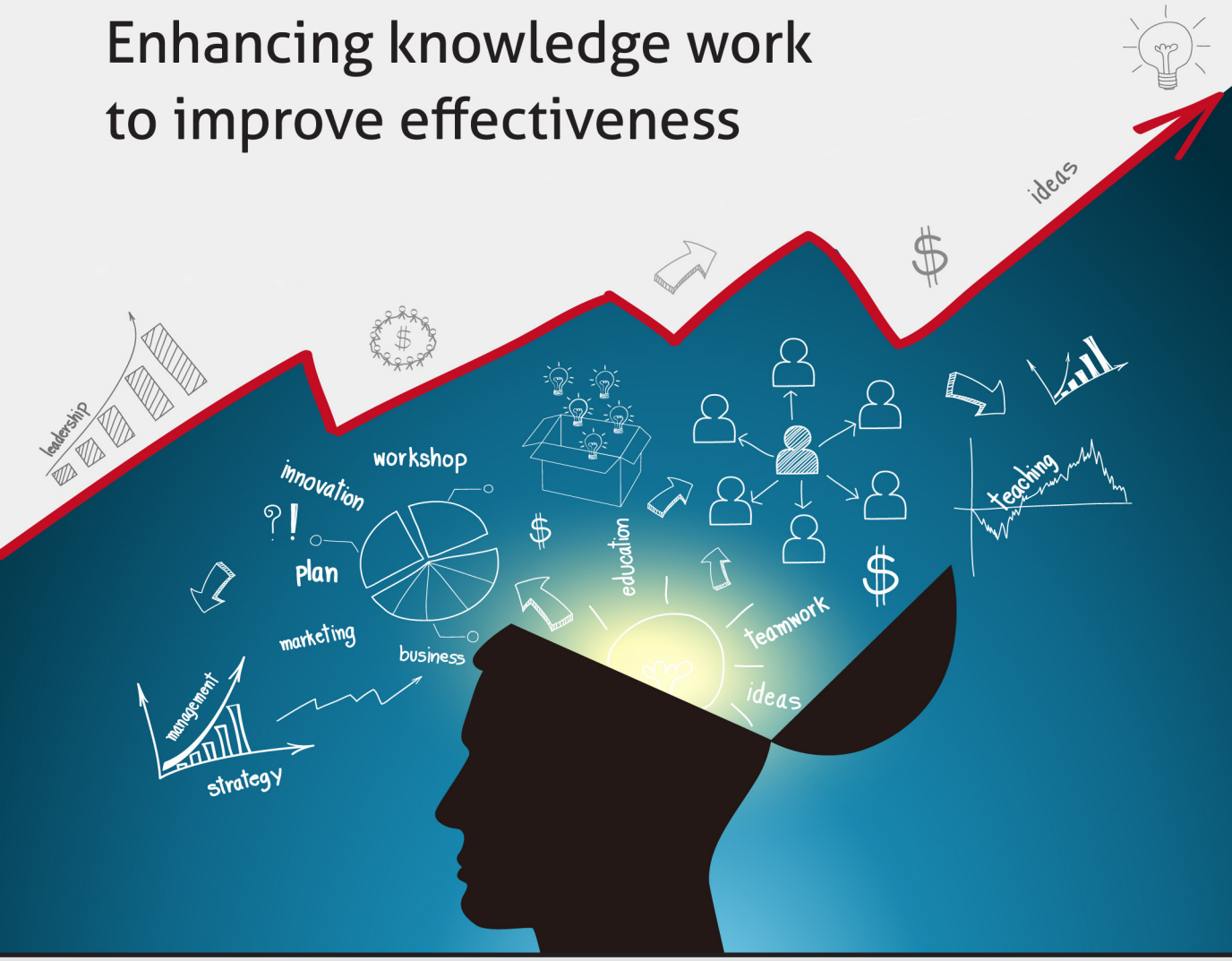
# Knowledge Productivity in the Public Sector

## Enhancing knowledge work to improve effectiveness




APO

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