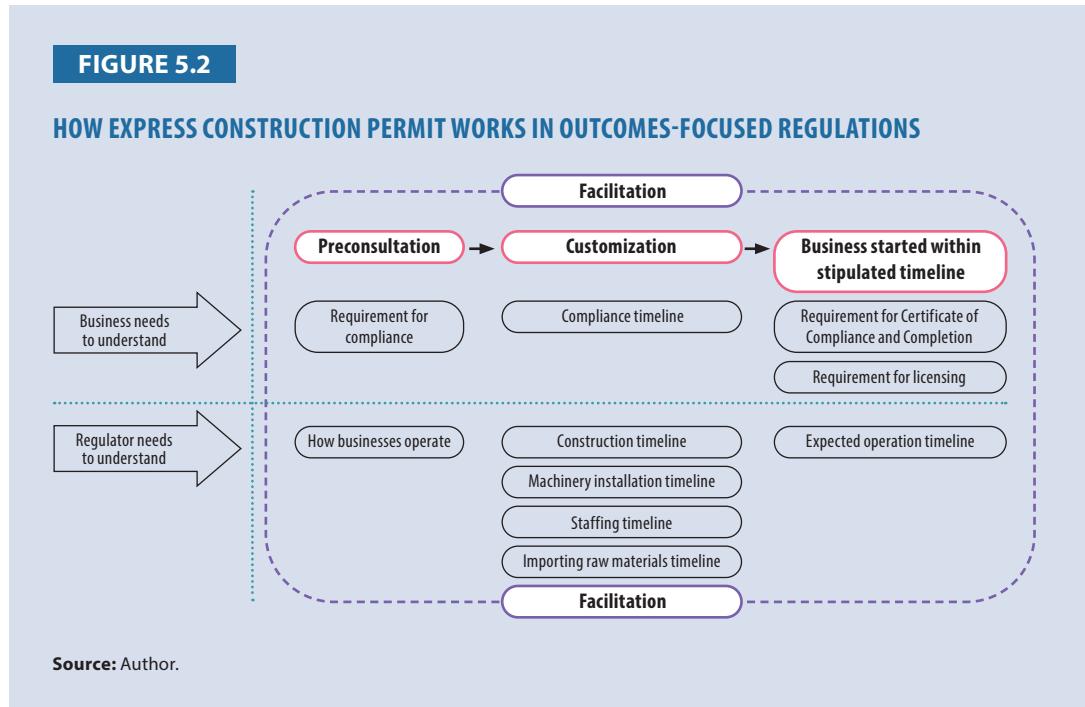


Figure 5.2 shows that there are three approaches used in the OFR framework model, involving consultation, customization, and facilitation. The main goal of this approach is to ensure that the business can be started according to the plan set by the business community.

i) Preconsultation

The first approach is to set up a preconsultation meeting with the investor. This enables the investor to understand the need to comply with the regulations, and vice versa, allows the government to understand the business processes. This consultation process enables MPKK to make a reasonable assessment (reasonable judgement) of the proposed project. It also enables MPKK to explain the objective (understanding the objectives of the regulation) of each regulation involved to investors so that they understand the objectives of each rule enforced.

This facilitates the business community in understanding the need to comply with the regulations and the government to understand the business processes to be implemented. Each business has its own processes and is different from one another. The preconsultation process requires investors to present their development approval of their project which consists of a planning permission plan, earthworks plan, road and drain plan, building plan, and machine layout plan before the application is formally submitted to MPKK through the OSC Unit. OSC is an online development plan approval application system developed by the Ministry of Housing and Local Government and placed in the local authority. Through this system, each development plan application will be received and subsequently sent to respective technical agencies for comment.

Each agency can comment in advance on the plans presented to ensure that each regulation, especially the basic rules enforced by the respective agencies, is complied with at the planning period. At this stage, consultants appointed by the project owner are required to make amendments if there are changes to the plans within 14 days. MPKK also provides views and options for investors to smoothen the approval process of development plans.

After most of the rules are complied with at the planning preparation stage, the concurrent submission of the development plans is made officially to MPKK through the OSC Unit. Once most of the rules have been met, PSPs are allowed to apply to enter the site for early commencement

of work, a day after the official application is made. This will save time on the initial construction works compared to the need to wait for the approval of each plan sequentially. As for now, there are no specific rules that prevent concurrent submission to local authorities and no rules stipulating each plan shall be submitted to the OSC sequentially. This opens the space for local authorities to facilitate investors to organize their plan approval applications according to their project implementation timeline. This also means that the project owner is allowed to start the initial works before final plan approval is granted.

It should be noted that permission to start the initial works is given as the responsibility of ensuring that the construction of the building structure to comply with the basic policies and regulatory requirements under the Uniform Building By-Laws (UBBL) falls within the purview of the PSP. The willingness of the PSP to take responsibility to supervise and verify the CCC at the end of construction is a prerequisite for the initial work authorization, which is also allowed under Section 13 of the Uniform Building By-Laws 1984.

Among the initial works involved are the clearing of the area, the preparation of the drainage system, the construction of retention ponds as well as the piling works. The question may be raised as to why piling works are allowed when the building plan has not been approved. Local authorities are not responsible for ensuring the construction of buildings is in accordance with the technical plans. The main functions of the local authority are to ensure that: (i) the building is built on a permitted lot; (ii) the development policies are complied with; (iii) the displacement of the building within the allowable distance; (iv) the height of the building in accordance with the established policy; (v) the basic fire requirements are complied with; (iv) the exit is determined properly; and (vii) the drainage system is in accordance with the permitted regulations.

The task of ensuring that the construction on-site is carried out in accordance with the plan falls on the shoulders of the PSP. If the PSP is willing to take on the responsibility through the application letter to enter the site for initial works, MPKK is of the opinion that there is no need for it to delay the authorization.

While construction is underway, development plans are processed by the OSC to comply with the conditional approvals imposed by technical agencies. Conditional approval means that investors can proceed with construction and, at the same time, any amendments on plan are made to suit with on-site requirements, regulatory compliance, and preparing the latest plan drawings.

ii) **Customization**

The second approach is customization. Customization is a win-win approach that gives each party the space to put forward their respective timeline requirements. At the end of the preconsultation session, each party will formulate a timeline that is considered reasonable to both. This is to avoid any pressure on any party that could lead to losses. Failure to comply with this timeline not only harms investors for not getting returns, but also harms the government because the project does not contribute revenue through taxes nor provide employment opportunities. Customization of the construction period and starting the production is an important interaction between MPKK and investors.

At this stage, the consultant must submit the project implementation schedule to MPKK and to all technical agencies. This is to ensure that each agency can understand the time compliance requirements expected by PSP and project owners. Each project has its own schedule to meet the needs of the customers. Failure to comply with the timeline may affect the business planning set by the project owner. Therefore, the process of understanding the impact and consequences of any delays or successful completions allows investors and MPKK to honor mutually agreed time frame.

Consultants and project owners also need to understand the time constraints faced by regulatory agencies. Therefore, they need to ensure that the mutually agreed timeline is fully complied with.

Failure to comply with this timeline may affect the smoothness of the monitoring, inspection process and, subsequently, the approval to be issued by the regulatory agency.

Once the initial construction works commence, MPKK and investors will jointly monitor their needs. This process requires MPKK to monitor the progress of full approval of the plans by checking the approval status of the plans in each OSC meeting. This is to ensure that each development plan is fully approved when the PSP begins the process of collecting Form G to be deposited to OSC for the purpose of issuing CCC at the end of the construction process. Full approval is the approval of the drawing of development plans that have fulfilled the requirements on the site and compliance with the regulations.

iii) Facilitation

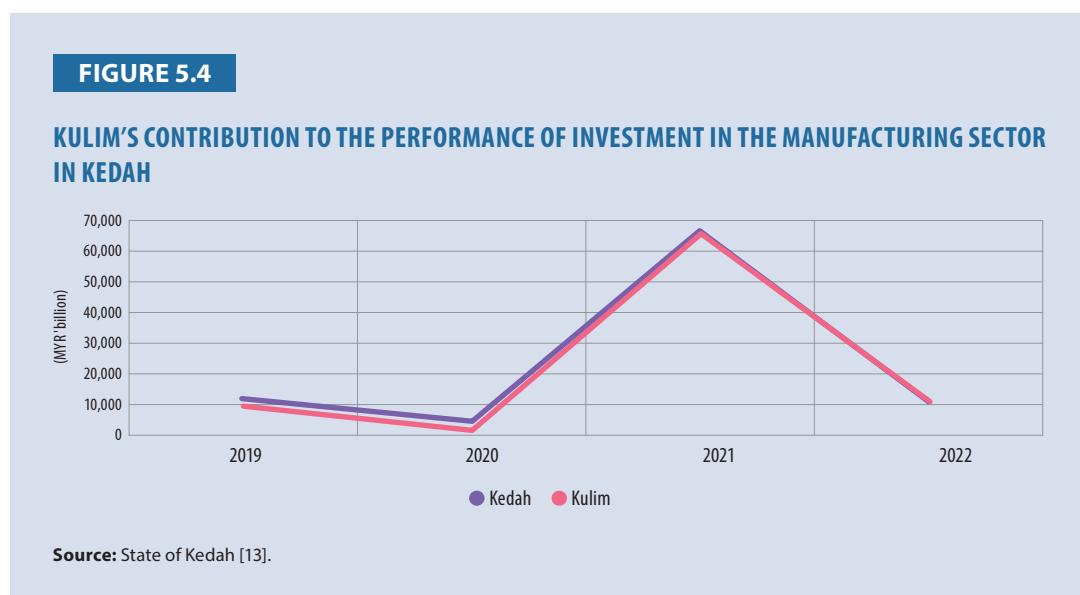
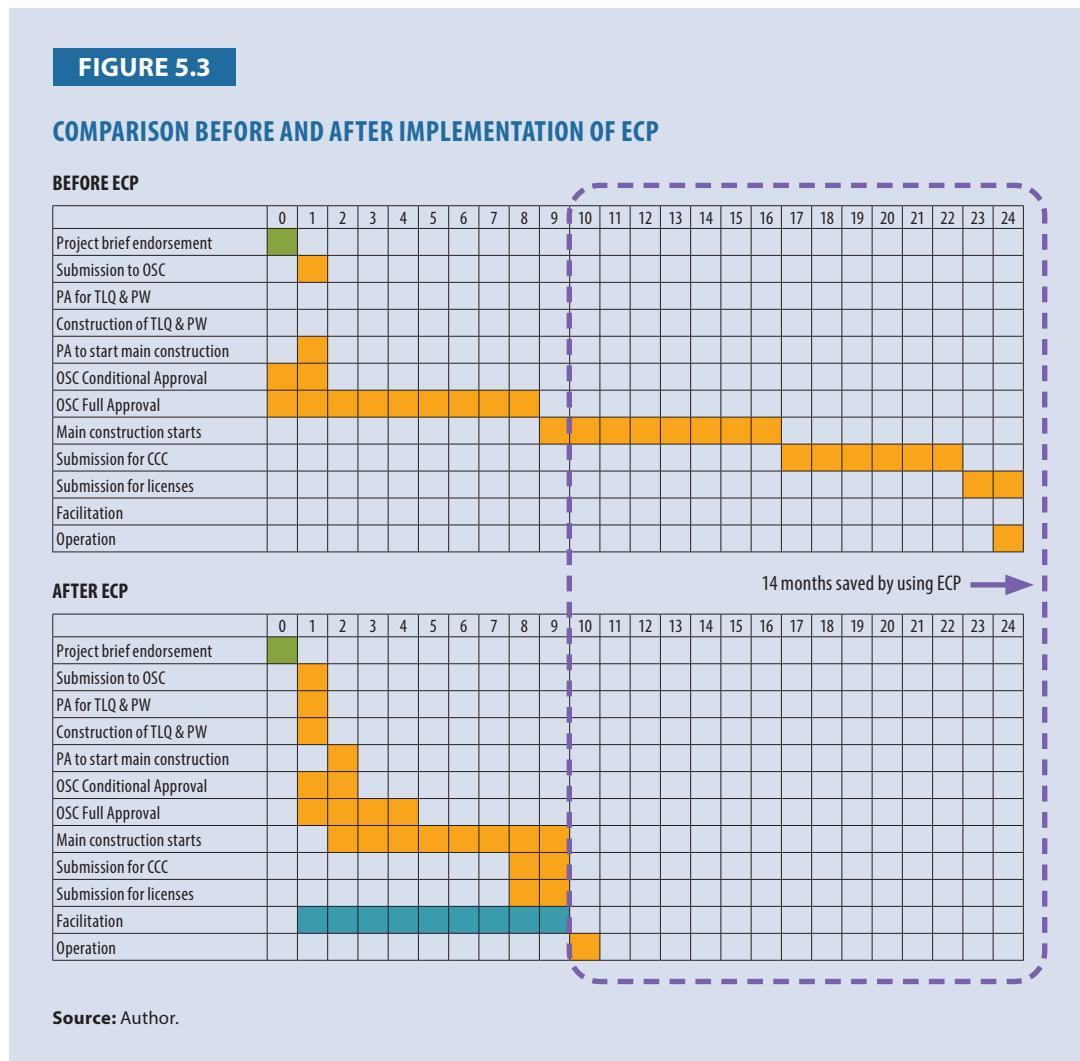
Even if all preparatory measures and setting of the implementation timeline have been mutually agreed, there is still no guarantee that the implementation process will proceed as planned. There is a possibility of various factors that could affect the planning and preliminary agreement. If there are issues arising during the construction period of the project, MPKK will play a role as a facilitator to find a solution. The role of facilitator does not mean that MPKK is able to solve all the problems that arise. If the issue arises within its jurisdiction, MPKK may make its own decision after negotiating with the relevant parties. However, if the issue is outside its jurisdiction, MPKK will assist investors in bringing it to the relevant parties.

Various reasons can affect the progress of a project. Thus MPKK will always be ready to offer facilitation services to investors to address arising issues throughout the construction process. Facilitation services include providing suitable options to investors as there may be issues that are beyond their ability to overcome. These issues may affect their business planning if not addressed. Therefore, the process of facilitating takes place throughout the business activities in Kulim. The facilitation service is expected to build trust among investors that Kulim is an investor-friendly investment destination and MPKK is able to provide good "after-sales service" to its customers.

Results

Case studies conducted at MPKK found some encouraging findings. This finding is an indication that the OFR approach is capable of producing results that can lead to increased productivity, not only to investors, but also to provide the same benefits to MPKK and the people of Kulim as a whole.

The most important finding in this case study is that investors can start construction activities within the stipulated period of 10 months from the date of submitting the development plan to MPKK through OSC. For instance, a glove manufacturing plant project with MYR280 million capital took seven months to build the factory building and took another two months to process the CCC approval. Meanwhile, a business permit can be issued within 24 hours of obtaining the CCC. Investors report they can save MYR27 million in compliance costs if the construction of the building takes only 15 months. These savings result from reduced labor costs, insurance, increased prices for building materials, rental of storage warehouses, and other costs. In fact, they expect a loss of MYR60 million every month if they fail to commence operations within the stipulated period. This time saving is shown in Figure 5.3.



MPKK can also benefit as it can increase revenue through assessment tax and business license earlier than expected. This can help MPKK generate additional income through short-term investments from the revenues obtained. In short, it enhances MPKK's ability to provide better city services to investors and surrounding areas. Apart from the surge of productivity in MPKK, the local economic development can grow through the increase of job opportunities. The success of ECP pilot project has gained the attention of various multinational companies to choose Kulim as their investment destination. Data derived from 2019–22 shows that Kulim is a leading district in Kedah to attract investment in the manufacturing sector, as shown in Figure 5.4.

Figure 5.4 shows that during the period 2019–22, total investment in Kulim was MYR88.3 billion, representing 97.7% of total investment of MYR93.2 billion in the state of Kedah's manufacturing sector.

This figure is a manifestation of high trust of various parties in the viability of the industrial area in Kulim as well as the quality of the government delivery system, especially the local authorities that practices OFR. In the context of local economic development, Kulim can offer 23,433 job opportunities within the same period. With this total workforce, Kulim is expected to generate local economic growth of MYR702 million per year. This expectation is made assuming that each employee earns an average income of MYR2,500 per month. They will spend those incomes to get living necessities, such as buying homes, vehicles, and daily provisions. Consequently, the demand for residential and business properties rises.

Key Success Factors

Transparent and Flexible Regulation

The success of ECP in Kulim district demonstrates the importance of implementing inclusive and collaborative elements in regulatory enforcement. This can be done by enacting transparent and flexible rules. Investors need clear rules and no hidden compliance costs. This can increase investors' trust in government governance at the local level. Confidence and trust are important prerequisites for attracting investment to the respective area. They can be formed through preconsultation with investors to understand their needs and MPKK explains the need to comply with the rules in a transparent manner. At this stage, investors can present any issues or problems they are facing and seek advice and views on how to address it.

Effective Interaction between Investors and MPKK

Apart from investors' trust and confidence in a transparent and flexible regulatory framework, the effectiveness of interaction between investors and officials in MPKK also enhances the competitiveness of Kulim district as a major investment destination in Malaysia. The effectiveness of interaction can be established and enhanced by adopting a synergistic approach, where both parties work together to find collaborative solutions without being confined to one-way communication. This fosters a sense of security and satisfaction among investors, knowing that regulators are responsive to their needs. As a result, inventors gain confidence in doing business in Kulim as they are assured that MPKK will provide assistance when needed.

Competent Officers and PSP

Merely having good interaction is insufficient for creating a robust business ecosystem. Competent regulators and PSPs play pivotal roles in building investors' trust and affirming their decision to choose Kulim as their business destination. This approach is implemented by MPKK by sharing preliminary data to consultants, enabling them to expedite development planning with greater accuracy. It should be noted that investors have made important decisions in their business and take the risk of investing large amounts of capital. There are investors who decide to make their largest investment in Kulim, outside of the headquarters in their home country. This is based on their confidence that Kulim provides a highly conducive business ecosystem.

The outcomes for both parties are predetermined and clearly defined. Every player involved in the development process sets objectives to achieve their respective goals. Investors establish timelines for production commencement and fulfilling their agreements with customers. They also have their own business plans, including acquiring return of investment (ROI) within a certain period. Similarly, MPKK also defines its outcomes in fostering local economic development by providing high-income employment opportunities, thereby cultivating a population with increased purchasing power. The high-income population will contribute in creating a flourishing business environment in Kulim, aligning with MPPK's strategic plan to develop the city into a highly livable urban center.

Leveraging Technologies

It is widely accepted that technology is an enabler that will drive productivity growth in the present and future. Leveraging technology is an effective strategy to increase productivity. MPKK encourages the use of virtual applications as a solution. This experimental approach makes it easier for investors to comply with regulations and helps MPKK make decisions more efficiently. The facilities provided to investors to submit development plan applications online to OSC are the first steps that lead to the success of ECP. In addition to online application, the fee can also be deposited through the same mode. This method proved to be effective, particularly during the imposition of the movement control order from the COVID-19 pandemic. In the movement control order period of almost three years, MPKK operations went on as usual without delay.

MPKK has been conducting online meetings since the first day of the movement control order. As of 2023, all OSC meetings have been conducted online twice a month. Almost 95% of meetings related to approval of development plans are conducted online. This includes during the preconsultation process and facilitation throughout the construction period.

Utilizing Geographical Information System (GIS) technology is also integral to ECP's success. MPKK has built an integrated data base system known as Kulim Integrated Data Base System (KIDS), serving as a one-stop solution for decision-making regarding the approval of development plans. KIDS enables MPKK to access spatial data that facilitates accurate decision-making. GIS is widely used by MPKK to analyze development plans spatially, providing clearer and more accurate information about the development plan proposed by the investor, including the latest information on-site.

Visionary Leadership

The ability of MPKK leaders and investors to envision the long-term trajectory of a project enhances its viability. The setting of a clear future direction during the implementation of the project is one of the key success factors. A leader with a clear vision ensures that the implementation of the proposed project achieves its intended outcomes, propelling the organization forward. MPKK's success clearly shows that every organization needs a visionary leader at all levels. Visionary leaders are motivated to incorporate the vision and core values of a company and share those among the organization. They prioritize on strategic issues over short-term achievements.

Discussion

Planning Agile Working Places

Compliance with the rules often hinders the achievement of a development project. While regulations are enacted to ensure uniformity and safeguard the public interest, blindly enforcing the rules also exposes the risk of delays and impedes success. Therefore, prioritizing the process of understanding the needs between investors and the government in the early stages of project planning is crucial.

For local governments, regulators that implement policies and regulations directly to investors, it is necessary to establish clear rules and provide investors with an understanding of how they should comply with the regulations. Experience shows that there is an understanding gap between investors and the government.

There is a bias between investors and government. Investors perceive the government as trying to control them by enforcing the rules without understanding the problems they face in the compliance process. The rules are generally enacted and enforced uniformly. This bureaucratic approach often leads to bottlenecks to investors as the needs of each development project vary. Even the business plan of each company differs and for the company, the urgency and agility in addressing the competition in business is a priority.

Meanwhile, the government may think that investors are trying to avoid complying with the rules and are always looking for opportunities to disobey them. Therefore, the control must be tightened and the opportunity for noncompliance must be closed. This can lead to tensions between them, exacerbated if issues related to integrity also envelop their interaction.

MPKK has provided a platform to enable investors and MPKK to understand the needs of each other. This stage is crucial as investors interested in starting a business in Kulim come from various countries worldwide, each with a wide range of experiences of their own. However, this does not mean that MPKK takes an approach of easing compliance with the rules.

To ensure that investors and MPKK have a common understanding for each other's needs, preliminary consultations are set up for the convenience of all. At the planning stage, MPKK introduces three main approaches: (i) providing clear rules and guidelines prior to submitting development plans; (ii) conducting preliminary consultation sessions with investors and various technical agencies, and (iii) providing advisory services to investors to facilitate their preparation of development proposal before formally submitting to OCS.

Some regulations relating to the approval of development plans are outside of MPKK's jurisdiction. Efforts to establish understanding among technical agencies outside the MPKK should also be coordinated. MPKK collaborated with MPC to conduct workshops to streamline the regulatory compliance process from various agencies. MPC also helps to escalate issues arising at the central government level if the approval requires higher-level decisions. This can prevent investors and MPKK from being in a vacuum due to the paused interaction in the decision-making cycle.

MPC also plays a vital role in promoting ECP to the central level and making it the benchmark for the construction permit approval process for all local authorities in Malaysia. ECP has been recognized by the federal government as one of the effective ways to attract foreign investment into Malaysia. This will help Malaysia to revive the economy postpandemic. Foreign investment is considered the fastest way to revive the postpandemic economy through the supply of job opportunities.

Culture Changes

Culture to Emphasise on Outcome Rather than Output

The Agile approach has a significant impact on the work culture and understanding of MPKK staff on the concept of regulatory compliance. Among the new cultures practiced include putting emphasis on outcome, not output alone. This requires the understanding that while each rule is general, the needs of individuals involved are different. There is a gap in the requirements in the implementation of the rules. To ensure regulations continue to be relevant and enforced without compromising the prescribed outcome, the win-win approach in the compliance process must be understood by all staff.

The Culture of After-sales Service

The culture of "decide and leave" often puts investors in a precarious situation when faced with problems in managing their business. MPKK has inculcated the culture of after-sale service to investors, and not just providing services. The approach of providing services without providing after-sales service tends to reduce investor confidence to continue the business or expand the business in the respective area. Between 2020–23, MPKK recorded 200 consultation sessions as part of its after-sales service to investors.

Agile Working Hours

The work culture according to the needs, not merely to formal working hours, has become part of the work culture in MPKK. Most staff are ready to perform their work even outside of office hours and on holidays. This does not mean that the management takes advantage and ignore staff's right to meet their personal needs. Staff are given the flexibility to determine their own working time if there is a need to do so. This means that they can adjust their working time if there is a need for personal affairs, such as managing sickness in the family or attending to an emergency. MPKK still practices hybrid working systems and embraces the culture of working anywhere, anytime, and working on the move.

Interested in Exploring New Opportunities (Interested in Technology)

The interest of MPKK staff in leveraging technologies is very high. They are constantly exploring opportunities to improve the efficiency of the delivery system using technologies. Among them are utilizing GIS and online payment applications. Recently, MPKK had leveraged AI with the collaboration with the Construction Industry Development Board (CIDB) in using National BIM E-Submission (NBeS). NBeS is an automatic digital building plan checking platform. The system has the capability of checking plans and issuing results on its own. This can reduce human error and save manual review time from 14 days to 48 hours.

Challenges and Strategies

Staff Buy-in

Although MPKK has achieved commendable success with the implementation of ECP, the Agile approach still faces several major challenges. One major obstacle is the lack of widespread acceptance of this approach within MPKK's culture. At the initial stage of its introduction, there was a sense of distrust among staff members. Various questions arise among them, such as "Why do we need to give special treatment to this specific investor?" or "Why should we allow them to start the construction process when they have not complied with the conditions imposed by the technical agencies?" This skepticism has led to the sluggish implementation of the decision taken by the management. Most staff remain skeptical and think the changes are being implemented as a contradiction to existing rules.

Rules Involving Jurisdiction Outside the MPKK

The process of approving construction permits involves various external technical agencies. Coordinating the observance of these separate various rules requires an effective approach. Each agency has its own authority and works independently. If not adjusted effectively, investors will be caught up with various regulations and red tape. This can affect their business planning. MPKK is aware of this problem and is looking for effective ways to address it.

Policy Implications and Recommendation

The issue relating to the inconsistencies of compliance requirements of various technical agencies in the construction permit process has been detected by the Malaysian government since 2007. In adopting the structural functionalism framework, there are two approaches implemented to attend to the above issue.

First, using the concrete structure approach, the Malaysian government has introduced a top-level platform to coordinate the arising issues. In 2007, the Special Task Force to Facilitate Business, also known with acronym PEMUDAH, was established with the idea to address bureaucracy in business-government dealings and improve the ways government regulate businesses. PEMUDAH is co-chaired by the chief secretary to the government, along with captains of industry. The members of this committee consist of representatives of business associations and the chief secretaries of various ministries. MPC is a secretariat to coordinate issues/problems and to escalate them to the meeting.

In addition to PEMUDAH, the Malaysian government also introduced the same platform at the local level by requiring every government agency, especially the local councils, to set up the MalaysiaMudah

also known with MyMudah, which is to remove unnecessary regulatory burdens. MyMudah is a business troubleshooting unit, which oversees the outstanding issues that arises during construction as well as during the operation of the (new) plants. Prior to the implementation of MyMudah, MPKK had first created a dedicated unit to offer services to investors who are experiencing problems either at the factory construction stage or while carrying out business in Kulim. In the early stages, this unit was called the Industrial Unit. Following the decision of the National Economic Council which convened on 24 November 2021 that stipulated every government agency should set up a MyMudah unit, this unit was rebranded as the MyMudah Unit in February 2022. MyMudah is an enabler to ensure that Malaysia continues to be competitive in attracting foreign and local investments as one of the postpandemic economic recovery strategies.

Second, employing the analytic structure approach, MPKK had adopted behavioral insights to inculcate new culture in the organization. Studies have consistently shown that organizational culture plays a vital role in fostering high-performance organizations, which reaffirms this study's findings. While the sustainability of the organizational performance depends on various factors, the current performance proved that the promising ecosystem and culture in MPKK are poised to propel the organization into the future. However, without endurance and a strategic way forward, the risk of failure persists.

Conclusion

Agility has become integral to civil service reforms in Malaysia. While the acceptance of this concept remains a topic of debate, the changing practices of working in the private sector, emphasizing speed, flexibility, and outcomes-focused approaches, serve as a driving force influencing work styles in the public sector. The success story of MPKK exemplifies a shift from rigid bureaucracy to Agile regulation, signaling a new narrative in the government delivery system in Malaysia. To progress further, stakeholders must demonstrate courage and commitment to reevaluate the working style in the government's delivery system by embracing technological advances and aligning values and cultures with current needs.

CHAPTER 6 : PAKISTAN

AGILE WORKING STYLES IN PAKISTAN - A LOOK INTO IT-BASED SOLAR ENERGY BUSINESS MANAGEMENT

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Abstract

This chapter provides an insight into the adoption of Agile-based working styles in Pakistan. Approaches in Agile practices, appropriate strategies to overcome challenges, particularly during and after the COVID-19 pandemic, productivity, and well-being of employees in an Agile environment are among main considerations of the current work. The case study is on a private IT-based solar energy solutions company, Sky Electric and their Agile implementation. The company turned into a profit-making organization based on its leadership vision, where it addressed different challenges for employees in its technology-assisted Agile adoption. Agile implementation helped the company in gaining market stability, employees' productivity, and eventually, a business standing in challenging environments, such as the pandemic. Effective employee facilitation, while focusing on customer satisfaction, led Sky Electric toward business growth and excellence. Finally, learnings from Sky Electric's practices for Agile, policy recommendations, and implications are proposed for the consideration of other sectors and industries.

Introduction

Agile has its initial roots in the manufacturing sector for meeting changing market needs and reducing costs [1], but over time, has gained dominance in businesses related to IT and software development. Collaboration among teams and customers became crucial for timely adjustments and allowing them to agree to move forward, which allows saving cost and effort compared to the conventional Waterfall Model (classical software development methodology) [2]. The need for active communication and collaboration among these stakeholders for agility was further strengthened by the improvement in internet technology [3–4]. Scrum emerged as a popular methodology that is used extensively to ensure Agile is in software development projects [5]. Scrum allows software teams to break requirements into small iterations, termed as sprints, which allow developers to accommodate customer changing requirements actively and effectively to meet time, cost, and productivity targets [6]. In the current era, the concept has been adopted by various businesses, including entrepreneurial freelance initiatives, demand forecasting, and marketing and services, such as banking, education, and healthcare, to name a few [7–11].

This shift of paradigm from conventional work practices to Agile is due to its ability to address changes in requirements from respective stakeholders with quicker response rate [12]. This is in addition to its ability to deal with uncertainties [10]. The concept has achieved more focus for conducting business

under emergency situations, such as during the COVID-19 pandemic, where Agile methodologies were employed in various fields to facilitate employees working from home as a way to avoid the spread of the disease due to face-to-face interactions [13].

Thereafter, in the current postpandemic environment, Agile-based and IT/technology assisted work style has been emerging as an imperative combination for use in various businesses and projects [14–16]. It does not only require staying connected with the advanced world and remaining competitive by addressing changing customer demands and requirements, but now, it also has a role toward United Nations Sustainable Development Goals (SDGs) for economy, productivity, quality, health & safety, environment, and energy management [17].

In the case of Pakistan, funded by UN SDGs and the World Bank, 58 projects amounting to USD14.8 billion are in progress for different sectors, like energy, agriculture, healthcare, and private business organizations development [18]. According to the Development Advocate Pakistan (DAP) report, Pakistan has shown a modest progress against UN SDGs of 19.5% since 2015 [19]. To meet with SDGs and World Bank requirements, Pakistan needs to do two things. First, the country needs to respond to the Agile mechanism adopted by the World Bank for the granted funds and progress monitoring [20]. Second, it also needs to transform on Agile practices for achieving its targets of productivity, resource optimization, and digital transformation, along with cyber readiness in compliance to its National Cyber Security Policy 2021 [21].

In January 2023, Pakistan committed to a five-year Country Program with UNDP to achieve SDGs, engaging elected leaders to be partners for this program [19]. Recognizing the significance of improved employees' skills, productivity, work engagement, well-being, and promoting Agile supporting work environment, Pakistan has to take effective measures that can facilitate this paradigm shift and enable employees to balance their professional and personal needs [22–23]. In Pakistan, the cultural diversity, traditional management approaches, and routine work practices of the employees, particularly in this current recovery phase after pandemic, require systematic evaluation to address productivity challenges and support modern Agile working framework [24–26]. Hence the term Agile plays two crucial roles in Pakistan's modern context: (i) to provide business continuity for entities, industries, and public and private organizations, addressing transformational and data security challenges, and selecting the right Agile strategies; and (ii) to enhance productivity through effective communication, collaboration tools for employees' facilitation, and analytics techniques in achieving organizational business requirements [27].

Focus and Scope of Case Analysis

Since the advent and departure of the COVID-19 pandemic, there has been a global surge in reliance on Agile practices to meet dynamically changing business requirements of organizations [28–29]. Likewise, Pakistan has also experienced the same trend and embraced Agile across various industries, particularly through digital transformation efforts aimed at achieving increased responsiveness and executing business functions more effectively within public and private organization management tiers that encompass local and global business activities [30–32]. This shift has led businesses in Pakistan to explore digital tools and learn to manage productivity challenges and ensure survival amid challenging circumstances, such as the COVID-19 outbreak [33–34]. However, there are businesses, owing to their dynamic nature of work, which have found alignment with Agile practices to increase management and employee productivity, which enables them to facilitate their customers more efficiently and with a high degree of competitiveness [35].

Against this backdrop, the IT and software development sectors in Pakistan [36–37] emerge as prime candidates for Agile-based productivity studies (supported by a detailed literature review earlier in this case). The focus is further narrowed to private-sector organizations that have pioneered Agile adoption using IT technology to meet its business requirements, sales, and productivity [36–38]. The objective of this study is based on the above discussions, include examining challenges and strategies

in transitioning to Agile working [12] as well as exploring project management methodologies for Agile working teams, such as Scrum, and Extreme Programming, among others [4]. Important considerations for achieving employee productivity in the unavoidable circumstances, such as the pandemic [39], monitoring and measuring performance [40], employing digital technologies and communication tools for efficient Agile working, including data protection and security [41–43] are factored in.

Literature Review

Since its inception, the Agile concept, initially rooted in Iterative and Incremental Development (IID) techniques in manufacturing, has evolved significantly. Quality philosophers' findings between 1930 to 1980 laid the groundwork, paralleled by its adoption in software projects, notably by Bernie Dimsdale, John von Neumann, Herb Jacobs, and Gerald Weinberg for IBM and Motorola in 1957. This incremental development techniques eventually gained formal acceptance as the Manifesto for Software Development Projects in 2001 [44]. The manifesto was the work of 17 software development professionals with the aim to address dynamically changing requirements and challenges encountered in meeting the time and cost constraints of software development projects. These changes highlighted the limitations of the structured Waterfall approach, which prioritized planned requirements projects over adaptability [45]. Agile, in contrast, emphasized team interactions over processes, focusing on core software requirements rather than extensive documentation and foster customer collaborations to accommodate real requirements instead of rigid contractual bindings [44–45].

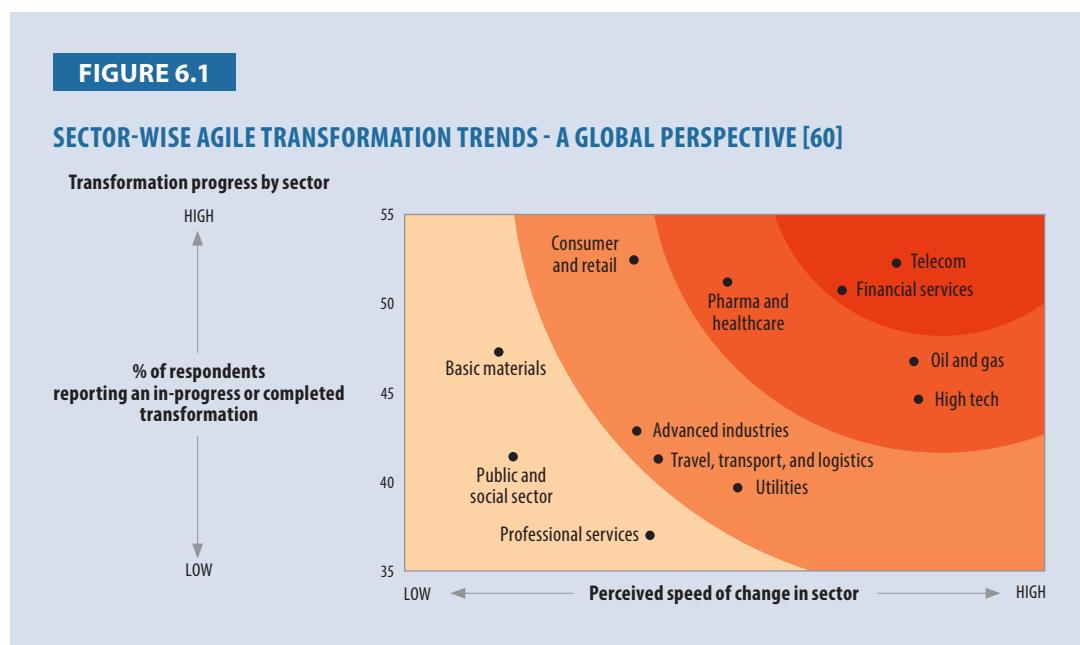
Since then, the capital investments in IT, software development, and research and development (R&D) have increasingly emphasized innovations and new business models. This shift has led to the emergence of new multitasking roles and flexible behaviors among managers, employees, and customers, facilitating access to vast amounts of data and enabling quicker sales forecast, requirements analysis, and feedback assessment. Consequently, firms and organizations have experienced heightened awareness levels, access to knowledge, and transformed working structures from rigid vertical hierarchies to horizontal and flexible team interaction models [46].

Today, Pakistan boasts a thriving IT and software sector, offering expertise as a solution provider for a wide range of businesses across the country [47]. This includes supply chain management, banking, telecommunication services, among others [47]. According to the Pakistan Software Export Board (PSEB), there are almost 3,000 software houses across the country with 1,638 new IT companies registered in 2022 alone. Additionally, there are 761 call centers and 1,463 freelancers registered [48]. Further, 33 million people registered for freelancing courses under the DG Skills Program of Ignite, exceeding their set KPI by 75% [48]. According to Pakistan Institute of Development Economics (PIDE), the E-commerce emergence achieved a notable rate of 6% per year in Pakistan and ranking 37th position in e-commerce markets [49].

However, despite these advancements, there is still room for improvement in adopting systematic, appropriate, and adequate Agile practices. Key issues include the need for suitable selection criteria for Agile strategies [50] and a focus on the potential, skills, competence, and creativity of employees, along with adequate training and awareness [51]. Additionally, attention must be paid to updating infrastructure to facilitate Agile teams, particularly for remote work settings, through technological solutions, such as cloud computing [52–53]. Another important consideration is effective risk management in the face of rapidly changing work environment [54]. Likewise, active communication and collaboration are required with stakeholders, customers, and Agile teams for effective change management [55]. Further, addressing distance factors in distributed Agile teams, including physical, temporal, sociocultural, and knowledge/information sharing aspects, is essential for fostering effective communication, control, and collaboration [56]. Finally, supportive government policies and regulations as part of the Digital Pakistan Vision 2025 [57], along with consideration for employee well-being in Agile environments, remain important areas for development due to their varying nature across businesses and working cultures [32, 36, 58].

The dynamism of digital transformation is opening new possibilities for implementing Agile frameworks, not only in software development projects but also in Pakistani small and medium enterprises (SMEs) and services-based organizations. Various business operations, including supply chain management, sales and demand forecasting, team and customer communications, stakeholders' collaboration, and management as well as active interactions among employees, stand to benefit significantly from Agile methodologies and technological innovations. These approaches can lead to improved productivity, effective resource utilization, increased employee engagement and retention, and enhanced well-being and work-life balance [59].

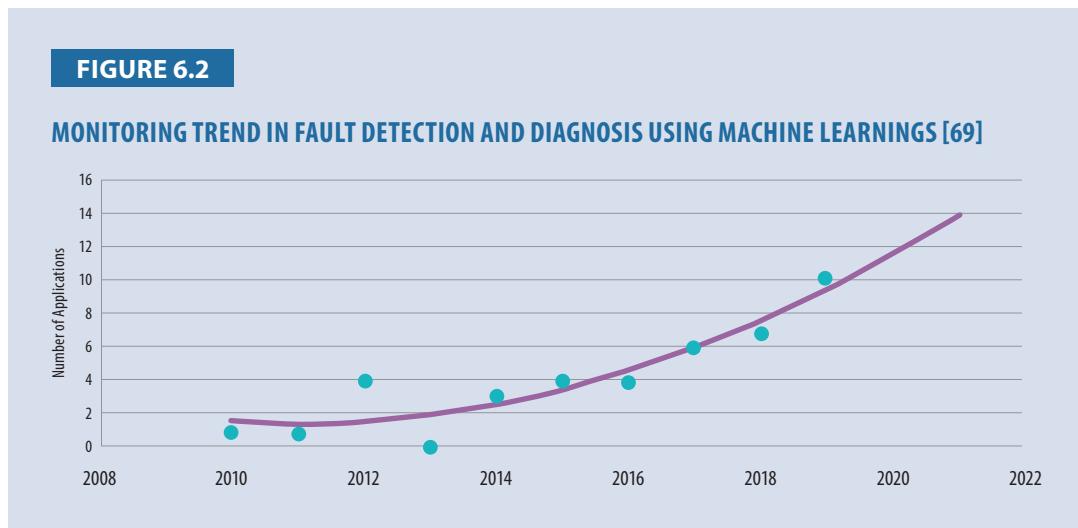
With over 3 million SMEs contributing 40% to Pakistan's GDP, 255 in exports, and employing more than 80% of the job market, there is a pressing need for systematic and strategic adoption of Agile practices. This adoption can help enhance employee behavioral flexibility and improve customer relationship management, in addition to effective resource utilizations for competitiveness [59]. Recent global trends in Agile framework reflect higher Agile implementation trends, particularly in the products and services providing sectors [60], as shown in Figure 6.1.



The growing recognition of Agile frameworks in business organizations working model is further augmented by incorporating Industrial 4.0 technologies, such as IoT, Industrial IoT, cloud computing, and cyber physical security, along with advancements in IT and related telecommunication services driven by the introduction of 5G technology [61]. However, despite these advancements, security will remain a challenge, particularly in cloud computing environment [62].

Being the first country to adopt UN SDGs as National Goals of Pakistan for 2030 Agenda of Sustainable Development [63], Pakistan has prioritized low-cost energy as a Category-1 national priority against SDG 7 [63]. According to the National Economic Council, which serves as the highest national plan approval forum for policy implementation, initiatives in the renewable energy sector have focused primarily on solar power-based green energy generation. This emphasis stems from Pakistan's substantial solar power potential, estimated at 1,600,000 MW, making it a natural asset for addressing power shortage and energy crises resulting from costly fossil fuel-based power generation dependency [64]. The National Renewable Energy Laboratory (NREL) rates Pakistan's solar power potential as high as 2.9 TW with an average daily solar radiation of 5–7 kW h/m² in 95% of its terrestrial area [65]. These potential guarantees a cost-effective and environmentally friendly solution to Pakistan's energy crisis and import dependency.

Despite the significant potential, challenges in utilizing this resource are not yet actively addressed. These challenges include the excessive cost of solar power systems, the lack of efficient and affordable direct current (DC) appliances, lack of government incentives, such as tax rebates and producer buy-back schemes, and seasonal intermittency [65]. Addressing these challenges requires active data monitoring to resolve performance issues [66], such as line arc fault, line-to-line, line-to-ground, and ground faults, using smart equipment for remote sensing, fault detection, diagnosis, and optimal planning for energy resources [67] that are put up by different solar companies in Pakistan [68]. Additionally, the continuous emergence of technological trends in solar energy systems performance, shown in Figure 6.1, necessitates ongoing updates to methodologies and digitalization progress within the solar industry.



Cybersecurity is emerging as a critical domain, demanding attention to safeguard and protect data privacy and securing it against threats, such as False Data Injection, Denial of Service, Man-in-the-Middle, Replay, and password attacks, to name a few. Utilizing ethical hacking and other cybersecurity techniques become imperative to ensure the visibility and reliable performance of solar monitoring systems [70].

As a developing country, Pakistan must formulate or review policies and procedures to facilitate upgrades, skill development, and training programs that align with future requirements and global trends [71]. In light of these considerations, the next section of this chapter will delve into a case study of a growing solar company from the renewable energy sector.

Case Analysis through the Canvas

Sky Electric Pvt. Ltd. was established in 2015 with the aim of making clean energy universally accessible through a distributed and intelligent solar and energy storage grid. The company commenced commercial operations in late 2017, embarking on a journey of innovation and growth. Its primary business functions include power distribution and monitoring for uninterrupted supply using software-based cloud computing systems, which were later upgraded for autonomous monitoring using artificial intelligence (AI) and Machine Learning (ML) [72–73].

The major Agile strategy adopted in Sky Electric focused on employee facilitation through communication and collaboration tools and techniques to enhance organizational agility to meet expanding business and sales requirements. Initially, sales projections and customer outreach were managed using sales force that was later abandoned and replaced with more indigenously developed,

cost-effective solutions aligned with the enhanced competency of their work teams. The success of Sky Electric during the middle era of Agile frameworks implementation can be attributed to three key factors. Firstly, its skilled and experienced leadership in software technology and development projects that played a crucial role. Secondly, strategic targets set by the state in respect of UNDP SDGs and technology initiatives to foster innovative business solutions. Thirdly, the nature of Sky Electric's business was aligned with Agile frameworks, enabling rapid response to requirements while ensuring service quality. Another important aspect is the company's hiring practice focuses on attracting relevant competence with competitive remuneration and rewarding career opportunities. With over 500 employees, nearly half of whom are engineers, Sky Electric boasts visionary top management and leadership that systematically implemented Agile infrastructure, acquired relevant resources (in terms of hardware, software, and competent personnel), conducting effective trainings, development, and appraisals to retain employees and thereby, achieved performance targets.

Based on lessons learnt from previous experiences in-house and insights from other organizations and competitors as well as keeping in view future sales forecast, type of potential customers, region and sector-wise projections, and future technological trends for business transformations, Sky Electric remained on target in decision-making regarding business expansions and technology incorporation. The company's success is evident in its supplier base expansion, customer satisfaction, market capture, business revenue growth, and highly trained team, all contributing to its productivity and market dominance.

To mitigate reliance on external technology services and ensure seamless technological integration nationwide, Sky Electric established its own IT Department. The department harnessed cloud technology to facilitate effective collaboration and communication among its stakeholders and the workforce, ensuring optimal performance, service quality, and data security.

Situation

Sky Electric's challenge is to provide intelligently monitored solar services across widely distributed geographical locations in Pakistan. The company's priority is to encounter the challenge by swiftly responding to client requirement for solar projects. To do so, management must ensure provision of necessary resources to their teams and maintaining active interactions while responding promptly to changes become crucial for management. Coordination among on-site teams, office personnel, customers, and other relevant stakeholders needed to remain constant to streamline operations and minimize delays in project execution as to save time, costs, and undue efforts.

However, each project presented new challenges that required brainstorming, training, and ongoing learning while maintaining project momentum and adhering to safe working practices on site, particularly during the COVID-19 pandemic. Amid the pandemic, the company faced additional challenges related to employee well-being, interactions with each other and customers, health, motivation, and team productivity, besides managing changing priorities and project/service delivery speeds. To address these issues, Sky Electric adopted Agile working styles that were adapted during the COVID-19 phase to meet the requirements. Despite these efforts, the company faced issues/problems regarding employee acceptance and effective compliance in meeting requirements in a timely and efficient manner.

Issues/Problems

The main challenge for top management was in the seamless implementation of Agile methodologies across diverse project teams, particularly during the COVID-19 phase. Resistance to change within certain organizational segments consumed time and energy to reshape processes in response to the changing context. There existed a lack of clarity in prioritizing tasks and activities across different project teams, primarily due to miscommunication. Although there is an adopted policy for frequent strategic review as to maintain project alignment, the frequency of reviews sometimes overwhelmed employees, resulting in skipping of important tasks and timelines.

Similar challenges were also posed with resources allocation on projects, as did data exchange and interpretation. The existence of different types of software used by employees without a common gateway led to variability and hindered data visibility, wasting employee time and effort on data retrieving and comprehension. Effectively implementing policies, particularly during the COVID-19 phase, proved challenging for the company in maintaining engagement with their teams, customers, and projects while ensuring visibility of tasks by the top and middle management to plan future actions. One operation manager reported that before the pandemic, on-site team lacked the skills to collaborate and communicate effectively online, hindering seamless work executions on-site. Additionally, certain mandatory document approval procedures involving stakeholders, such as clients, required digital means while compliance protocols during COVID-19 for mandatory site visits led to delays.

Solution

Agile Office Design

In response to the pandemic, Sky Electric initiated a mobile office design strategy, particularly near client sites. This approach ensures closer collaboration with clients and the ability to address project requirements more efficiently. Portable office setups were established, allowing the teams to work seamlessly from various locations based on project needs. Equipped with the necessary technology and communication tools, these mobile offices ensured continuous client support.

The head office underwent significant changes to facilitate and support a virtual work environment during lockdowns and restricted office access. Investments were made in advanced virtual collaboration tools to ensure effective communication and project management. Office layouts were adapted to accommodate a more flexible workspace, promoting a hybrid model where employees can choose between working in the office or remotely. Hot-desking arrangements were introduced to optimize office space and accommodate varying attendance levels. Substantial investments were made in upgrading technological infrastructure to support remote work effectively. Robust cyber security measures were implemented to ensure data security and privacy during virtual operations.

Agile Methodologies

Sky Electric's top management also implemented a dynamic project management approach that embraces flexibility. They adopted Agile methodologies to swiftly respond to changing project requirements. Through regular strategic reviews, retrospectives, and decision-making sessions, they ensure alignment with evolving project needs, communicating effectively, and developing iteratively without affecting quality. Middle and lower management teams were empowered with clear communication channels for real-time updates. Cross-functional collaboration was encouraged, allowing teams to adapt quickly to changing project dynamics. Training programs ensured that employees are equipped with the skills needed to navigate evolving project requirements.

Work-Life Balance

Flexible work arrangements, particularly during the COVID-19 pandemic, have been implemented to help employees balance personal and professional commitments. Regular communication and feedback sessions ensured that the concerns and needs of employees were addressed. Only mandatory staff were called on a roster basis to the office with a setup organized to ensure safe distance among employees. Flexible reporting and consulting hierarchies were defined to assist employees in effective communications using online soft tools, emails as well as social media. Job splitting/sharing among employees were further done where possible, allowing flexibility in task completion time. This facilitation was considered important to realize employee challenges during the pandemic-driven environment to assure a healthy work-life balance. Training programs and workshops were conducted to aid middle and lower management in adapting to new policies. Open communication channels allowed for the exchange of ideas and suggestions for improvement. Initiatives were introduced to support the well-being of employees, including mental health resources and wellness programs. Training sessions were conducted to help employees adapt to the challenges of remote work.

Cultural Changes and Employee Productivity Enhancements at Sky Electric

A significant cultural shift was observed with a heightened emphasis on transparent and open communication across all levels of the organization. Regular virtual town hall meetings, team huddles, and one-on-one check-ins were introduced to foster better communication. The move to remote work prompted a cultural shift toward embracing flexible work arrangements. Employees were empowered to manage their work schedules, contributing to improved work-life balance. A shift from a traditional time-oriented approach to a results-oriented one was encouraged. This change allowed employees to focus on delivering high-quality outcomes rather than adhering strictly to set working hours. The necessity for remote work accelerated the adoption of technology, creating a more tech-savvy culture.

Employees became more proficient in virtual collaboration tools, enhancing overall productivity. The shift to remote work prompted the introduction of virtual team-building activities. These initiatives aimed to maintain a sense of camaraderie and inclusivity among team members despite physical distances. A cultural emphasis on employee well-being emerged with the introduction of wellness initiatives. Mental health resources, mindfulness sessions, and wellness programs were implemented to support employees. A cultural shift toward continuous learning was observed with an increased focus on employee development. Virtual training sessions and skill development programs were introduced to enhance employee capabilities. Virtual platforms were leveraged for employee recognition, fostering a culture of appreciation. Regular shout-outs and awards ceremonies were conducted to acknowledge outstanding contributions.

Results

Agile office design helped Sky Electric to reconfigure their workspaces to meet changing needs, particularly maintaining safe distances and hygienic requirements, as required in the COVID-19 phase. However, a change in routine working norms did impact employees due to psychological fear and having controlled movements within the premises. Though the office design allowed employees a safe and sanitized environment, there was undue stress of sitting in a place with no relaxed face-to-face talks or discussions to free minds for a period of time. It impacted cognitive performance levels and took time to adopt a new routine. Further, overcoming issues of communication skills as well as hardware/software and internet services problem caused hurdles in getting things done on time.

Mobile offices proved helpful in effectively addressing client and on-site communications. Repetitive management meetings, frequent collaboration, and communication among teams working on the projects supported Agile working productivity enhancement. Nevertheless, this achievement sometimes came at the cost of burnout feelings and observations of fatigue/overstressed among employees, particularly those in middle- and lower-level management in the operations and sales department. A noteworthy observation in this case study is the cost efficiency that Sky Electric enjoyed, offering discounts in their products and services due to reduced energy utilizations at offices, decreased employee commute that allowed saving transportation costs, and reduced paperwork due to working online, among other drivers of their Agile practices. Implementing remote work policies, reducing communication barriers, and allowing flexible work hours with job sharing approach enhanced employees' productivity.

At times, this also resulted in genuine delays due to a naive approach to work for employees, in terms of failing to prioritize tasks, estimate time, or organize in a complete manner in view of requirements. Similarly, managing personal and professional lives proved difficult, requiring mentoring from senior teammates besides prime job requirements to stay focused and composed. A tech savvy culture promoted professionalism among employees and cultivated self-learning and self-driven abilities, keeping in view employee well-being. They were able to develop a good command on soft tools to perform their duties, which after an initial learning phase proved to improve task completion performance. This also resulted in enhanced participation within teams and clients besides providing employees an opportunity for work-life balance, demonstrating confidence in soft skills and the ability to work independently from remote places.

Nevertheless, it is important to mention that the employees at all levels, particularly at middle and lower management, faced being overoccupied with huge volumes of information and tools that somehow affected their wellness and work-life balance. Sky Electric took measures as stated in the solutions segment in this chapter and achieved satisfactory results. Employees improved on their skills over time for Agile-based work-from-home systems but felt a loss of workplace culture and experienced long hours of exposure to systems-generated musculoskeletal stresses and mood swings due to the loss of commute.

However, after the pandemic, Sky Electric modified these practices to varying degree in its different business functions to effectively meet requirements. This includes facilitating site work teams and clients for face-to-face meetings and discussions on project requirements. This is especially necessary for residential-type clients, where online communications were observed creating confusions and a lack of understanding in addressing requirements effectively.

Therefore, pandemic-oriented initiatives, such as taking online solar design document approvals, were discontinued. Previously eliminated preinstallation site surveys are now reinitiated. Due to reduced team commute during the pandemic, savings were made which was redirected to offer discounts to clients, resulting in increased sales and success. Additionally, the management incentivized employees with bonuses to maintain focus on business activities and encourage remote working, despite the challenging circumstances.

On the sales and marketing side, clients who are mostly from corporate sector, found it convenient to conduct business online. Therefore, practices at corporate client side have been kept online to date and efforts have been made to further improve them. Additionally, employees, except for on-site installation workers, have demonstrated better familiarity and aptitude toward online systems. This has allowed them to enjoy more flexibility, confidence, and efficiency in doing their jobs postpandemic. They now experience hybrid working arrangements, providing them with the liberty to commute independently to physical offices when required or work from home as needed.

Arrangements at the office have been restored to their original order after the pandemic, enabling employees to resume their usual routines. However, there is now a realization of the benefits of saving unnecessary indoor and outdoor commute as well as avoiding unnecessary physical presence, which saves time, cost of utilities, and reduces fatigue. The management is now more willing to accommodate remote working, where possible. This keeps employees facilitated, self-driven, and productive.

Hierarchies within both the sales and operations team have been reviewed after the COVID-19 restrictions to effectively maintain communication among themselves and with clients and other stakeholders. These adjustments were made to resolve communicational challenges among the head office, on-site teams, and clients. Senior personnel continue to play a crucial role in these hierarchies, now also serving as mentors for the teams, by facilitating effective communication using online tools. With the removal of pandemic restrictions and by the restoration of routine communication modes, senior managers can gain focus on their prime responsibilities and teams to work with more freedom and ease to meet targets.

Key Success Factors

Experienced and Visionary Leadership

Sky Electric is owned by an exceptionally competent professional engineer and IT expert who recognizes the increasing importance of green energy and aligned with Pakistan's future vision for UN SDGs. With a deep understanding of the digitally driven solar power business, the leadership at Sky Electric has steered the company in the right direction.

The experienced and forward-thinking leadership has played a pivotal role in ensuring that the transformation process remains on track despite facing rapid expansion challenges.

Culture Development

A strong emphasis has been placed on fostering a culture of employee competence and skill development at Sky Electric. Employees are encouraged to take on multiple roles and collaborate with flexible working hierarchies. This approach enables to achieve higher speeds on data analysis and decision-making processes. Employees are empowered to take ownership of customer interactions, ensuring efficient workflow and quick implementation of innovative solutions to maintain competitiveness and dominance in the market.

Employee Empowerment

Employee empowerment through training and skill enhancement has been a cornerstone of Sky Electric's success. By investing in their workforce, employees have been equipped to meet targets and consistently deliver high-quality services. Striking a balance between technical maturity and social controls has reinforced team integrity and prepared the organization to accept challenges confidently.

Operational Efficiency

With expertise in Infrastructure as a Service (IaaS), Sky Electric has leveraged advanced and indigenous software development capabilities to monitor systems effectively. By employing emerging technologies, such as cloud-based computing systems, the company has streamlined processes and improved operational efficiency. This strategic approach ensures that Sky Electric remains future-ready to serve with the latest and most innovative technological solution, securing its position of dominance in the market.

Discussion

Agile practices in Pakistan have evolved over time with different challenges and experiences for the IT and software-based organizations [58]. Insights gleaned from these experiences highlight the growing importance of management leadership and team organization, alongside technological considerations for the effectiveness of Agile-based project management and operational activities [31,74]. Aligned with Pakistan's Vision 2025 targets, there is an emphasis on innovation and technology to propel sustainable goals across various sectors including engineering, agriculture, manufacturing, supply chain, and both public- and private-sector service providers [57].

Software and IT sector, being intrinsically aligned with Agile concepts, has witnessed remarkable progress within Pakistan in the last few years [75]. However, despite its evident advantages, successful Agile implementation requires a thorough analysis of the organizational dynamics, scale, and employability levels based on various factors, including organization size, team size, distribution, and interdependencies between stakeholders, often comprising either co-located teams at the same site or multiple teams operating across distances [52]. This requires efficient and active coordination among teams and stakeholders for ensuring the success of an Agile business model, necessitating the development of interface mechanisms at different enterprise business function levels [76].

On the flip side, achieving harmonized team attributes, which typically encompass both social aspects and technical skills and competence, requires particular attention [77]. Establishing a robust communication framework, informed by communication theories and tailored to organizational context, is essential. This framework should be effectively mapped with chosen Agile strategies [78], leveraging appropriate digital means of communications, as demonstrated by Sky Electric in this case study. Given that the technical aspect of Agile is largely dependent on its team organizational and behavioral dynamics, special emphasis on training mechanisms may therefore be required. This includes routine needs identification, evaluations of training effectiveness, and skill augmentation initiatives aimed at enhancing organizational agility.

Policy Implications and Recommendations

The following discusses the main policy implications concluded based on the understandings developed from the Sky Electric case study.

Top Management Commitment

It entailed top management demonstrating commitment toward Agile transformation. This involves ensuring focus by providing vision and policies, allocating resources to support Agile initiatives, and conducting reviews to assess appropriateness of systems to meet requirements. This facilitates and promotes a culture reflecting collaboration, active communication, self-driven individuals and teams, and adaptability.

Agile Methodologies Selection

Employing the most suitable methodologies should be based on the nature of the business, the team's skillsets, and project requirements. This includes flexibility to accommodate frequent changes, collaboration needs with the clients, and other stakeholder communication and response requirements, among others.

Agile Office Design

Agile office design is the least focused aspect but the most important in the long run that impacts both efficient working and productivity of employees and engagement on projects. A well-facilitated environment not only ensures safe working conditions but also fosters better thinking and employee comfort, which can significantly impact employee learnings and contributions. Policies in this context should emphasize aspects, such as workspace utilization guidelines, ergonomically engineered office furniture, and thought-promoting abstract room interiors as well as exteriors designs.

Trainings

Training programs must be provided in a well-organized and documented manner, involving the identification of training needs, evaluation of training effectiveness, and participation at all tiers of management. This approach fosters an involved Agile environment and enhances employee productivity while considering their wellness-related activities, leading to increased satisfaction.

Cultural Considerations

Cultural considerations play a significant role in defining employee productivity. Overcoming the fear of failure, embracing positive changes, and fostering adaptability, self-discipline, and self-drive are crucial at all levels of management to achieve compliance. Initiatives, such as appraisals, lifelong learning, and promoting collaboration can significantly help promoting an Agile environment for productivity.

Pre/Postpandemic Practices Planning/Reevaluation for Continuity

A vital takeaway from this case study, particularly for management, is the need to anticipate and reassess practices for postpandemic or special situations, ensuring continuity and preparedness to address future risks. Factors to consider in planning/reevaluating practices, as gleaned from this case, include nature of the job, stakeholder communication skills (such as employees and customers), and employees' pre/postpandemic skills/capabilities to effectively utilize hybrid working models combining remote working skills and conventional practices.

Further, in the context of employee well-being, having a relaxed, flexible, and freedom-promoting working styles is crucial. Providing opportunities for employees to build confidence through self-driven initiatives, enhancing decision-making capabilities, managing time for personal and professional needs, and promoting self-accountability and performance awareness are important aspects to consider.

On the organizational front, there is a need to anticipate infrastructure changes required to accommodate postpandemic/special situations. This includes optimizing business functions to remain competitive in the market, fostering flexibility, and leveraging enhanced employee skills to achieve productivity, well-being, and profitability targets.

Conclusion

In conclusion, Agile working practices hold significant untapped potential in Pakistan to enhance productivity by offering a flexibility in working hours and enabling work from home. However, the success of these practices hinges on stakeholders' understanding of Agile strategies/methodologies and their customization to address specific business challenges and opportunities in the Pakistan context. The government needs to take proactive initiatives to promote the adoption of Agile practices by entrepreneurs, public and private organizations, and businesses across different sectors. These initiatives should be followed by regular retrospectives to assess and refine the Agile-based management in Pakistan, in alignment with global UN SDGs programs.

Organizations need to systematically evaluate their Agile requirements in terms of infrastructure, technological capabilities, resources constraints, development opportunities, customer needs, and market trends specific to their business. By doing so, they can realize improvements while adapting to evolving Agile concepts and leveraging advanced implementations using emerging technologies, such as AI and machine learning. Both the industrial sector and academia require special attention to foster an experimentation culture with Agile methodologies, encourage new learning and innovative solutions development. This will propel the nation toward embracing Agile and digitalization practices, fostering economic growth and stability.

Limitations

The current work is subject to specific contextual considerations aimed at highlighting the strategies, challenges, and measures taken by organization to achieve Agile status. The level of success with Agile and resulting productivity gains for employees and businesses may vary significantly across organizations and sectors within an organization as well as between local and global perspectives. This variability can be attributed to various complementary factors, including infrastructure development, sociotechnical culture, political and economic stability, educational standards, and research motivations.

CHAPTER 7 : SRI LANKA

SRI LANKA'S AGILE WORKING STYLE FOR PRODUCTIVITY IN THE GOVERNMENT SECTOR

R. M. Lalitha Padmini

Ministry of Labour and Foreign Employment

Abstract

The research study focuses on the context of Sri Lanka's public-sector service-providing entity and how it practices Agile work system to improve productivity. Agile working methods are a way of working for any organization to improve the performance of its employees by providing maximum flexibility and freedom for innovation, thereby creating a collaborative workplace. For this transition, leadership plays a key role by providing guidance and adopting consistent and transparent strategies. This research examines the issues and challenges faced in transitioning from traditional work styles to Agile work, and explores the ways and means the management can overcome such challenges through the use of appropriate technology, teamwork, and recognition of best performances, thereby achieving employee satisfaction and efficiency within the organization.

Introduction

One of the most widely used definitions states that Agile working is about bringing people, processes, connectivity and technology, time, and place together to find the most appropriate and effective way of working to carry out a particular task [1].

Agile working encompasses four main aspects of work - time (when do people work), location (where do people work), role (what do people do), and source (who conducts work). These elements are then adjusted to each person individually to fit their needs and working style, maximizing everyone's potential, and increasing productivity. The aim of Agile working is to create a more responsive, efficient, and effective organization, which ultimately improves business performance and increases customer satisfaction [1].

Recent changes in the working environment and its undeniable benefits are accelerating the adoption of Agile working. Key benefits of Agile working include:

- **Flexibility** - Not only does it allow current employees to have a better work-life balance, but a flexible working environment attracts a wider pool of professionals and retains talent. With Agile working, companies can grow and develop their most important resource - its people
- **Productivity** - A flexible approach to work opens the door to efficiency and productivity. Research shows that Agile businesses recorded up to 20% increase in productivity after introducing Agile working

- **Sustainability** - Giving employees a choice to work from any location at any time means that they don't need to commute long hours, which leads to reducing their carbon footprint. Companies can save on rent by downsizing to smaller office spaces, which also helps them meet their sustainability goals [1]

Technology plays a key role in growing and adopting the Agile working model that helps to improve appropriate methodologies and to simplify the processes [1].

According to the guidelines of the Asian Productivity Organization (APO) for this research, the topics encompass planning Agile working places in public or private sectors, culture changes for Agile working, challenges and strategies in transitioning to Agile working, Agile office designs, monitoring and measuring performance, technologies, or tools for efficient Agile working, including data protection and security, project management for Agile teams, and work-life balance through Agile working.

This research/case analysis selected for Sri Lanka analyzes the implementation of the Agile working style in the government sector, its positive impact on improving productivity of a local level administrative unit, namely Divisional Secretary's Office (DS Office), a public-sector service delivery institution.

Agile Working Style in Sri Lankan Context

In the Sri Lankan context, the adoption of Agile working styles has been gaining momentum in recent years, particularly during and after the COVID-19 period. Intermittent lockdowns during the pandemic have forced Sri Lankan working population to work from home, prompting many organizations in the private sector in Sri Lanka to recognize the benefits of Agile methodologies, including increased productivity, improved collaboration, and faster way to reach the market. It helps to adapt work practices, including remote work, work-from-home (WFH), and flexible working hours to ensure business continuity and productivity while addressing the challenges caused by the pandemic.

Generally, the Agile working methods have been implemented in Sri Lanka in software development companies, mainly in relation to technical innovations to adapt to changing requirements. However, the health information system led by the Ministry of Health has also provided health information support during the COVID-19 pandemic using Agile working style.

Beyond such information-sharing, the public sector initiated delivering essential services to the most vulnerable groups by improving the entire supply chain via digital government services. The public sector has encouraged institutions to ensure e-participation, facilitate e-health, e-business support, working and learning from home, and contact tracing for the health sector during the pandemic period.

However, most government institutions have not adopted Agile working styles extensively, WFH, or flexi hours, mostly due to the inadequate technical know-how among the staff as well as insufficient digital infrastructure. Therefore, during the post-COVID-19 period, most public-sector organizations have returned to the traditional office system. With the government encouraging productivity improvement in the public sector, several public-service delivery organizations introduced Agile working styles by using different methodologies that suited their organizations and institutions.

There are various policies/projects/programs currently being implemented to enhance productivity in the public sector, but they have to be further studied and examined on the extent productivity can be improved through the use of Agile working system in the public-sector service delivery institutions.

Research Problem

Sri Lanka case analysis is based on: (i) a public-sector service delivery organization; (ii) how the Agile working style enhanced the productivity of the organization; (iii) how much have they achieved their goals; and (iv) the challenges/issues faced in transforming the working style of the organization. Approaches, strategies, and systems created for overcoming these barriers for implementation by the management will also be discussed.

The following three topics have been selected to analyze the case selected for Sri Lanka study:

- Planning Agile working place for public sector
- Identifying challenges and strategies in transitioning to Agile working in the public sector in Sri Lanka. This includes the culture and customs in the workplace as well as in society
- Monitoring and measuring success with performances, achieving targets, customer and internal staff feedback, and KPIs for each sector/individual/whole organization

The following research questions are framed to analyze the selected case:

- How an Agile working style can be adapted to enhance the delivery of public services with a focus on meeting citizen's needs? How does this approach impact the quality and efficiency of services since inefficiency in service delivery is one key area of criticism against public-service institutions?
- What are the challenges and strategies associated with change management when transitioning traditional public-sector office to Agile work environments? How can resistance to change be addressed?
- How do Agile working styles impact other aspects of organizational performance, such as employee engagement, customer satisfaction, and operational efficiency?
- How does leadership style influence when transitioning Agile working style to enhance productivity, teamwork, and innovation in a public-sector organization as well as the sustainability of the system changes?

In line with the overall objectives stipulated, the objective of this Sri Lanka case study is to conduct research on a public-sector institution that has successfully implemented Agile working practices, in the delivery of services to the general public, identify challenges faced, how they addressed those, and best practices and lessons learned that can be applied to other similar organizations.

Focus and Scope of Study

This case analysis will focus on determining the extent to which a local-level public administrative unit, a Divisional Secretary's Office (DS Office) in Sri Lanka has adopted the Agile work method and how it has affected the effectiveness of that organization. It is necessary to examine the effect of the Agile working system on the efficiency of the public sector as studies on this area are limited. Hence, this case is a timely intervention.

Particularly, due to the current socioeconomic situation of Sri Lanka, public needs and social assistance services at the rural level should be more effective than ever. At a time when a number of complaints are being placed against the inefficiency in service delivery of public-sector organizations, effectively fulfilling the expectations of the general public through Agile working styles is becoming crucial.

In order to provide essential services to the people, the public service is maintained at various levels with a group of about 1.7 million public-sector employees. However, the efficiency of the public sector, which has been responsible for providing public services has been constantly criticized in recent times due to the inconvenience caused when the common person walks in to obtain services from the public-sector institution. Most of the services cannot be provided by any other private institution and they must depend on government institutions for that. Therefore, it is an urgent need to investigate how important the Agile working style is to enhance the effectiveness of public-sector services.

There are various policies/projects/programs currently being implemented to enhance productivity in the public sector, but it has to be further studied and examined to determine the extent productivity can be improved through the use of Agile working systems in the public-sector service delivery institutions.

Public-sector productivity is crucial for three main reasons. First, the public sector is a major employer. Second, the public sector is a major provider of services in the economy, particularly business services (affecting cost of inputs) and social services (affecting labor quality). Third, the public sector is a consumer of tax resources [2].

Sri Lankan Context of Public Administration

There are 25 administrative districts organized into nine provinces in Sri Lanka. Districts are the second-level administrative units and they are administered under a district secretary, who is appointed by the central government as the administrative head of the district. The main tasks of the district secretariat involve coordinating and communicating activities of the central government and divisional secretariats. The district secretariat is also responsible for implementing and monitoring development projects at the district level and help local level administrative units in their activities as well as collect revenue and coordinate elections in the district.

A district is divided into a number of Divisional Secretary's Divisions (commonly known as DS Divisions), which are in turn subdivided into Grama Niladhari Divisions (GN Divisions) at village level. There are 340 DS Divisions and 14,022 GN Divisions in the country.

Selected Case Study: DS Office Kundasale in the Kandy District

Among the 20 DS Divisions located in the Kandy district of Sri Lanka's Central Province, Kundasale DS Division exhibits complex characteristics. The area of the division is 85.8 sq km and consists of 80 village level administrative units named Grama Niladhari Divisions (GN Divisions) and 263 villages. With a population of 134,145, and located close to the city of Kandy, this division is developing rapidly as a semi-urban area and the population growth rate is also very high.

Ethnicity wise, this DS Division comprises Sinhalese 120,054 (81% of the total population), Tamil 16,235 (11%), Muslim 9,852 (7%), Burghers 340 (1%), and others (only seven people).

Within the area of this administrative unit, there are 20 local level public-sector institutions and suboffices, including police stations, hospitals, schools, training centers, 13 provincial level institutions, and 17 national-level institutions that expect various services from this DS Office. Also, Pallekele Industrial Estate, industrial zone, chief secretary's office, an international cricket stadium, International Buddhist Center, Sri Lanka police hospital, prison department, Ayurveda hospital, and many other key government institutions have been established. Thus physical and infrastructure facilities are developing rapidly in this division too.

TABLE 7.1

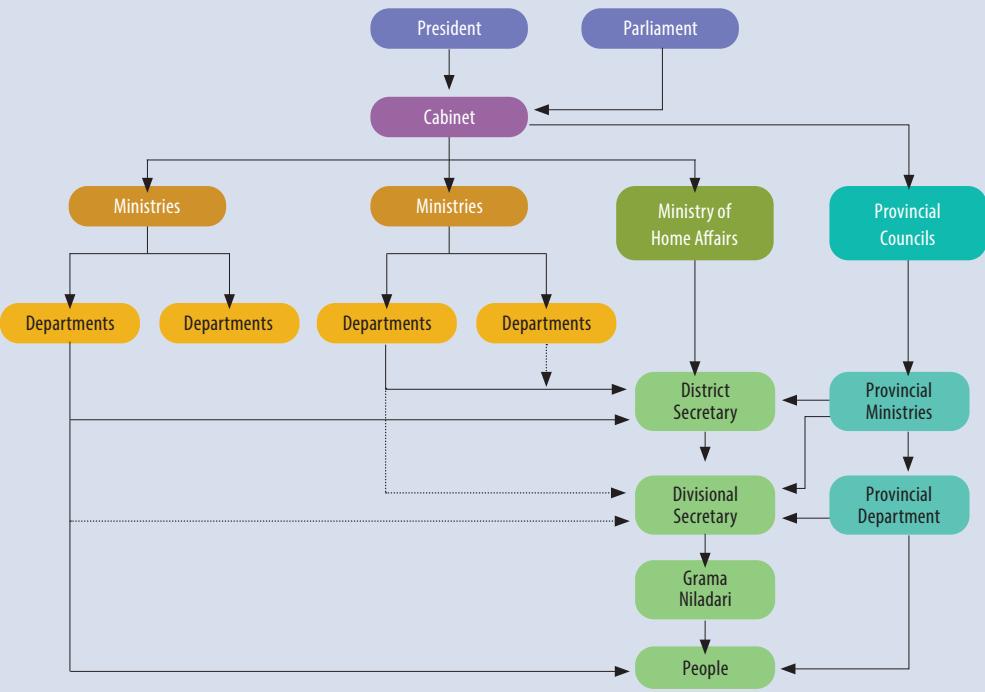
PUBLIC-SECTOR INSTITUTIONS WITHIN THE AREA OF SELECTED DS OFFICE IN KUNDASALE

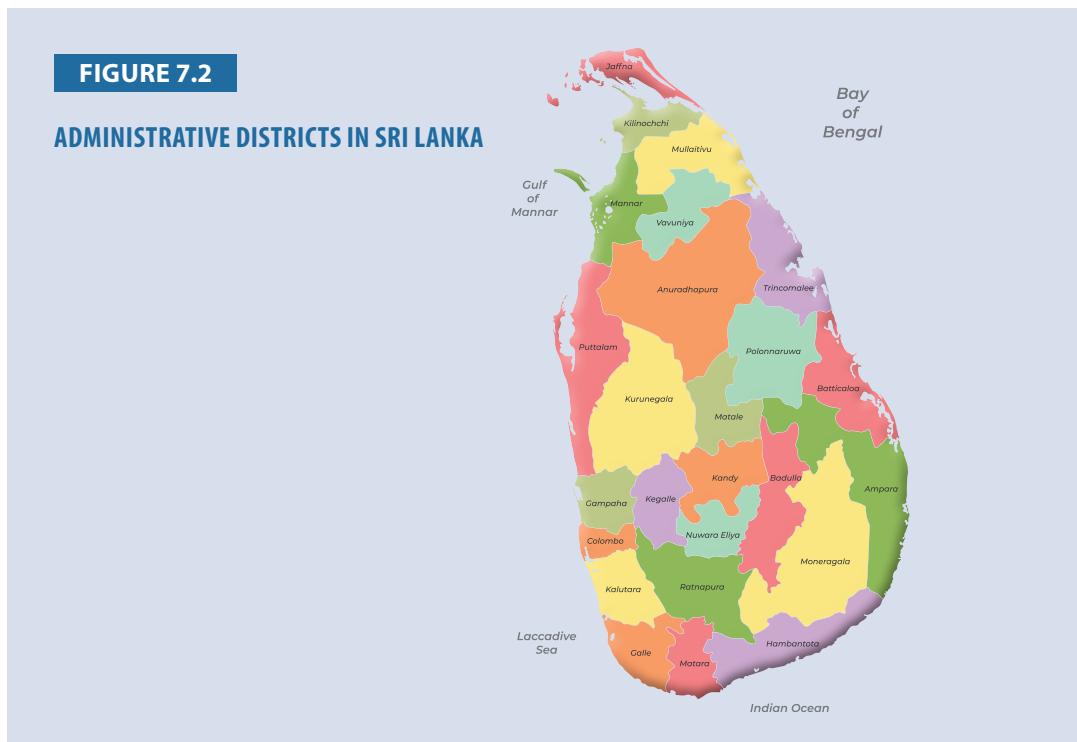
National-level Institutions			
1	Mahaweli College of Education	10	Sri Lanka Hotel School
2	Sri Lanka Board of Investment	11	Police Hospital
3	Industrial Development Board	12	Sri Lanka College of Agriculture
4	Prison - Dumbara	13	5th Corps Army Headquarters
5	Open Prison Camp - Pallekele	14	Peradeniya University Farm
6	Volunteers Brigade Camp	15	National Art Gallery
7	Rifle Brigade Camp	16	Sri Lanka Buddhist Center
8	Special Task Force Camp	17	International Cricket Stadium - Pallekele
9	Police Training College	18	Sri Lanka Institute of Information Technology

Provincial-level Institutions			
1	Digana Sports Complex	8	Office of the Medical Officer of Community Health
2	Central Provincial Council Complex and Departments under the Provincial Ministry	9	Provincial Council Complex
3	Provincial Road Development Authority Office	10	Ayurveda Hospital - Pallekele
4	Road Development Office	11	Bureau of Geology and Mines
5	Vocational Training Center for Handicapped	12	Ayurvedic Herb Garden - Pallekele
6	Road Passenger Transport Services Authority	13	National Design Center
7	Digana Rehabilitation Hospital		
Local-level Institutions			
1	Kundasale Local Council	11	Zonal Education Office
2	Police Station - Menikhinna	12	Office of the Medical Officer of Health - Menikhinna
3	Sri Lanka Police - Balagolla	13	Office of the Medical Officer of Health - Kundasale
4	Divisional Electrical Engineering Office	14	Divisional Forest Office
5	Sri Lanka Telecom Institute	15	National Water Supply and Drainage Board
6	Vocational Training Center	16	Government Hospital - Galphilla
7	Government Hospital - Menikhinna	17	Ayurvedic Medical Center - Digana
8	Government Hospital - Narampanawa	18	Ayurvedic Medical Center - Wavinna
9	Government Hospital - Yakgahapitiya	19	Ayurvedic Medical Center - Deliwalathanna
10	MILCO company		

FIGURE 7.1

ADMINISTRATIVE ORGANIZATION STRUCTURE IN SRI LANKA





Data and Methodology Used for the Research

Methodology for the research are as follows:

A comprehensive literature review has been conducted to understand the existing systems/frameworks, concepts, and good practices of Agile working styles in both public and private sectors in the country. Desk review has also focused on studying the relevant documents and official reports related to the public-sector productivity improvement and good practices of Agile working styles in the public and private sector in Sri Lanka.

Related documents, reports, surveys, and research reports on Agile work and objectives, success stories, and best practices of various countries on implementation of the Agile working style at the regional and global levels have been reviewed.

The study has also involved interviews and brainstorming sessions with relevant government officials in Sri Lanka, those responsible for the implementation of projects on public-sector productivity improvement. Selected face-to-face interviews using a questionnaire, focus group discussions as well as observations with the relevant government officials in the selected DS Division and those responsible for implementation of Agile work style.

Key Informant Interviews (KII) have been conducted physically with key officials of the selected office for this case study, DS Kundasale in Kandy district, which included divisional secretary of the DS Office, assistant divisional secretary, and the chief accountant as the leading officers. The session was organized to find how this particular organization defines Agile working and how the organization faced specific challenges in implementing Agile working.

Interviews and discussions have been conducted with the subordinate staff of each key sections of the DS Office, including the productivity development officer as well as the members of the quality circles to understand their personal experiences with Agile working, especially the challenges faced in transitioning the traditional work style to Agile work style. Findings of the surveys conducted by the DS Office to gather information from the general public, customers, and beneficiaries of the services

provided by the DS Office on their perceptions of Agile working and how they benefitted from the working system have been taken into consideration in this study.

KIIs with key officials of the National Productivity Secretariat of Sri Lanka have been conducted to understand their mechanism and methods used to evaluate public-sector service delivery institutions at the productivity award system in the country and to see whether they have considered the contribution of working styles to improve effectiveness of public-sector service delivery.

Literature Review

Research on the impacts of Agile working styles on productivity in the public sector is still relatively limited, but there are a few studies that have been conducted.

The research conducted focused on the ongoing response of design, development, and implementation of a COVID-19 surveillance system based on District Health Information Software (DHIS2) platform in Sri Lanka. The authors argue that the flexibility of the software platform, good technical and medical capacity, and new modes of collaboration on systems development across institutional borders have contributed to the agility shown in the Sri Lankan context and its success in meeting health information challenges posed by COVID-19. WFH concept also gained much popularity as a method of Agile work and its importance with the quarantine period during the COVID-19 pandemic in Sri Lanka [3].

The findings of a study “Remote Working Study during the COVID-19 Pandemic in Sri Lanka: Lessons Learned and What the Future Holds” explain the different human resource management activities executed by human resource personnel, such as employee engagement activities, setting guidelines, employee support, performance management, and training to make remote working successful when it was implemented as an emergency and involuntary work arrangement, following the COVID-19 pandemic in Sri Lanka. However, over time, the interest and interventions of human resource personnel appeared to have dwindled and many companies are waiting to revert to on-site work when the pandemic situation settles. It also appears that remote working will remain a transitory work arrangement to respond to crises or exceptional circumstances rather than a permanent work arrangement for many companies in Sri Lanka [4].

Today, Agile processes are making headway into the Sri Lankan software industry as the traditional software processes are heavy with documentation and rigid control mechanisms make it difficult in applying them to different software projects. Therefore, Agile software development methods have caught the attention of software engineers and researchers around Sri Lanka. The research was conducted to identify and provide insights into the emergence of Agile methodologies. It was also to study how the software practitioners in Sri Lanka utilize its key characteristics to succeed in software development projects while dealing with the issues introduced by rapidly changing and unpredictable markets [5].

The study on “Activating Administrative Reform Process in Sri Lanka” recognized the need to resume administrative reforms in the political, economic, and social environment. It highlighted the improvement of productivity and the delivery quality of public services. The key recommendations of the committee dealt with the improvement of financial management, work systems and procedures, and the effectiveness of the management of public enterprises [6].

The report published on “Public Administration in Sri Lanka” explained the administrative structure of Sri Lanka, the proliferation of administrative institutions since the 1970s, and the power and relationships between the present administrative institutions at various levels of the bureaucracy. It examines the management and performance of the public sector, the recent reforms introduced by the government, their impact, and emerging issues in the sector [7].

The study conducted on the “Effect of Labor Productivity on Successful Completion of Major Contracts during the COVID-19 Pandemic in Sri Lanka” aimed to identify and rank the factors affecting the lack of labor productivity in major contracts during the pandemic and to recommend management strategies to combat them. The findings revealed 19 factors to the COVID-19 challenges, including absenteeism at worksites, travel restrictions, supply chain disruptions, cash flow delays, social isolation due to teleworking, and material shortage at the site, among others. The study recommended management strategies to overcome these challenges, such as conducting risk analysis, creating an end-to-end supply chain map, and initiating flexible work schedules to promote social distancing.

Specifically for the construction sector, the recommendation is to help project managers and authorities in the construction industry understand the challenges of the pandemic and adopt effective strategies that will improve the health and safety of their workforce [8].

The recent report of the Central Bank of Sri Lanka highlighted the unprecedented impact of the COVID-19 pandemic on the labor market. It affects deep-rooted work routines and cultures due to precautionary and containment measures taken to combat the spread of the pandemic, which restricted the performance of work in the usual working environment. WFH, flexible hours, and roster systems were adopted on a broad basis. This report highlighted the challenges faced by the public sector, including issues related to ICT infrastructure, ICT literacy, and manual processes and procedures. In addition, the report highlighted that most of the public sector job functions were less suitable to perform in WFH arrangements as the public services provided to the general public should be performed in person. The report recommended that there should be a clear identification and assessment of the industries, companies, occupation types, and job functions suitable for WFH arrangements with proper legislations regarding such arrangements [9].

A study on “Flexible Working Arrangements (FWA) and Job Satisfaction of Public Sector Employees with Reference to the Post COVID-19 Situation in Sri Lanka” focused on three main objectives: (i) to identify the factors affecting employee satisfaction in the public sector; (ii) to examine the mediating effect of FWAs on employee satisfaction; and (iii) to identify the most influential factor toward employee satisfaction.

Research on “Challenges in Promoting Productivity in Public Sector Organizations in Sri Lanka” explores public opinions about services provided by DS Offices and investigated the challenges in promoting the productivity in these organizations. Many customers expressed dissatisfaction with the services provided by DS Offices as they expected higher quality service from them. Therefore, these offices should improve their work processes to provide better service. Researchers have identified several obstacles that hinder the level of productivity, including negative attitudes of the employees, insufficient nonmonetary motivation, inadequate training and development opportunities, and lack of new technologies. Also highlighted were the need for team work and inspiring leadership to improve service quality to customers [10].

The study on “Beyond the Box: A New Economic Vision for Post COVID-19 Sri Lanka” explored the need to upgrade the role of the Sri Lanka Information Communication Technology Authority (ICTA) as a key facilitator of digitalization in the country and implement its technology platform to improve digital government processes and systems. The report recommended making it mandatory to use digital tools, like email and chat, for communication among government officials and between government and citizens as well as introducing digital self-service for public services [11].

Research on the “Determinants of Organizational Change Management Success” identified the various factors affecting change management success as well as examining their relevance in the case of a Moroccan construction company. This study provided an integrated understanding of change management success based on the analysis of various organizational change models. Understanding success factors can help managers implement change initiatives in their organizations effectively [12].

The APO report on “Managing Change in Public-sector Organizations” explored numerous examples of managing change in public-sector organizations in selected APO member economies, focusing on

two broad topics: administrative reform and economic and community development. The focus of the research was on the fundamentals of change management in the public sector, including its complexity and best practices of successful organizations as case studies.

The case study on Sri Lanka described the introduction of Pension Management System (PMS) in its Department of Pensions, where the effort was to introduce efficient and effective disbursement of pensions to former public servants after retiring from the service. PMS is a result of relentless commitment of public-sector officers at the Department of Pensions (DoP) and to provide answers to pensioners' concerns. There are numerous issues to be addressed, such as internet connectivity issues in the public-sector entities, the use of outdated systems, inadequate training for data-entry officers, among others. However, the PMS should be considered as a good example of change initiated by employees in the public sector who are willing to take risks and face challenges for the betterment of the people whom they serve [13].

Another case study in the same APO report was on the initiatives taken to introduce a new performance evaluation system in Sri Lanka's public sector. It was intended at elevating Sri Lanka's public sector from a poor performing entity to an efficient and effective service provider to citizens of Sri Lanka [13].

Case Analysis: Selected DS Office Kundasale in the Kandy District

The following three topics were selected to analyze the predetermined DS Office Kundasale in the Kandy district for the Sri Lanka study:

- i) Planning Agile working place for the public sector.
- ii) Challenges and strategies in transitioning to Agile working to identify the main challenges faced when transitioning to Agile working in the public sector in Sri Lanka. This includes the culture and customs in the workplace as well as in society.
- iii) Monitoring and measuring performance.

Situation

As mentioned earlier, this DS Division must serve the general public within its administrative area and fulfill the various requirements of numerous government agencies located there and coordinating with them. Employees of these institutions and their families living within the administrative area expect various kinds of services and require to maintain close cooperation and collaboration with government and semigovernmental institutions.

According to the information gathered, the vision of the Kundasale DS Office is “Becoming the best Divisional Secretariat through good governance” and in line with that, their mission is “To provide services in accordance to the state policies, to improve the life of the people in the area through a sustainable and planned development programs/processes with the coordination of resources and public participation.”

The objectives and values of this DS Office are outlined as follows:

- Effectively guiding and coordinating the performance of all duties assigned by the Sri Lanka constitution, ordinances, and government circulars
- Preserving ecological balance in the division by maximizing resource efficiency
- Implementing the official language policy by facilitating citizens within the division
- Coordinating with relevant ministries, departments, and institutions to provide all kinds of services for disadvantaged people within the area under the DS Division

- Utilizing modern technology effectively and efficiently, empowering staff of the Divisional Secretariat to improve professionalism and well-being
- Providing optimal service delivery for the public through a better land management system
- Providing satisfactory and optimal service delivery while fulfilling the welfare needs of the internal staff
- Issuing necessary licenses to improve applicants' standard of living
- Empowering low-income earners within the DS Division to contribute to national development

The values of the DS Division were formulated in collaboration with all staff members, reflecting their contributions.

TABLE 7.2

CASE ANALYSIS THROUGH CANVAS

Situation	Issues /Problems	Solution	Result	Key Success Factors
As the local level administrative unit of the public-service hierarchy, this selected Divisional Secretary's office, Kundasale has to implement the central government policies and programs that are in line with the national plans for the benefit of the general public within the area ensuring efficient and effective service delivery.	<ul style="list-style-type: none"> • Ineffective working systems/processes • Complexity of formats to be used by the public • Inadequate information for applicants • Take a long time to issue a registration certificate • Resistance came from the staff toward change • General public has to visit a number of times to the DS office to fulfill their requirement 	<ul style="list-style-type: none"> • Introduced Agile working style transforming traditional work style • Using several innovative ways and means in the DS by senior management • Internal changes/ placement of key officers to make easy access to clients • Better coordination and consultation with the internal staff • Capacity building, awareness raising of the staff 	<ul style="list-style-type: none"> • Won the first place of public-sector productivity awards competition in 2020 • A satisfied service recipients • Saving time of the public, speedy service • Ensuring transparency by using the right technology • Changed working culture to enhance teamwork • Increased the public confidence on the effective service delivery of the DS office • Reduced complaints of the public who have to come several times to get services from the DS office • Improved follow-up work progress 	<ul style="list-style-type: none"> • Openness to obtain feedback about the processes/services • Change internal arrangements of Agile work style for speedy service delivery • Improving processes • Dedicated leadership, capable of systems to enhance productivity • A better performance monitoring and evaluation methods

Source: Office documents, District Secretariat, Kundasale.

Function of the DS Division

As the local-level administrative unit of the public service hierarchy, DS Office has to implement the central government policies and programs. In line with the national plans, DS Office also prepares an annual action plan for the implementation of these national policies and programs. Additionally, other functions delegated to the DS level by national-level ministries and departments include issuing passports, motor vehicle licenses, national identity cards, and business registration certificates. Therefore, they must improve their service delivery mechanisms to serve the general public within their administrative area, which consists of a population around 146,559 people and 41,429 families as well as the number of state and nonstate institutions in the DS Division.

TABLE 7.3**VALUES OF THE DS DIVISION KUNDASALE**

Beneficiaries/Clients	Internal		External
	Employer/Employee		
Welcoming clients to the office	Friendly, optimistic, and positive attitudes of the employees		Interagency friendly coordination
Accomplishing tasks with a smile on every occasion	Harmony between sectors and quality circles		Generosity
The satisfaction and trust of the clients can be seen at a glance because the work is carried out transparently	Collectiveness		Helpful
Humanity	Criticality		
Thriftiness	Optimism and positivity		
Equality	Providing high opportunities to the learning environment		
	Being on duty irrespective of office hours		
	KM circles come together instantly when needed and get the job done		
	Constantly encouraging suggestions and striving to improve quality through experimentation/innovation		

Source: Information gathered from the DS office.

TABLE 7.4**DETAILS OF THE STAFF IN THE DS OFFICE**

Item	Category	Number
1	Office staff	83
2	Development officers (field level)	121
3	Grama Niladhari (GN)	80
4	Samurdhi managers	10
5	Graduate trainees	398
6	Other categories	188
	Total	880

TABLE 7.5

KEY ACTIVITIES AND SUPPORTING ACTIVITIES OF THE DS OFFICE

Number	Section	Main Activity	Subsidiary Activity
1	Land	Designation of ownership and next inheritance of land	<ul style="list-style-type: none"> Conduct land <i>kachcheri</i> Conduct mobile services
2	Establishment	Maintain personnel files of the internal staff	<ul style="list-style-type: none"> Provide the work performance reports of the office staff on the due date and updating the relevant documents Upgrade the computerized system related to salary increment payment Issuance of salary forms Salary disbursement
3	Development division	Implement development projects/programs	<ul style="list-style-type: none"> Strengthening village committees Registration of contractors Preparation of project documents Project supervision Hand over the final project to the relevant institution
4	Front office	<ul style="list-style-type: none"> Issuance of: <ul style="list-style-type: none"> Business registration license Revenue certificates Valuation certificates Tree felling permits Mining permits Timber transport permits Rations Excise permits Distribution of senior citizens' allowances Grant of public allowance/medical allowance/disability allowance Disaster relief services 	<ul style="list-style-type: none"> Submission of applications by the Grama Niladhari (village level administrative officer) Issue of relevant formats/forms Provide supporting documents Provide recommendations Field inspection Issuance of licenses
5	SAMURDHI (Poverty Alleviation Program)	Empowering the beneficiaries for improvement of living standards and organizing activities/programs (economic, social, psychological empowerment, etc.)	<ul style="list-style-type: none"> Awareness programs, providing loans and subsidies programs to improve living standards
6	Social care division	<ul style="list-style-type: none"> Children's programs Women affairs Counselling services Social services 	<ul style="list-style-type: none"> Disbursement of benefits
7	Registrar's office	<ul style="list-style-type: none"> Issuance of: <ul style="list-style-type: none"> Birth certificates Marriage certificates Death certificates 	<ul style="list-style-type: none"> Preserve the copies of these certificates Issue copies of relevant certificates Counselling for newly married couples
8	National Identity Card (NIC)	Issue NICs	

Source: Information gathered from the DS Office.

Given that these key functions are related to service delivery for the general public, an Agile working style is essential to enhance the efficiency of service delivery.

Issues/Problems and Challenges

Issues and challenges in transitioning to an Agile working style in this DS Office can be categorized as internal and external issues and challenges.

Issues and Challenges Related to External Stakeholders

To identify issues related to key functions and service delivery, the DS Office regularly conducts surveys by contacting clients who seek services from this office. Further, surveys are also conducted to find internal issues among staff, resources, office culture, and issues among different sections of the DS Office.

These surveys are conducted by using various methodologies, such as referring to public complaints received through diverse sources, official web page, annual/monthly progress reports, and snap interviews with clients/service beneficiaries coming to the DS Office.

Table 7.6 displays issues detected through inputs received from external stakeholders relating to each key function/service areas of the DS Office.

TABLE 7.6

ISSUES/PROBLEMS AND CHALLENGES

Classification of Activities/ Functions	Methodology Used for Analysis	Expectations from the DS Office	Issues Identified
Tree felling permits	<ul style="list-style-type: none"> By the documents on felling of trees By data system on felling trees By the forms provided 	<ul style="list-style-type: none"> Prompt release of permits Issuance of permits in a very regular and legal manner 	<ul style="list-style-type: none"> Time taken to issue permits is too long High number of trees felling in the division that affect environment
Vehicle revenue license	Vehicle revenue license data system	<ul style="list-style-type: none"> Prompt issuance (reduction of time spent) Issuance of license in regular and legal manner 	<ul style="list-style-type: none"> A single officer has to handle issuing of many licenses per day and takes more time
Timber transportation permits	Register of timber transportation permits	<ul style="list-style-type: none"> Issuance of permit to the eligible person himself Prompt release (lesser time taken) 	<ul style="list-style-type: none"> Time taken to issue licenses is too long Long stay in the office to get permits
Business name registration certificates	<ul style="list-style-type: none"> Business name registration data system Business name registry Annual/monthly progress reports 	<ul style="list-style-type: none"> Issue certificates to all legitimately qualified persons Issue registration certificate for regular businesses 	<ul style="list-style-type: none"> Increased time taken to issue business name registration certificates Complexity of the given application Failure to provide correct information required by the client
<ul style="list-style-type: none"> Social assistance schemes Old age allowance Disability allowances Children's protection and welfare services Matters related to women development/empowerment Counselling services Social services 	<ul style="list-style-type: none"> Priority registers for each assistance schemes Data system By E-SMS service system 	<ul style="list-style-type: none"> Assist the people in need Prompt provision of the benefit according to the priority list when a person dies or leaves the area Giving assistance to the most suitable people 	<ul style="list-style-type: none"> Lack of information at village level Weaknesses of supervision by the village-level officers (Grama Niladharis) Difficulties in payment according to priority register

Classification of Activities/Functions	Methodology Used for Analysis	Expectations from the DS Office	Issues Identified
Nutritional support for pregnant mothers	<ul style="list-style-type: none"> Priority register Data system By E-SMS service system 	<ul style="list-style-type: none"> Accurate diagnosis of pregnancy Obtaining confirmation of nonreceipt of benefit package from other locations Identifying the correct person Providing benefits to all within the specified time 	<ul style="list-style-type: none"> Inability to provide the nutritional pack within the prescribed period Nonconfirmation of receiving package at two locations Unable to accurately confirm the period of pregnancy

Land Matters

<ul style="list-style-type: none"> Delivery of deeds Land tax collection Distribution of lands 	<ul style="list-style-type: none"> Daily public service evaluation form Monthly progress report Annual performance reports Public complaints register 	<ul style="list-style-type: none"> Issuance of permits in a regular and legal manner Issuance to the designated person himself Prompt issuance (reduction of time spent) 	<ul style="list-style-type: none"> Boundary disputes over land Rapid increase in the population of the division due to increased fragmentation of land Information related to squatters Constant problems with follow-up systems No legal titles for land Request from clients who do not legally own land
Development programs	<ul style="list-style-type: none"> Two-day service evaluation model By means of SMS 	<ul style="list-style-type: none"> Expeditious issuance of permits Accuracy Reducing the number of frequent visits to the office Increase public satisfaction Prompt execution of tasks within the accounting period Reduction of time from completion of tasks to payment 	<ul style="list-style-type: none"> Delays in processing documents Number of visits to the people to complete their requirements

Source: Information gathered from the DS Office.

According to Table 7.6, many issues/problems related to the services of the DS Division are related to existing working systems/processes. Mainly, the complexity of formats used by the public who seek services leads to multiple visits - to collect applications, get clarifications about the requirements, and handover the applications for getting permits/certificates/licenses. Due to the complexity of formats/applications, DS Office receives incomplete applications and requests with inaccurate and insufficient information to process their request/applications.

During KIIs with office staff, it was revealed that a high number of clients waiting and disarrangement of the office layout contributed to the delays in processing applications. Internal document arrangement issues and supervision weaknesses by the village-level officers (Grama Niladhari) were also identified.

Issues and Challenges related to Internal Stakeholders/Senior Staff/Office Staff/Field Officers/Other Staff of the DS Office

During KII with the Divisional Secretary, it was revealed that there were a number of challenges faced when transitioning traditional work style to Agile working system. The challenges were highlighted on several occasions before they were overcome.

When explaining the necessity of setting up the front office to address public complaints about inefficient services and long waiting times, officers responsible for those duties initially resisted changing their existing places in the office. Similarly, when instructed to place subject officers and development officers together, office staff expressed their unwillingness to change workplaces, in addition to giving various excuses to avoid such changes. However, the Divisional Secretary was able to change their mindset and attitudes by educating them on productivity concepts and creating favorable working environment and culture by conducting workshops and forming quality circles to encourage innovation.

Similar resistance arose when attempting to change the vision and values of the DS Office due to lack of knowledge and negative attitudes. However, after conducting several sessions engaging competent resource persons, a reachable and measurable vision and values statement was formulated, demonstrating dedicated leadership paving the way for success.

Solutions

How the DS Office Met Challenges and Strategies

i) Planning of Agile working style in this DS Division

Planning of Agile working style in Kundasale DS was started by the senior management in 2016, in coordination and consultation with the internal staff through various means.

- Educating staff, clients, and other parties about the vision, mission, values, goals, objectives, and targets of the DS Office
- Raising awareness through internal staff meetings and progress review meetings. Apart from DS Office website announcement, display boards were placed on every desk

ii) Designing a strategic plan and annual action plan

The organization has a strategic plan aligned with national-level ministries and department, forming an annual action plan based on previous year's data and input from all sections, including complaints, proposals, and appreciations received from external parties. Responsibilities and supervision are assigned to each section and officers are given clear job description and evaluation mechanisms.

iii) Providing job description to each officer to ensure accountability

Job description and written explanation of all duties are made available to all officers to ensure they understand their responsibilities and accountability. This includes formal assignment of duties, encompassing the work coverage, substitute work, field visits as well as instruction manuals for each subject/function. Further instructions are given to the staff by the senior management at the working group meetings, field officers' meetings, general staff meetings, among others. A mechanism has been introduced for progress evaluation and corresponding work performance of each section/officer.

iv) Setting up basic workspace to increase productivity with Agile work style

In coordination with the internal staff and considering the suggestions made by the staff members to improve the efficiency of work/ services, the entire office layout was changed.

A front office was established with the aim of providing a more effective service to prevent client inconvenience, such as clients having to go to different sections or officers to get services and having to make unnecessary visits to the DS Office.

Recognizing the suggestions from the internal staff, the Divisional Secretary and senior staff implemented additional changes in the office, demonstrating a responsive management approach.

A few examples are given in Table 7.7 on the management implementing internal staff' suggestions to make changes in the workplace.

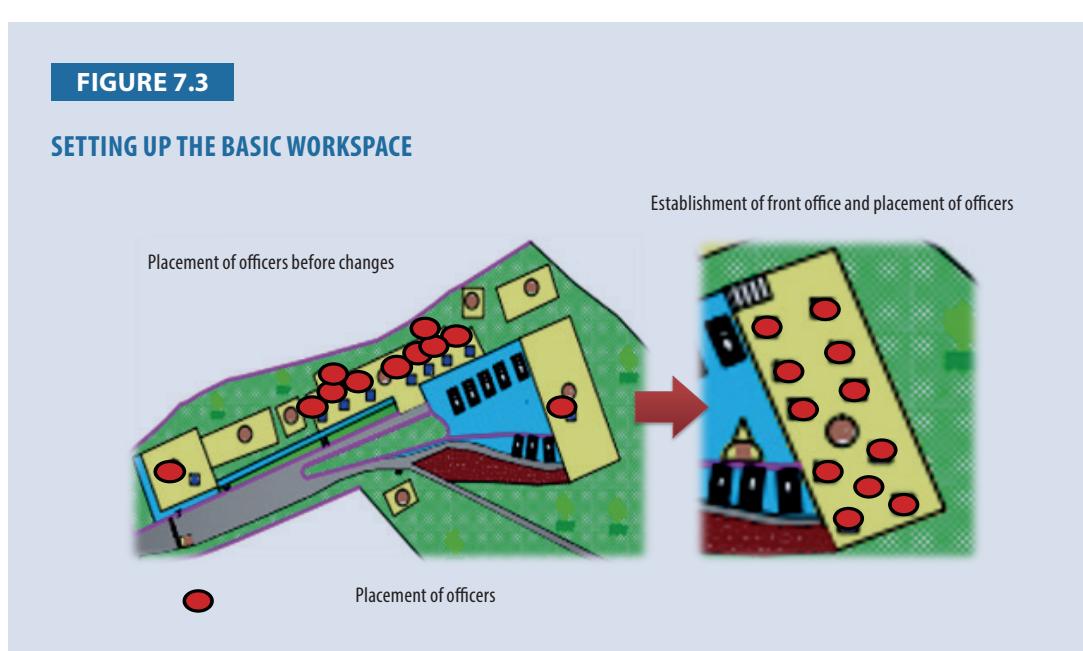
TABLE 7.7

SUGGESTIONS OF THE INTERNAL STAFF TO MAKE CHANGES IN THE WORKPLACE

Suggestion	Response
Realizing that the location of the Divisional Secretary is far from the front office that makes it time consuming for the clients/public	Placed Divisional Secretary and Assistant Divisional Secretary closer to the front office
Establishment of stationery store in the vehicle yard to ensure safety of materials	Moved stationery store to a safer place
Separation of the technical officer's section from Planning assistant director's office would make it difficult to carry out work expeditiously	Bringing the technical officer's section into the development section

FIGURE 7.3

SETTING UP THE BASIC WORKSPACE



v) **Establishing a staff system for suggestions and ideas to increase the efficiency and effectiveness of Agile working process in DS Office**

The Divisional Secretary conducts monthly meetings and steering committee meetings providing opportunities for subordinates to express ideas and suggestions. A system for appreciating officers and publicly recognizing innovative suggestions fosters a bottom-up approach, encouraging all officers' engagement and satisfaction.

vi) **Establishing quality circles/cross-functional teams/performance development circles within the organization**

There are 20 well-organized quality circles in this office at the time of conducting this study, practicing a system to evaluate innovative suggestions from the staff and activities to achieve the goals of the DS Office.

A special evaluation program is in place to select the best quality circle project, implement good suggestions, and special recognition and appreciation given to those who perform well. The management has also provided necessary resources for implementing creative suggestions to

improve the efficiency of work processes. During this assessed period, these quality circles have initiated 38 programs to enhance office productivity through Agile working methods.

A special Knowledge Management (KM) circle was set up to face unexpected challenges, such as during the recent Covid-19 pandemic, religious conflicts in the area, and natural disasters, like landslides. The KM unit is the focal unit to organize emergency services in coordination with other stakeholders, which allows to speed up relief services in any emergency situation in the area.

TABLE 7.8

TAKING NECESSARY MEASURES TO MANAGE LIMITED RESOURCES TO ENHANCE EFFICIENCY AND OVERALL PRODUCTIVITY OF THE ORGANIZATION

Human Resource	Physical	Financial
<ul style="list-style-type: none"> When officers are on leave, tasks are still successfully completed by substitute officers using IT The IT quality circle conducts maintenance of office computers and other electrical devices The Divisional Secretary and other officials contribute resources for office programs Special events arrangements, announcements/decorations, and technical matters are handled by office staff, reducing unnecessary cost on outsourcing such activities All work is accomplished by the limited staff available, even in the presence of vacancies 	<ul style="list-style-type: none"> The only reserved vehicle available for fieldwork is utilized for emergency needs of all officers Use of meeting hall on an exchange basis as appropriate Both sides of disposable paper are utilized to reduce waste Reduction of unnecessary movements (minimizing movement of files/vouchers) 	<ul style="list-style-type: none"> To minimize expenses, programs delivered in multiple locations utilize IT methods to reach multiple audiences simultaneously Office staff set up necessary data systems to avoid extra expenses by outsourcing such requirements Water needed for the office is obtained from the well located in the office premises Only one office vehicle is used when officers attend multiple functions within the same area Letters are manually delivered to institutions close to the DS office To minimize cost, letters are arranged to be delivered at the village level by the Grama Niladhari (village-level administrative officers) To make quality circles financially viable by selling all waste papers to the local council

Source: Information gathered from the DS Office.

vii) Client identification and quantitative analysis

To analyze client needs and expectations, surveys are conducted using several methodologies. An officer has been appointed as the Public Relation Officer to oversee these surveys and leverage on IT for daily data collection from clients visiting the office.

viii) Process improvement driving to achieve organizational goals

To speed up the service delivery, officers under the guidance of the Divisional Secretary prepare and provide the checklists for applicants seeking business registration certificates, national identity cards, and tree felling permits and tree transportation, among others in simplifying all application forms. Instructions are provided to all sections of the DS Office to use simplified formats and to provide friendly assistance, especially for illiterate clients.

As the area comprises several ethnic groups, two reception officers who are proficient in Sinhala, Tamil, and English languages are placed to facilitate communications.

Arrangements have been made through Agile working system to issue licenses, national identity card, and vehicle registration licenses within one day, providing applicants with a road map and necessary instruction sheet for expedited service.

ix) Use of technology

Technology serves as a tool to enhance productivity in implementing Agile working systems. The selected DS Office has appropriately utilized IT in implementing programs and activities while the IT quality circle has created all required databases, programs, and codes for the DS Office without unnecessary expenditure.

The Staff Welfare Society has funded the E-SMS services (5,000 SMS per month) for the convenience of office work and to offer speedy services to the clients. This SMS service updates clients the status of their requests (completion of client's work, collection of permits/licenses, etc.) while the daily mail software expedites mail distribution, and maintains personnel files.

Twitter messaging system (now known as X) is used to send important messages to internal staff of the DS Office, whenever necessary. A special electronic circuit is implemented to allow office assistants to promptly send files from the front desk to the required location, reducing delays in moving files.

One of the interesting features of the DS Division is keeping a well-organized record room by using appropriate IT technology with the optimum use of limited resources.

The office website is regularly updated to provide necessary information and receive public comments and suggestions while maintaining confidentiality. Introduction of a QR code system and official social media channels, such as Facebook and YouTube, further facilitates public interaction and access to information.

x) Encouraging creativity and innovation by the organization

The Divisional Secretary and senior staff continuously support quality circle projects, encouraging officers to propose innovative ideas. This motivation fosters a culture of creativity and innovation among the staff, enhancing productivity by providing customer-friendly, speedy services.

Due to the prevailing economic situation of the country, public-sector organizations receive limited financial allocations from the government budget and restricted new recruitment. Therefore, public institutions must use existing resources productively. As a public-sector institution, DS Office has also faced such difficulties but the innovative suggestions through quality circles, especially IT quality circle and KM quality circles play a key role to maximize limited resources efficiently.

xi) Capacity building for staff

The higher management identifies and engages staff based on their abilities, skills, creativity, and competence for various activities. They implement human resource development and training plans designed to address organizational needs both long term and short term. Aligned with the organization's strategic plan, the human resource development plan guides toward relevant training and capacity-building programs. It prioritizes personal development, taking individual requirements into account. Training is provided to officers for specialized tasks, including workshops on languages, computer skills, community productivity, and event management.

Additionally, productivity training methods are offered to enhance overall organization productivity, along with experience exchange programs, benchmarking exercises, and theoretical and practical training sessions.

xii) Promoting work-life balance for officers

The office's higher management consistently encourages and guides the development of second-line leadership, offering opportunities for young officers to assume leadership. The Divisional Secretary took steps to strengthen and maintain the welfare associations of the office. This involved reorganizing the officer's welfare association, increasing its financial and other assets, and introducing several new benefit schemes for staff members through the welfare association. These schemes include loan facilities, increasing the number of benefits during times of distress, sickness benefits, and annual social events/functions.

Results

In 2020, the DS Office received the first place in the public-sector productivity award at the Sri Lanka Productivity Award Ceremony. It was recognized for its effective and efficient public-service delivery. The adoption of Agile work practices since 2016 has led to time savings for the public, transparent and speedy service delivery, and increased public confidence, which resulted in a reduction of complaints against the office.

Furthermore, the DS Office has cultivated a supportive work culture conducive to the successful implementation and sustainability of Agile work style. Despite initial challenges, the leadership's efforts to raise awareness and inspire staff have transformed their mindset and facilitated the achievement of office targets through Agile work system.

Currently, the DS Office serves as a learning and experience-sharing center for other public-sector organizations seeking to benchmark best practices.

Key Success Factors

The findings of the Sri Lanka case analysis highlight the following key success factors for this DS in transitioning to Agile work style. These factors serve as benchmark for similar public-service organizations seeking to enhance productivity.

Change Internal Arrangements of Agile Work Style for Speedy Service Delivery

To achieve speedy service delivery, it is crucial to change internal arrangements to embrace Agile work style. It can be achieved the following ways:

- Develop a clear vision and mission shared with the staff
- Office staff's willingness and preparedness to adopt internal changes
- Equipping staff with the skills, knowledge, and competencies needed for managing change
- Hierarchical setup for productivity improvement
- Office layout and placement of officers are changed to improve the Agile working style
- Formation of quality circles (IT circle, Green productivity circle, Welfare circle, KM circle) to improve communication, and innovative idea and information sharing among staff

Openness to Obtain Feedback on Processes and Services

- Initiated a system to obtain suggestions and views from clients and beneficiaries for effective service delivery
- Conducted surveys to gather details of clients' visits to the office for all purposes (number of visits, purpose of visits, etc.) and identify delays/gaps in service delivery
- Identified gaps/delays within different sections of the DS Office as well as subject-wise issues in the service delivery, such as issuance of licenses, land issues, and social assistance
- Provided clients with the opportunity to make complaints and/or suggestions via DS Office webpage

Improving of Processes

- Introduced an Agile working system, simplified processes, checklists, value-added formats, and using email for information sharing, among others
- Utilized technology (E-SMS, YouTube, WhatsApp, database, webpage, Facebook, E-mail) to provide speedy service
- Established a customer-friendly communication system E-SMS service to assist beneficiaries
- Designed a QR code system for easy accessibility to information on services

Dedicated Leadership Initiating Innovative Systems

- Effective and constant communication and knowledge sharing with internal staff
- Implementation of staff welfare measures and contribute to improvement of office infrastructure
- Encouragement of sports, cultural, and religious activities to improve teamwork, cooperation, and harmony as well as a stress management strategy
- Introduced systems to recognize and appreciate officers and subordinates involved in transformation as a way to motivate them for continuing improved performances
- Identified skills and competencies of internal staff and utilize their competencies in the right way to enhance productivity
- Encouragement of staff engagement in CSR programs, such as constructing housing units for needy families, improving schools' infrastructure facilities, and conducting special teaching sessions for school-going needy children to prepare them for public examinations

Better Performance Monitoring and Evaluation Method

- A sector-wise and individual performance monitoring system is available by introducing a contract agreement between the Divisional Secretary and subordinate officers, setting targets to achieve quarterly/annually
- Recognition and appropriate appreciation of officers and subordinates involved in the related improvements to motivate them for continuing better performances
- Capacity development of the staff according to the training needs analysis to continue Agile working style using technology

Monitoring and Measuring Performance

Table 7.6 highlights the methods implemented by the DS Division to identify clients' needs, expected services from the DS Office, and issues encountered in getting services from the DS Office.

To measure the success of the Agile work style implemented for the satisfaction of both employees and clients and the overall performance of the organization, the DS Office has implemented creative system in various ways.

Sector-wise and Individual Performance Monitoring and Evaluation Systems

Each section must achieve targets assigned according to the annual action plan prepared in line with the five-year sustainable development plan of the DS Office. The Divisional Secretary officially shares this annual action plan and set targets for the officers of each section in January every year, considering it as the performance agreement between the head of the institution and the officers. The progress of the annual action plan is then taken as a performance report of each section of the DS Office, continuously implemented since 2018 to measure performance.

Individual work performance is considered separately, according to the initial agreement and measuring individual performance is based on key performance indicators (KPIs) during annual performance

appraisals. Achieving targets by an individual officer is monitored based on the KPIs and evaluated according to the rank of very good/good/satisfactory.

Annual Evaluation of Performance through Officer's Appreciation Program

The annual evaluation of performance for all sections and officers is conducted through the Officer's Appreciation Program. Mechanisms are available to appreciate the contribution made by the staff to enhance the productivity of the organization. The "Niladaru Abhiman Programme" (Officer's Appreciation Annual Program) aims to select the best section of the DS Office by conducting intersectional performance competition program, which includes the selection of the best officer of the year, best quality circle, the most creative project, among others.

The individual performance appraisal system provides opportunities for officers to receive letters of appreciation, awards, and commendation during the annual performance evaluation events. This motivates DS Office staff to improve productivity.

Additionally, these methods help to evaluate staff satisfaction through their personal views, annual survey reports, and continuously obtaining input from the staff.

Discussion

There are very few descriptive research done on Agile working style in the public sector. However, at the National Productivity Award, winners have advanced and/or transformed their working styles to improve productivity of their service delivery systems.

Public-sector organizations have faced difficulties in adjusting some modalities of Agile working styles, such as WFH or flexi hours, due to issues related to ICT infrastructure and ICT literacy. Additionally, since manual processes and procedures in the public sector must be performed in person, challenges arise in selecting appropriate technology successfully.

However, the National Digital Strategy 2030 of Sri Lanka involves ensuring innovation, entrepreneurship, and digital skills to promote sustainability and inclusiveness in the digital economy. This is to ensure that no one is left behind and that all citizens benefit from the opportunities provided by the digital revolution. This will also create opportunities to strengthen technology usage in all public- and private-sector organizations to align their journey with forward-looking strategies. Hence the public-sector service delivery organizations intending to transform to Agile work system will benefit from this policy to meet future challenges.

In-person interviews with Divisional Secretary and staff of all sections during this research revealed that leadership qualities to initiate innovative systems, openness for obtaining feedback from the general public, process development, and team work are all key success factors.

These findings illustrate the effectiveness and efficiency of public-service delivery can be successfully achieved through transforming to an Agile working system. However, the sustainability of an Agile working system depends on the dedication of all staff who are motivated by right methods and mainly on the proper guidance of leadership. Further, this case analysis clearly demonstrates the importance of effective monitoring and evaluation of performance and accountability of staff at every level to ensure continuation of innovative systems in the office, its sustainability, and improvement of productivity. This research findings validate the research issues and the topic of the research "Productivity Improvement by Agile Working System".

The selected case, Kundasale Divisional Secretariat, won the first place of the 2020 Productivity Award at the Sri Lanka Productivity Award ceremony, selected from the island-wide competition among the Divisional Secretariats.

The Divisional Secretary of this division is a hardworking and innovative individual who can lead her team by encouraging and motivating staff to provide services for the betterment of the public within this DS Division. Her team continuously strives to implement innovative changes to improve the Agile working system they currently follow, enhancing the productivity of the organization.

Policy Implications and Recommendations

In “Future Work”, five principles are outlined to assist organizations in transitioning to Agile working successfully [14]. These principles, summarized by the mnemonic “TRUST”, signify a new management approach for many organizations, necessitating the development of new skills, as described below:

- T - Trust your people
- R - Reward output, not input
- U - Understand the business case
- S - Start at the top
- T - Treat people as individuals

When implementing an Agile working program, it is crucial to prioritize principles, such as staff expectation of leadership, trust, guidance, and recognition for their achievements and performance. Without trust, Agile working may negatively impact staff and their working relationships, leading to poor motivation and decreased performance [14].

Additionally, monitoring and evaluating organizational performance are key success factors for Agile transformation. Lessons learned from previous practices and feedback from clients can help to frame better future strategies and ensure sustainability. This findings offer an opportunity to assess the effectiveness of existing strategies and approaches in delivering expected outcomes.

The government should implement suitable mechanisms to recognize and reward high performers, encouraging them to continue best practices. Providing opportunities for overseas training and allocating sufficient human and financial resources for service improvement are essential. In that way, organizations that are already implementing Agile work styles can strive for continuous improvement, recognizing transformation is an ongoing process.

Robust policies on digital technology and developing officers' skills in innovative technology are critical for successful Agile work styles to strive for ongoing improvement, recognizing that transformation is an ongoing process.

Conclusion

Findings of the Sri Lanka case analysis highlighted the key success factors that helped to overcome the challenges in transitioning Agile work style in this DS Office, enhance the satisfaction of internal and external stakeholders, develop a favorable work culture, and the ways Agile working system successfully contributed to improve the productivity as a public-service organization. These key factors for a successful Agile transformation will be a benchmark for similar public-service organizations to enhance productivity of their organizations.

CHAPTER 8 : TURKIYE

THE ROLE AND CONTRIBUTION OF COMPETENCY AND DIGITAL TRANSFORMATION CENTERS (MODEL FACTORIES) IN TURKIYE

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Abstract

Increasing productivity in production and accelerating the digital transformation process are two pivotal agendas for Turkiye's development path. In a real production environment where there is freedom for error, the Competence and Digital Transformation Centers (Model Factories) aim to provide flexible training and consultancy services that enable the teaching and dissemination of productivity-based transformation through experiential learning. By combining Agile way of working with digital transformation and through Model Factories, companies can optimize production processes, minimize waste and downtime, and increase overall efficiency while swiftly responding to changing customer demands and market conditions. Agile manufacturing is a journey, not a destination. Through the trainings provided in Model Factories across various regions of Turkiye, companies adopt Agile culture and bolster productivity by implementing Agile frameworks within their enterprises. This situation fosters proactive response to customer demands, which ensures timely fulfillment of customers who are seeking agility.

Introduction

During the Fourth Industrial Revolution (IR4.0), revolutionary developments have brought about significant transformation in employment and labor demand.

The most important elements of IR4.0 are speed (industrial development), breadth and depth (digital revolution), and system impact (structural change). Another important element is the ICT infrastructure, making it possible to realize smart production and the creation of new business models [1].

Agile organization in businesses is a way to facilitate timely response to changes in the environment, such as changing customer needs and technological developments.

In Turkiye's industry and technology sectors, studies have been initiated to ensure companies keep pace with developing new technologies. In this context, Model Factories have emerged as a means to instigate Agile cultural change within the sector.

Model Factory studies were first initiated in 2015 under the coordination of the Ministry of Industry and Technology [2].

Four primary policy documents have been prepared to support the need for transformation in this area:

- i) 10th Development Plan: Priority Transformation Program for Increasing Productivity in Production.
- ii) Productivity Strategy and Action Plan (2015–18).
- iii) Industrial Strategy Document (2015–18).
- iv) Small and Medium-Sized Enterprises (SMEs) Strategy and Action Plan (2015–18) [3].

Thanks to practices in the Model Factories, established and continuing through public-private partnerships (PPP) in line with the above policies, significant advancements are taking place in terms of increasing the productivity of Turkiye's industrial sector. In this way, with the applied trainings imparted to companies in Model Factories, there will be a shift from traditional methods to Agile methodologies. Thus Agile cultural change will be achieved in companies.

Lean manufacturing is often regarded to be a precursor to Agile. Many Lean practices are also enablers for Agile manufacturing. For example, manufacturing in small batches (or even better-manufacturing, one-piece flow), fast changeovers, and a culture of continuous improvement lay the foundations for Agile manufacturing [4].

The relationship between Agile manufacturing and digital transformation is interconnected. Together, Agile production and digital transformation empower companies to reach heightened levels of performance, where they can respond quickly to changing market conditions while ensuring high standards of quality, productivity, and customer satisfaction.

With the applied training and consultancy services it provides, Model Factories aim to reshape the existing structure of enterprises in terms of continuous improvement, Lean production, digital transformation, among others, and use human, machinery, equipment, raw materials, materials, time, and energy resources efficiently.

While reviewing their digitalization strategies, organizations will need to create a roadmap and budget approach that supports their employees to acquire different skills. This topic, of course, has two aspects:

- Organizations supporting employee adaptation and skills development within their digitalization strategies
- Employees should change their perspectives for their individual development, have learning agility, and closely follow the dynamics of the changing business landscape

Organizations that ignore the employee perspective in these roadmaps and fail to allocate a portion of the digitalization budget to enhancing employees' digital capabilities will have difficulty in achieving the agility, efficiency, and goals they want to achieve with digitalization.

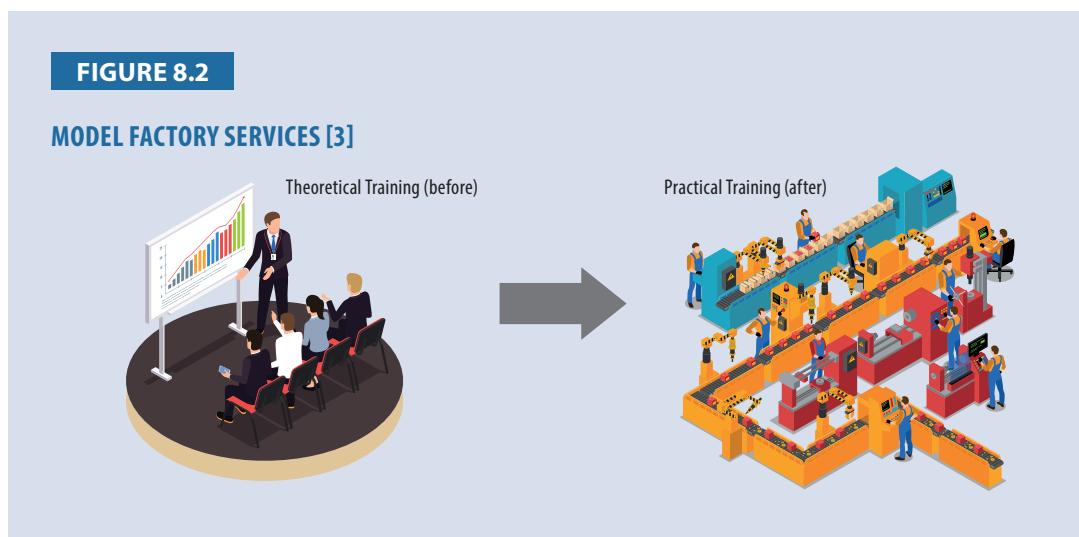
Focus and Scope of Case Study

Improving the knowledge and skills of personnel and managers employed in SMEs, which constitute a large proportion of enterprises in Turkiye, in areas, such as productivity improvement, quality improvement, product development, problem-solving, and process improvement is crucial for boosting business performance. To address this, applied trainings are being developed to enhance the practical skills of the workforce, foster better learning in experimental environments, and quickly equip relevant parties with new skills.

Through PPP and national and international funds, eight Model Factories have been established in Adana, Ankara, Bursa, Gaziantep, Izmir, Kayseri, Konya, and Mersin. Model Factory installation works are underway in Denizli, Eskişehir, Kocaeli, Malatya, Samsun, and Trabzon [2].



The trainings given in Model Factories are conducted practically on real line setups encompassing production, product assembly, and testing processes [5]. Programs based on experiential learning principles, which is the most permanent learning method in Model Factories, are carried out with 65% practical training and 35% theoretical training. This approach allows participants to experience both efficient and inefficient production in the same environment and observe the results through application scenarios [5]. Within the scope of Model Factory services, lessons are initially delivered in a classroom environment, followed by practical application and reinforcement on the actual production line.



In the case study, companies using traditional activity methods in Turkiye's industrial sector have found it increasingly challenging to meet customer requirements at the desired level due to evolving technologies.

In the face of this developing landscape, it has become inevitable for companies to undergo an Agile cultural transformation. In this context, with this Agile regulation in the field of industry and technology, flexible trainings are provided in Model Factories for enterprises in Turkiye, thereby enabling them to meet customer expectations in an Agile manner.

Agile working styles in enterprises are facilitated by various trainings and programs aimed at adapting to new technologies, promptly meeting customer expectations, and addressing the problems experienced.

Model Factories have five different activities tailored for different purposes.

- **Awareness trainings** - These short-term trainings aim to increase participants' understanding and awareness of the Model Factory's service areas
- **Experiential trainings** - These trainings combine theoretical and practical methods within the framework of experiential learning principles and thus provide higher retention rates compared to capacity building programs that are based solely in classroom trainings. Participants acquire the knowledge and competencies in the theoretical training given in the classroom, which are reinforced with the applications made in the learning line
- **Learn-Transform Programs (field-classroom applications)** - This is a program focusing on Lean and digital transformation, allowing participants to implement changes in their own businesses with consultancy support after receiving awareness and experiential trainings. The duration of the program varies between 3–4 months and leaders of transformation projects in businesses participate
- **Project application** - In this business-specific application, the Model Factory is used as the competence development and/or problem-solving hub transforming projects. It is a type of service tailored and implemented specifically for businesses, depending on demand. In business-specific consultancy work, the efficiency-related problems of a business are identified and efficiency-enhancing techniques and approaches are applied to solve these problems
- **Collaboration activities** - Model Factory facilitates academic (undergraduate to graduate courses and internship applications, among others), scientific (research project, thesis work, etc.), and application (joint project development, joint activities, etc.) activities in cooperation with universities, research institutions, and nongovernmental organizations. The technical and administrative capacities of Model Factories are leveraged within the scope of cooperation activities carried out through protocols signed between the parties [6]



Lean and digital transformation are directly related to agility. These practices cannot be realized without implementing Agile working style. Flexible practices are explained in the trainings given in Model Factories and the trainings are tailored to suit each company's needs. Increased productivity observed in companies as a result of the trainings provided in Model Factories training show how suitable this practice is for the Agile working style. Based on this point, this chapter analyzes national and international literature and policy documents.

Literature Review

The 10th Development Plan outlines the various factors contributing to the low productivity growth in Turkiye's economy, as the following:

- Small companies lack sufficient incentives to grow and therefore missing out on economy of scale benefits [7]
- Weak inter-enterprise interaction has prevented the strengthening of value chains to the extent required. In Turkiye, the labor productivity level of large-scale enterprises (250+ employees) is approximately 5.5 times higher than that of small-scale enterprises (1–19 employees) [7]
- Insufficient capacity to develop and utilize technology, and low average labor quality are other significant reasons for low productivity. In this context, in addition to efforts to improve the perception of productivity, it is recommended to carry out activities to promote institutionalization, improve production processes, and reduce scale problems [7]

In the 11th Development Plan, it was proposed to establish Competence and Digital Transformation Centers in Organized Industrial Zones and Technology Development Zones. These centers would offer experiential training and consultancy services in the field of digital transformation in priority sectors, carry out awareness-raising activities, and contribute to sectoral advancement [8].

The 2015 Investment Program included the "Applied SME Productivity Training Center (Model Factory) Project".

Within this scope, three main activity groups were identified:

- i) Analysis for the establishment of the Model Factory.
- ii) Identification of Suitable Model(s) to establish a Model Factory in Turkiye.
- iii) Development of a detailed business plan, including investment cost estimates, and preparing the training modules required for the operation of the Model Factory [9].

With the services received from the Model Factory (such as Learn-Transform Programs and Awareness Trainings), indicators, such as cycle time, batch change time, inventory level, reduction in scrap/waste amounts, increase in production per capita, and capacity utilization rate directly contribute to green transformation. These contributions are described through company experiences, as the following:

- **Resource efficiency** - Shorter cycle times, lower scrap rates, and shorter model replacement times enable more efficient use of resources in production processes, thereby reducing the use of resources, such as raw materials, energy, and water. This helps in conserving natural resources and minimizing waste generation. Companies participating in the Learn-Transform Program have witnessed cycle time improvements of between 30% and 80% [10]
- **Waste reduction and environmental impact** - Reduces the amount of waste in production processes. In addition, the amount of stock is minimized by eliminating waiting times, excess stock, and unnecessary processes in the production process. It has been observed that the scrap rate has increased between 20% and 90% in companies participating in the Learn-Transform Program [10]

- **Flexible production and short lead times** - A production line designed with tools, such as short cycle times, Jidoka (autonomy), and Single-Minute Exchange of Dies enables faster response to customer demands. This enables on-demand production and reduces stock levels. In companies participating in the Learn-Transform Program, batch changeover time improved by 50% to 70%, and at the same time, it was observed that the number of parts in the line Work in Progress (WIP) decreased by 47% [10]
- **Innovation and continuous improvement** - Fast and flexible production processes facilitate the implementation of new technologies, more efficient methods, and innovative ideas. This contributes to the development of innovative sustainability-oriented solutions and the advancement of green transformation. A company participating in the Learn-Transform Program increased the speed to market its products by utilizing the space opened up by the installation of a flexible assembly line as a new product commissioning and R&D area [10]
- **Employee engagement and awareness raising** - Through training and awareness programs, employees are encouraged to understand environmental impacts, reduce energy and resource consumption, and contribute to sustainability practices. In one company that participated in awareness programs, the number of employee suggestions increased by 65% [10]



Model Factory methodologies play a critical role for a sustainable future both environmentally and economically, by contributing to the achievement of enterprises' green transformation goals [10]. With the services it offers, Model Factories also impact areas, such as climate change and the Green Deal, acting as an interface in the transformation of the sector in accordance with international legislation. The practices to be carried out by Model Factories, especially the Learn-Transform Program, will lead businesses to use more environmentally friendly and sustainable production methods. Thus it will be possible to realize a sustainable productivity transformation that includes digital and green transformation [11].

Model Factories, which provide services to increase the competitiveness and productivity of enterprises, will continue to support enterprises in strengthening their financial balance sheets through increased productivity and healthier inclusion in the financial system, integration into national and international value chains, establishing partnerships and collaborations at national and international levels, digitalization of production and management systems, and more effective use of human capital [12].

The SDGs, which were submitted by the member states of the UN to the United Nations General Assembly for approval in 2015, entered into force at the beginning of 2016 and aim to eradicate poverty and ensure that all people live in peace and prosperity. Aimed to be achieved by 2030, the scope and scale of the SDGs are very wide, but there are many areas where the private sector can contribute to the realization of the goals [12].

Model Factories are believed to have the potential to contribute to the achievement of the following eight SDGs:

- **SDG 1: No Poverty** - The services provided by Model Factories will increase the productivity gains of SMEs, expand their manufacturing base, and enable them to meet higher levels of workforce in the medium and long term. This shows the potential of the services to be provided by Model Factories in terms of accessing economic resources and basic services for all men and women, especially for the vulnerable segments of the society
- **SDG 5: Gender Equality** - It is thought that Model Factories, which can easily reach businesses in the industrial sector, can first expand their pool of trainers and consultants to prioritize the empowerment of women and prioritize this issue in the services they will provide. In addition, it is considered that Model Factories can organize social assistance activities to identify SMEs with female managers and key female personnel, and incentive programs can be designed for this target group
- **SDG 7: Affordable and Clean Energy** - Model Factories, with its primary goal is to increase efficiency in enterprises, can expand their services in the field of energy efficiency in the short and medium term, and contribute to SDG 7 in increasing global energy efficiency
- **SDG 8: Decent Work and Economic Growth** - Model Factories increase their productivity by focusing on businesses in the labor-intensive and high value-added production sector, thus contributing to the growth of businesses and directly contributing to SDG 8 by providing decent work opportunities
- **SDG 9: Industry, Innovation, and Infrastructure** - Within the framework of this goal, Model Factories improve the technological capabilities of industrial sectors in countries by encouraging innovation in terms of production techniques and digitalization
- **SDG 12: Responsible Consumption and Production** - While Lean production principles contribute to companies getting rid of waste, they also ensure quality. The main idea behind this system is to work nonstop to eliminate waste in the production process, in other words, to eliminate activities that do not add value to the goods or services produced. Model Factories serve SDG 12 as there is room for continuous improvement in Lean manufacturing principles
- **SDG 13: Climate Action** - Within the scope of the EU Green Deal declared in 2019, it is considered that Model Factories can expand their services on green transformation and sustainability in order to support the adaptation process of SMEs. In this context, it is thought that Model Factories can raise awareness in businesses about climate action and contribute to the development of human and institutional capacity
- **SDG 17: Partnerships for the Goals** - Model Factories, established in a public- and private-sector partnership structure, can bring together all stakeholders and serve as an important interface for potential partnerships to be established between ecosystem actors. In addition to the SDGs, it is

thought that Model Factories can expand their service range to contribute to other SDGs by adhering to responsible business practices [12]

Changing environmental conditions along with technological developments have increased the need for change, especially in the fields of production and management. This has led to the emergence of Agile production. With Agile production, businesses rapidly adapt to change and increase performance by closely following the innovations required by change. Innovation is of great importance at the point of following the change. Businesses will be successful, especially in observing technology-based change due to their innovation capabilities. With Agile production, businesses can adapt quickly to changing market conditions by having both human and technological flexibility [14].

Agile production involves skilled personnel. It emphasizes information systems and employees. The teams formed can manage their own work independently of senior management. A highly effective approach is applied in the use of technology. Agile production continues product development on a weekly basis and cares about the quality of the product after-sales and applies cooperation in all stages of production [15].

In terms of today's organizations where organizational agility, Agile transformation, and digitalization are discussed, Model Factories stand as an application that can guide the transformation journey of Turkiye's businesses. It is important for businesses to access opportunities before their competitors by using innovation and change dynamic capabilities. Organizations need to maintain close relationships with customers, suppliers, and R&D partners and observe the best practices in the sector in order to perceive new opportunities quickly. One of the objectives of Model Factories is to mobilize the dynamic capabilities within the enterprise and to create "new" capabilities needed for rapid operational adaptation in rapidly changing environmental conditions [16].

The management of Agile working is currently one of the foremost topics in leadership, technology, and project management. Agile working left behind its origin in software development and led to new Agile leadership and management techniques as well as innovative process models for project management. Today, even large companies that once followed traditional product realization processes are changing to Agile process models in order to keep pace with societal and customer needs and come up with innovative products. The benefits of Agile working are based on dedicated structures that interact closely with each other and the customers, and have the freedom to work self-organized [17].

Agile organizations should spread organizational agility, workforce agility, and system agility. Organizational agility has four fundamental skills: responsiveness, flexibility, speed, and competence. This means that all employees need to change their actions by implementing adequate information systems, precise and fast instructions, and support from top leadership.

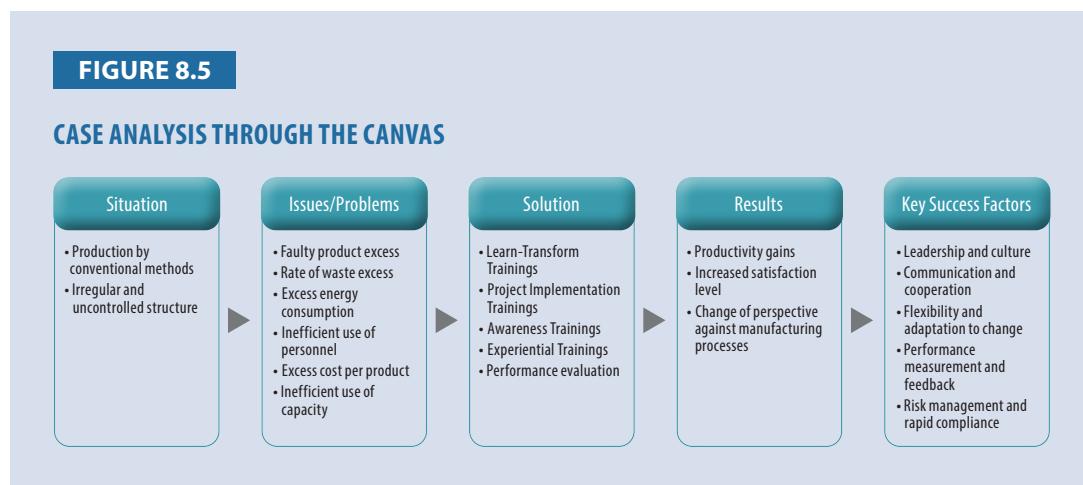
As to dimensions of organizational agility, culture, leadership, and organizational change have significant positive relationships with organizational performance. Transformational leadership can influence organizational agility and digital transformation by creating a cultural context that embodies its mission statement and guides employee behavior toward attaining the required skills. Thus it can be proposed that organizational agility can also mediate the relationship between digital transformational leadership and digital transformation [18].

Experiential learning and its application within a learning factory setting seem to enhance agility trainings. The LEAD Factory focuses on Lean, energy efficiency, agility, and digitalization. The didactic and methodological approach is based on different setup states, depending on training contents. To give an example: Lean trainings start with a suboptimal current state and end with a Lean future state, whereas digitalization trainings start with the Lean future state and end with a digital state. Agility is a highly relevant topic for industrial companies in times of increased volatility. There is a skills gap that is best closed through experiential learning in a close-to-reality learning factory environment [19].

Agile working can only be achieved with high levels of trust and a performance-driven culture. For many organizations, Agile working requires a complete change in corporate culture, from one where staff are expected to work with frameworks and guidelines designed to control the workforce and minimize risk, to one where people are seen as genuinely valuable assets, for the individuals that they are, and the difference they can bring. When an Agile working program is considered, it is important to think about what needs to be done to change the culture to support business needs [20].

Case Analysis: Model Factories

This section examined the Model Factories case analysis, showing Figure 8.5 illustrating the case analysis through a canvas.



Situation: Production by Conventional Methods, Irregular, and Uncontrolled Structure

When analyzing the development of productivity measurement systems from the past to the present, the main change observed is the traditional measurement systems, which included only financial indicators, being replaced by multidimensional measurement systems. In this transformation, traditional models had significant shortcomings, such as having a retrospective perspective, being far from providing insight into the future performance of the organization, and insufficient information on causal relationships.

Other factors prompting the transition to multidimensional measurement systems include the difficulty of applying traditional models in practice, their lack of flexibility and integrated structure, their misalignment with continuous improvement principles, and their disregard for customer needs. In traditional management, processes are undefined, responsibilities and authorities are unclear, organizational support is lacking, decisions are made based on experience and/or emotions, and there is a fault-finding approach [21].

Issues/Problems

Faulty Product Excess, Excess Waste Rates, High Energy Consumption, Underutilization of Personnel, Excessive Cost Per Product, and Inefficient Capacity Utilization

- **Overproduction** - Firms accumulate excess inventory of semi-finished products and finished goods during periods of low customer demand, leading to problems, such as error concealment, communication issues, longer delivery times, and increased costs

- **Excessive waiting times** - Workers may be idle while monitoring automated machines or waiting for the next process step, tool, supply, part, etc., or not working at all due to stockouts, batch processing delays, equipment downtime, and capacity bottlenecks
- **Unnecessary transportation** - The unnecessary movement of operators, products, or components from one place to another leads to waste in production processes
- **Defective production** - Repairing and replacing products/services that do not meet customer expectations leads to negative consequences, such as additional site/inventory, extra employee effort, tool allocation, delayed delivery time, reduced profitability, and damaged image
- **Extra work** - Usually caused by the production line not being set up correctly, extra work occurs when steps with no added value in the process are identified and removed from the process using the Value Stream Mapping technique
- **Excessive stock** - Wasting stock means having unnecessarily high quantities of raw materials, work in progress, and finished products. Extra stock leads to higher inventory financing costs, higher storage costs, and higher defect rates
- **Unnecessary movement** - Inefficient layout results in extra steps taken by workers and equipment to accommodate defects, rework, overproduction, or excess inventory
- **Unused talent** - Unused human talent and creativity waste occur when organizations segregate management roles from employees [22]

Solution

Learn-Transform Trainings, Project Implementation Trainings, Awareness Trainings, Experiential Trainings, and Performance Evaluation

With the training and consultancy services it provides, Model Factories aim to change the existing mindset of enterprises on continuous improvement, digital transformation, and to increase their competitiveness by using people, machinery-equipment, and raw materials [23].

Agile approach effective tools and principles can be applied, in addition to "end-of-cycle feedback and learning rituals (retrospective)" and "visual work management providing transparency" can be applied to all of them. The following situations are conveyed to the companies during the trainings given in the Model Factories.

- **Overproduction** - To prevent this situation, "working closely with the customer", "keeping and reviewing detailed backlogs (product backlog)", "value-based work slicing and prioritization", "short cycle/repetitive/incremental production", "frequent product reviews with stakeholders", "pivoting quickly according to changing needs"
- **Excessive waiting times** - "Sitting together", "autonomous (self-managed) teams that can decide how and when work is done and how work is distributed", "fixed duration and synchronous (starting and ending at the same time) planning of all cycles", "working with people with multiple specializations"
- **Unnecessary transportation** - "Each employee working in one team/project as much as possible"
- **Defective production** - "Detailed acceptance criteria", "presenting a usable product to the customer at the end of each cycle"
- **Extra work** - "Detailed acceptance criteria for priority work (acceptance criteria, DoD)" and "daily/short work review rituals"
- **Excessive stock** - "Job size estimation", "resource-fixed sprints", "bow-tie model-push and pull together-job planning", and "usable increment at the end of each cycle"

- **Unnecessary movement** - "Cross-functional/purposeful teaming", "role/person-based responsibility assignment", and "face-to-face communication"
- **Unused talent** - "Purposeful team building" [24]

Results

Productivity Gains, Increased Satisfaction Level, and a Shift in Perspective Against Manufacturing Processes

The results of the Learn-Transform Programs applied to industrial enterprises by eight Model Factories operating in Turkiye are summarized as the following:

- Development of human resources with the competence to ensure and sustain productivity increase in enterprises
- Up to 500% efficiency gains in pilot areas, up to 75% space savings, and up to 100% reduction in the need for overtime
- Noticeable increase in delivery performance, quality values, and safety culture. Commensurate with these gains, up to 30% reduction in costs and up to 20% increase in turnover
- Implementing Lean production practices that can be easily disseminated outside the pilot area
- Employees who have internalized the Lean production philosophy and are willing to Lean transformation
- Lean production training documents as a resource for sustainable productivity studies

By adopting Lean philosophy throughout the entire organization, noticeable improvements are achieved in many different areas, such as production, quality, customer satisfaction, and occupational safety culture [25].

Key Success Factors

Leadership and Culture, Communication and Cooperation, Flexibility and Adaptation to Change, Performance Measurement and Feedback, Risk Management, and Rapid Compliance

Through the Learn-Transform Program, which consists of flexible curricula designed according to the needs of enterprises and experiential trainings, results include productivity increase and change of perspective on production processes are achieved. The main success factors of this training method, which changes the culture that employees in enterprises are accustomed to by applying it together with employees, can be listed as follows:

- **Leadership and culture** - Strong leaders in organizations play an important role in the formation of corporate culture. Employees often emulate behavior of their leaders and this contributes significantly to the formation of culture. Therefore, the adoption of Agile culture by senior managers in businesses is critical for employees to adapt to this culture. In the Learn-Transform Program curriculum, topics, such as understanding the Lean philosophy, Lean leader managing change, Lean management, and Lean organization techniques facilitate the cultural change of managers and the adoption of the new working style by employees in enterprises
- **Communication and cooperation** - Employees with different skills and experiences can develop solutions to problems by exchanging ideas with each other. Defining the problem correctly and acting in cooperation in developing solutions requires teamwork. Businesses that implement teamwork become more Agile and flexible against change. The management of the communication structure created in the successful implementation of teamwork increases the work motivation of employees. In the curriculum of the Learn-Transform Program, with methods, such as Gemba problem solving, performance dialogues, influencing techniques, effective communication and cooperation between teams, and how to perform fast solution-oriented studies are taught to businesses

- **Flexibility and adaptation to change** - In order to meet changing customer demands in the fastest and most accurate way, businesses have to organize the production plan and use resources more effectively and efficiently. Through techniques, such as production leveling and the application of standardized work techniques in the curriculum of the Model Factories' Learn-Transform Program, businesses are taught strategies for flexibility in processes and rapid adaptation to changing demands. In this context, businesses are also guided in the use of Agile working styles that enable them to produce without compromising quality by using information systems and technology in the most effective way
- **Performance measurement and feedback** - It is important to identify and track Agile performance indicators to ensure that businesses can quickly adapt to rapidly changing market conditions and successfully implement the flexible production plan. In the curriculum of the Learn-Transform Program, techniques, such as introduction to performance management, the creation of key performance indicators, and the creation of continuous feedback loops for close monitoring of the identified performance indicators are taught to businesses
- **Risk management and rapid compliance** - The ability to quickly adapt to unexpected changes in plans is a critical feature of successful Agile projects. Being able to identify risks that may arise from changes early and to take the necessary measures quickly requires the ability to act flexibly. The Learn-Transform Program curriculum teaches Agile teams to focus on early detection and management of risks through techniques, such as failure type impact analysis, autonomation, and failure prevention

Examples of Agile Practices from Model Factories

Examples of the results obtained from Agile practices seen in some companies receiving services from Model Factories are:

- i) In a company that manufactures asphalt plants, there is a production area where roller bending, roofing, welding, cleaning, assembly, and painting processes of large dryer units are carried out. Findings were:
 - Production efficiency is very low because there is no flow due to batch type production
 - Delivery delays are experienced in almost every order
 - High stocks of semi-finished products
 - Production areas are undefined and intertwined
 - Walking, transportation, and material search times were found to be very high

A joint working group was set up consisting of project leaders of the companies participating in the program, each from different sectors, scales, and maturity levels, and a total of four months of experiential training and field coaching with expert trainers from the Model Factory resulted in:

- Continuous flow was ensured by transitioning to a single-piece flow system
- Production transition times were shortened and on-time delivery was ensured
- Semi-finished product stocks were minimized
- Area management was improved by defining specific areas for each operation and materials

The result of these efforts yielded a 31% productivity increase, 60% reduction in production transition time, 27% space gain, and 32% reduction in walking distances. In addition, the program fee paid for these gains without any investment was recovered in just two months [26].

ii) "Yarn Department" of a textile enterprise was selected as a pilot area. Following a detailed situation analysis study, several issues were identified:

- The Vater Ring line cannot adequately feed the next process and the Coil line
- Too much intermediate stock accumulated between the previous process, the Roving line, and the Vater Ring line
- Performance monitoring is carried out at the white-collar level in the organization; blue-collar personnel are not informed about performance

After the Learn-Transform Program received from the Model Factory, no additional new investment was made with the following:

- The bottleneck process at the Vater Ring line was identified with Value Stream Mapping; OEE (Total Equipment Efficiency) was calculated and downtime loss data was recorded
- Type change and tool change times were reduced, leading to an increase in OEE rate
- Material search times were minimized through a 5S study
- A Digital Performance System was established for real-time performance tracking, fostering a competitive environment between shifts

These initiatives resulted in a 20% reduction in type change time, a 38% reduction in team change time, and a 4% increase in OEE ratio [27].

iii) A holistic analysis of processes was conducted in an enterprise producing boiler radiators, revealing a number of inefficiencies:

- Value flow time, excluding raw materials, ranged from 16–20 days
- Rate of compliance with the shipment plan was only between 20%–30% (so boxes are opened weekly in advance)
- Lack of coordination between units
- Although capacity occupancy rates are around 50%–60%, overtime work is performed as a result of products that cannot be produced
- Work studies were found to be incomplete

After completing the Learn-Transform Program from the Model Factory, no additional investments were made and the following improvements were implemented:

- The planning cycle of the departments was reduced from 16 days to 5 days, reducing the value flow time
- Process studies were renewed and updated
- Daily operation of the shipment and dye house were ensured
- Morning meetings were organized to increase the rate of compliance with the daily plan and to ensure coordination between departments, and team leaders were being assigned responsibilities

As a result of these initiatives, there was a 20% increase in the number of daily production units, and unplanned overtime work, which was previously common, was eliminated. A 90% compliance rate with the shipment plan was achieved and the program cost was recovered in just two days [28].

iv) "Bevel and Punch Line" was selected as a pilot area in a company manufacturing industrial refrigerators. Before the program, a detailed situation analysis study was carried out in the relevant section. As a result of this study, it was found:

- Space congestion as a result of Accumulate-Wait style production
- Unpredictable cycle times, resulting in reduced productivity due to variability and inflexibility
- High waste of time, waiting and movement in the preparation, and distribution of material to stations
- Excessive stocks of intermediate and finished goods
- Performance monitoring was not possible to be carried out

After the Lean-Transform Program received from the Model Factory, no additional investment was made and the following was implemented:

- With the new layout plan implementation, production flow time was shortened and production space was saved. With 5S and Kaizen studies, intermediate stocks, transportation and movement waste were minimized, and work environment ergonomics were increased
- Daily performance monitoring started
- A milk-run system was implemented for labor balancing and material preparation and distribution to stations
- Kanban system was adopted

As a result of the highlighted initiatives, a 50% increase in daily production, a 42% reduction in punch waste rates, and a 25% increase in the number of sheets produced in the punch process were achieved [29].

Discussion

Planning of Agile Workspaces

Organizations need to change their traditional processes, structure, and management toward more Agile processes and management practices. An Agile organization is represented by teams working together, being motivated, gifted, self-disciplined, organized, and showing a remarkable ability to improvise. Agile institutions should focus on the representation, use, and development of the content and structure of knowledge structures both to address value commitments and facilitate the capacity for action in changing environments [18].

Starting from this point, Model Factories have been established and put into operation to ensure that the training needs of manufacturers in Turkiye are met with a practical Lean and technical approach within the scope of adopting Lean production tools and techniques in order to increase efficiency in production by making the most of the Agile working style.

It has become very important today to diversify internship opportunities for high school and university students to train personnel who can keep up with Agile working styles to be employed in enterprises. Model Factories generally offer internship practices to high school, undergraduate, and graduate students through protocols signed with educational institutions. Within the scope of internship practices, one-day experiential training, long-term internship training, and awareness training on Model Factory practices are provided. Awareness trainings are also provided to vocational high school teachers at Model Factories.

It is aimed to provide trainings on digital transformation in Model Factories in order to guide SMEs to use Agile methods in production methods by collecting data from production lines and making sense of this data. In this context, the inclusion of current technological elements, such as IoT platform, cloud computing application, big data analytics and artificial intelligence (AI) platforms, digital work instruction, cycle time analysis and evaluation, and collaborative robot (Cobot - frequently carry out manufacturing-related tasks, including assembly and packaging automation, material handling, machine tending, and product quality control) were also carried out. These included robot, predictive maintenance, augmented reality, and additive manufacturing studies. Additionally, digital transformation infrastructures were created for Model Factories to provide digital transformation trainings and consultancy to SMEs. A curriculum was prepared for digital transformation trainings and trainers were put into training.

Performance Monitoring and Evaluation

Model Factories serve important purposes and their increasing number has led to the need for some monitoring and evaluation mechanisms. In order to ensure the sustainability and service quality of Model Factories, work is being carried out on the "Model Factory Performance Monitoring and Evaluation System (PMES)". With PMES, the current status and future targets of Model Factories can be accurately assessed. An advisory board was established to contribute to the planning, steering, and coordination functions of the Model Factories. The main purpose of the advisory board is to ensure that Model Factory activities serve the objectives of the establishment and comply with national policies as well as to carry out studies on the risks that may be encountered and to opine on priority issues that need to be resolved.

Carrying out monitoring and evaluation activities in Model Factories will contribute to the sustainability of Model Factories, and increasing efficiency at the micro level will affect and pave the way for all segments from the factory level to the provincial level and from the provincial level to the national level [30].

The PMES was piloted for the period September–December 2022 and necessary studies were carried out to ensure the continuity of this system for 2023 and the ensuing years. In this study, the results of the pilot implementation are presented and the findings obtained by analyzing the achievement of the targeted performance level of the Model Factories in operation are reported. The ability of Model Factories to serve more SMEs is closely related to their adoption of Agile working style. For this reason, it is important to set more ambitious performance targets for Model Factories every year and to monitor the level of achievement of these targets.

Cultural Changes

Various consultancies can be provided in the implementation of efficiency increasing methods. Classical consultancy companies contribute to increased productivity through the consultancy they provide on companies' production lines. In such services, after the consultancy period ends, the mistakes made before in the production line begin to repeat over time and the increase in productivity begins to decline.

Within the scope of the training provided by Model Factories, the most important point is that the employees own the process and carry out the transformation together with the consultant/trainer. The most important feature that distinguishes Model Factory services from classical consultancies is the Agile working style applied. In fact, it can be said that it provides a kind of Agile culture transformation.

The following cultural changes can be given as examples of the achievements identified after the Learn-Transform Program services provided to businesses by Model Factories:

- Creating and actively using standard operation pages that have not been implemented before
- Increasing the rate of employee ownership of their jobs
- Participation of personnel in the process by using suggestion boards in the production area

- Conducting competency matrix studies
- Activating the performance board and rewarding employees
- Pursuing goals and setting and achieving higher goals
- Providing training to increase the competency levels of the personnel
- Carrying out efforts to ensure continuity by supporting Agile regulations with audits
- Increasing the willingness of pilot field personnel to spread the experience they gained in the study to other areas
- Breaking the resistance in production

Policy Implications and Recommendations

As of December 2023, the Learn-Transform Program was provided to 415 companies in eight Model Factories, project implementation consultancy to 140 companies, experiential training to 440 companies, and promotion and awareness training to more than 1,750 companies. Additionally, trainings and awareness meetings were organized with companies and participants from different sectors.

In the coming period, efforts to reach more SMEs through Model Factories are planned to continue. Providing regional services in nearby provinces other than the provinces where the Model Factories are located will reach more SMEs and increase productivity. In this context, the 12th Development Plan covering the years 2024–28 states that the Model Factories established to increase productivity will be designed to provide new services on a regional basis and for digital transformation, and their effectiveness will be increased.

Designing and integrating a satisfaction survey to measure the performance of the services provided by the Model Factories to enterprises into the PMES, which was created to ensure the sustainability and service quality of the Model Factories, will make a significant contribution to improving the services provided by the Model Factories.

Integrating digitalization tools and technologies, which have a significant impact on competitiveness, into processes in more SMEs is important in terms of responding quickly to changing customer demands. For this reason, the digital transformation infrastructure established in Model Factories should be used effectively in order to guide enterprises to use Agile working styles in their production methods. The process of integrating the curriculum created in this context with the Learn-Transform Program curriculum in Model Factories should be followed. It would be useful to add new performance targets for digital transformation services in PMES in order to increase the number of SMEs served by monitoring the process.

Taking measures to improve the curriculum created within the scope of establishing a digital transformation infrastructure will also accelerate the adaptation of enterprises to rapidly transforming market conditions by improving the service diversity and quality of Model Factories. For example, a curriculum can be prepared to teach standard application procedures to newly employed personnel in enterprises through applications, such as augmented and virtual reality.

Moreover, ensuring that the trainers of Model Factories participate in Digital Transformation Consultants Training Programs and receive training on the creation of the road map of SMEs' digital transformation journeys is crucial. It is evaluated that, after receiving these trainings, certified trainers will provide important guidance to SMEs in creating digital infrastructures, collecting and interpreting data with the infrastructure created, and using them as tools in making Agile decisions.

In addition, Model Factories are considered to be pilot locations for 5G applications. In order to increase the ability to respond quickly and efficiently in a competitive environment with constant uncertainties and unpredictable changes, the speed, flexibility and adaptation processes of the companies receiving services from Model Factories will be realized, thanks to the policies created, and depending on the developing technologies.

In order to increase the number and quality of instructors providing training in Model Factories, 233 experts underwent training in the Instructor Training Program in 2022. They were integrated into the ecosystem of Model Factories.

For SMEs to maximize benefits from Model Factory activities and increase efficiency with an Agile approach, the Business Development Program - Lean Transformation Support was initiated in collaboration with the Small and Medium-Sized Enterprises Development Organization and the ministry. First of all, the Lean Maturity Assessment Analysis Measurement Tool and Report was prepared to determine the status of SMEs within the scope of Lean transformation. Participants were then encouraged to practice on an example case study. Finally, they were asked to apply this tool in an SME of their choice and create their reports. Although it was not easy to convince SMEs, those who successfully completed this Agile application implemented by the ministry began to work as Lean Transformation Consultants. Increasing state support to increase the number of SMEs that will benefit from the services of Model Factories will make the work of Model Factories more effective.

The target audience of Model Factories are manufacturing industry enterprises, particularly SMEs, followed by sector employees, students, and academicians. Through their collaborations with educational institutions, Model Factories make strong contributions to the development of students' adaptation skills and enable them to learn methods that will increase productivity in a real production environment through personal experience. Model Factories can provide training to vocational high school students through courses integrated into the vocational high schools curricula. After theoretical education is given in these courses, it can be ensured that the subjects are reinforced by seeing the applications with on-site visits to Model Factories. In addition, collaborations can be established for students to be part of their internships in Model Factories. Teachers of vocational high schools can also be provided with relevant trainings by Model Factories through an in-service training, making it easier for enterprises to employ qualified employees suited to Agile working styles to boost industry productivity.

Similarly, Model Factories will be an important asset for companies to train and employ qualified human resources they need directly within the scope of Lean and digital transformation practices by offering synchronous courses for credit at universities. In addition, long-term internship of university students in the relevant departments, supervised by Model Factory trainers in enterprises participating in the Learn-Transform Program, will ensure the employment of well-equipped white-collar personnel in enterprises. This will ensure qualified employment without the need for enterprises to invest in training for their newly recruited employees, facilitate the adaptation of newly recruited personnel to the business, and bring agility to operations.

As it is known, taking necessary precautions before a disaster occurs is at least as important as effective and efficient response activities during the disaster. In this context, an application can be developed to utilize the expertise of Model Factory employees who teach Agile working styles at the point of increasing the efficiency of enterprises in areas, such as logistics, supply processes, and warehouse management in disaster management. This application will bring flexibility and agility to both Model Factories and industrial enterprises in the process of adapting to business processes again after a natural disaster.

It is essential for Model Factories, which guide businesses to increase their productivity with flexible practices through Agile working styles, to create, implement, and monitor action plans that showcase their long-term goals, growth plans, and the competitive strategies they will take against their competitors. Setting high targets in these plans will significantly boost productivity in the industry and expand Model Factories' services to more enterprises in the country.

Conclusion

Personnel keeping up with Agile working styles can play a vital role in boosting the productivity of enterprises by providing Agile production. Personnel's adaptation to Agile working styles can be achieved by changing their current mindset by providing new and different experiences.

Companies need to change their traditional processes, structures, and management toward more Agile processes and management practices. An Agile organization is represented by teams working together, motivated, skilled, self-disciplined, organized, and demonstrating an extraordinary ability to improvise. Model Factories, established in public-private cooperation, play a crucial role in steering the cultural change of companies toward Agile methodologies and in developing more competitive and creative operations.

By implementing Model Factory applications and activities, the aim is: (i) to improve the number of trainers and technical capacity in the field of efficiency and digital transformation; (ii) to provide application opportunities for academic studies; (iii) to provide measurable productivity enhancements in businesses; and (iv) to contribute to sectoral development. In order for Model Factories to achieve their goals, increase their efficiency, and maintain their functionality, it is important for public institutions, especially universities, chambers of industry and commerce, organized industrial zones, and private-sector organizations to develop cooperation activities [15].

CHAPTER 9 : CONCLUSION

NAVIGATING THE TRANSITION: CHALLENGES AND STRATEGIES IN ADOPTING AGILE WORKING STYLES

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Organizations are increasingly adopting Agile working styles in response to the dynamic landscape catalyzed by the COVID-19 pandemic. The inherent flexibility of Agile work environments empowers individuals to tailor their work arrangements according to their preferences, resulting in heightened productivity and a more balanced work-life equilibrium. Nonetheless, implementing Agile working methodologies presents notable challenges for many enterprises.

Therefore, this research endeavors to address these challenges by elucidating critical issues encountered during adoption, identifying strategies for fostering Agile workplaces, and pinpointing key success factors for effective implementation. Through a meticulous examination of successful case studies spanning diverse sectors across several APO member economies, this study aims to distill invaluable insights and actionable recommendations, thereby serving as a guideline for organizations navigating the transition toward Agile working paradigms.

For the research, a “case analysis canvas” was presented which is composed of five building blocks as a standardized method to analyze each Agile working transformation case. Each national expert from Bangladesh, Cambodia, India, Malaysia, Pakistan, Sri Lanka, and Turkiye conducted case studies of successful Agile working styles, respectively.

In a case study titled “Adaptation of Agile Working Styles in Bangladesh’s BRAC Bank”, the national expert focused on BRAC Bank’s adoption of Agile methods during the COVID-19 pandemic. BRAC Bank was among the first in Bangladesh to shift to remote work, providing employees with tools and technology for effective collaboration and maintaining operational continuity. Their strategy included employee surveys, technical setups, digital policies, and a focus on ownership, technology preparedness, and flexible management. The bank also adapted its operations to meet health guidelines, expanded digital solutions, and invested in alternative delivery channels, aligning with social distancing while enhancing customer access and efficiency through digital transformation. BRAC Bank’s transition to remote work and digital services enhanced IT security, improved employee well-being, reduced operational costs, and boosted customer transactions, fostering strong business growth and operational efficiency.

The Cambodia’s case study “Toward Operational Agile Working Practice for Productivity in the Public Sector” examines the implementation of operational Agile working practices in its public sector, particularly within the Ministry of Labour and Vocational Training (MLVT). MLVT, since its inception in 2005, has been enhancing its service efficiency and accessibility, particularly by adopting Agile working methods during the COVID-19 pandemic. Transitioning from manual to digital operations, MLVT faced challenges, such as limited accessibility, time-consuming processes, inefficient resource

allocation, transparency doubts, and inadequate data management. To address these, MLVT moved to online platforms for service delivery and internal communications, including using Zoom for meetings and Telegram for document exchange. This digital shift has resulted in more productive government work, improved business environments, and better resource management. MLVT's online services have streamlined processes, allowing for faster service delivery and enabling the focus on critical tasks. This transition toward digital governance aligns with the government's policy to push for a digital government by 2023, reflecting a significant improvement in productivity, transparency, and accountability within the MLVT.

The study "India's IT Sector and Its Agile Working Style Focusing on Cultural Alignment for Productivity" provides a comprehensive examination of Agile working styles and their impact on productivity in India, specifically within the IT sector. It explores the adoption and implementation of Agile methodologies by leading companies, like TCS, Infosys, MakeMyTrip, Wipro, Flipkart, and Mindtree, emphasizing cultural changes, efficient transition strategies, and the necessity for technological support. These firms overcame challenges, like resistance to change, scaling Agile, cultural shifts, and skill gaps by adopting various Agile practices and frameworks, emphasizing change management, and focusing on customer-centric innovation. TCS's Enterprise Agile journey, Infosys's reporting optimization, MakeMyTrip's product development agility, Wipro's strategic transformation, Flipkart's e-commerce dominance, and Mindtree's client-focused service improvements exemplify Agile's role in fostering adaptability, team cooperation, and continuous learning. These transformations resulted in not just process changes but also cultural and collaborative shifts, positioning these companies as leaders in their respective fields.

The case study titled "Going Agile with Construction Permits in Kulim" focuses on the construction permit process in Malaysia's Kulim district, highlights the importance of outcomes-focused regulations (OFR) in improving efficiency and productivity in the public sector. Malaysia, striving for developed nation status by 2025, emphasizes talent, technology, and Agile regulation as productivity drivers. The COVID-19 pandemic has highlighted the limitations of traditional bureaucratic methods, prompting a shift toward Agile regulation to maintain productivity growth. The Kulim Municipal Council (MPKK) adopted the OFR approach to streamline construction permits, essential for attracting investment and supporting Malaysia's goal to improve its ease of doing business ranking. This agility allowed for the continuation of economic activities despite pandemic-induced movement controls. MPKK's express construction permit (ECP) facilitated a win-win situation for both investors and the government, enabling industrial projects to commence within agreed timelines, thus reducing costs and spurring economic growth and employment in the district.

The case study "Agile Working Style in Pakistan: IT-based Solar Business Management Study" focuses on the Agile transformation of Sky Electric, a solar energy company in Pakistan that adapted Agile methodologies to enhance business operations and employee productivity, especially during the COVID-19 pandemic. With the increasing need for digital transformation and adherence to the UN SDGs, Sky Electric leveraged IT and Agile practices to maintain business continuity, improve responsiveness to changing market demands, and ensure employee well-being. The company faced challenges in implementing Agile across diverse teams and maintaining communication, necessitating the redesign of workspaces, adoption of virtual collaboration tools, and a shift toward a more flexible work environment. This strategic shift not only facilitated the company's operations during the pandemic but also set the stage for ongoing Agile practices, enhancing competitiveness and employee satisfaction within the evolving landscape of Pakistan's IT and renewable energy sectors.

The research of "Sri Lanka's Agile Working Style for Productivity in the Government Sector" provides details of a case study on the implementation of Agile working in the public sector, focusing on a local administrative unit, the Divisional Secretary's Office (DS Office). The DS Office in Kundasale has successfully implemented Agile working practices to enhance service delivery, despite initial internal resistance and the challenges of adapting traditional office systems to Agile methodologies. Solutions included restructuring office spaces, upgrading technology, and fostering a culture of innovation and feedback. As a result, the DS Office won a public-sector productivity award in 2020, demonstrating the

benefits of Agile working in saving time, increasing transparency, and improving public confidence and employee work-life balance. The DS Office serves as a benchmark for other public-sector organizations in Sri Lanka, showcasing the successful adoption of Agile working methods and the positive impact on productivity and service delivery.

As can be inferred from the research title "The Role and Contribution Competency and Digital Transformation Centers (Model Factories) in Turkiye," Turkiye's Competence and Digital Transformation Centers, known as Model Factories, play a key role in enhancing productivity and catalyzing digital transformation by offering experiential learning to facilitate the adoption of Agile practices in manufacturing. Initiated in 2015, these centers serve as platforms for companies to transition from traditional to Agile and Lean manufacturing methods, thus improving their responsiveness to market changes and customer demands. Supported by various strategic plans and action plans, the Model Factories have been pivotal in promoting continuous improvement, efficient use of resources, and skill development, ultimately leading to a cultural shift toward Agile methodologies within the industrial sector. The training and consultancy services offered are designed to overcome the limitations of conventional production methods and embrace a performance-driven culture that contributes to sustainable development goals and equips businesses to handle rapid technological and environmental changes.

Implementing an Agile working style has been highlighted by various APO member economies with key success factors, including robust leadership and specialist workforce, adaptation capacity, a learning culture, technological innovation, and customer-centricity. Bangladesh, for instance, adapted to the pandemic by reformulating policies and adopting new technologies, emphasizing employee training and digital mission alignment. Similarly, Cambodia's success depended on national policy support, management support, cultural willingness to adapt, and setting up necessary mechanisms for change. India focused on leadership, continuous learning, skilled labor, change management, and collaboration tools. Malaysia emphasized transparent and flexible regulations, effective investor-regulator interactions, competent officers, clear outcomes, and leveraging technology. Pakistan's success was attributed to visionary leadership, culture development, employee empowerment, and operational efficiency. Sri Lanka highlighted the importance of internal arrangements for speedy service, feedback openness, process improvement, dedicated leadership, and better performance monitoring. Turkiye's success in Agile transformation relies on leadership and culture, communication and cooperation, flexibility, performance measurement, and risk management. These factors collectively contribute to a robust Agile implementation that responds to customer demands and market conditions efficiently.

The policy implications and recommendations across various APO member economies converge on the promotion of Agile working transformation through organizational and governmental strategies. Key measures include investing in Agile training and skill development, establishing Centers of Excellence for Agile, prioritizing change management, and fostering client collaboration. Tax incentives for adopting Agile methodologies, certification programs, support for research and development, and collaborative industry frameworks are also suggested. Emphasizing data protection and security, including regular audits and compliance checks, secure collaboration tools, and data privacy training, are identified as crucial.

Countries like India highlight the need for a comprehensive policy framework that encourages cultural alignment with Agile practices while Bangladesh suggests a cautious, iterative approach to adopting Agile methods, underpinned by feasibility studies and training. Cambodia focuses on regular feedback, technology investment, and collaboration tools, whereas Malaysia and Pakistan emphasize top-level coordination, cultural considerations, and postpandemic planning. Sri Lanka and Turkiye advocate for trust-based principles, robust digital policies, and targeted training initiatives to foster a culture that supports Agile working styles. These recommendations aim to create a supportive environment that enables organizations to be more competitive, innovative, adaptable, and prepared for the future.

The case studies of Agile working transformation in various APO member economies highlight the importance of adapting to change, embracing digital innovation, and implementing flexible work practices to enhance competitiveness and productivity. These transformations are driven by strategic planning, cultural shifts toward flexibility and innovation, and overcoming challenges, like regulatory compliance and technology infrastructure. The significance lies in each APO member economy's unique approach to integrating Agile working practices, emphasizing the role of government policies, organizational culture, and technological advancements in fostering an adaptable and efficient workforce. By learning from these diverse experiences, other countries can craft their own Agile working transformation strategies that align with their specific contexts and development goals.

The research on Agile working transformations presented in the case studies of Bangladesh, Cambodia, India, Malaysia, Pakistan, Sri Lanka, and Turkiye exposes inherent limitations, such as the scope of data and cultural context. The data may not reflect the broader national strategies for Agile working transformation and cultural nuances could significantly affect the interpretation and success of these Agile working practices. This study also has the limitation of not presenting analysis results from a more general perspective because it focuses on specific industries or organizations within each APO member economy. Technological disparities, differing regulatory environments, and lack of standardized metrics to evaluate the effectiveness of Agile working transformations across different cases present additional challenges that can distort the effectiveness and implementation of Agile work practices.

Future studies should address these limitations to enhance the comprehension and applicability of Agile transformations globally. Additionally, further research could delve into comparative studies across different industries and countries, including longitudinal studies to assess the sustainability of Agile working practices and investigate the impact of cultural nuances on the adoption and efficacy of Agile working styles. It would also be beneficial to explore the interplay between Agile working practices and regulatory compliance in various global contexts.

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ABBREVIATIONS AND ACRONYMS

AAP	Affirmative Action Programs
Agile	Agile project management approach
AI	Artificial intelligence
ATM	Automated teller machine
AWS	Agile working style
BCP	Business continuity plan
BRAC Bank	BRAC Bank Limited
CBS	Core Banking System
CC	Cloud computing
CCC	Certificate of Completion and Compliance
COEs	Centers of Excellence
CSR	Corporate social responsibility
DC	Direct current
DPS	Pension Management System
DS	Divisional Secretary's
ECP	Express Construction Permit
FDI	Foreign direct investment
Fintech	Financial technology
FIs	Financial institutions
FWA	Flexible Working Arrangements
GIS	Geographical Information System
GN	Grama Niladhari
GINI	Gross national income
GRP	Good regulatory practice
HSMs	Hardware Security Modules
ICT	Information and communication technologies
IoT	Internet of Things
IR4.0	Fourth Industrial Revolution
IT	Information technology
LDCs	Least developed countries
KIDs	Kulim Integrated Data Base System
KIIs	Key informant interviews
KM	Knowledge management
KPIs	Key performance indicators
MLVT	Ministry of Labour and Vocational Training
MPC	Malaysia Productivity Corporation
MPKK	Kulim Municipal Council
NBeS	National BIM E-Submission
NIC	National identity card
NIS	National Institute of Statistics
OECD	Organization for Economic Cooperation and Development

ABBREVIATIONS AND ACRONYMS

OEE	Total Equipment Efficiency
OFR	Outcomes-focused regulation
OSC	One Stop Centre Unit
PATH	Program for Appropriate Technology in Health
PEMUDAH	Special Task Force to Facilitate Business
PMES	Model Factory Performance Monitoring and Evaluation System
PPP	Public-private partnerships
PSEB	Pakistan Software Export Board
PSP	Principal Submitting Person
SDGs	Sustainable Development Goals
SME	Small and medium enterprises
SMS	Short message service
TCS	Tata Consultancy Services
UN	United Nations
UNDP	United Nation Development Program
WFH	Work-from-home

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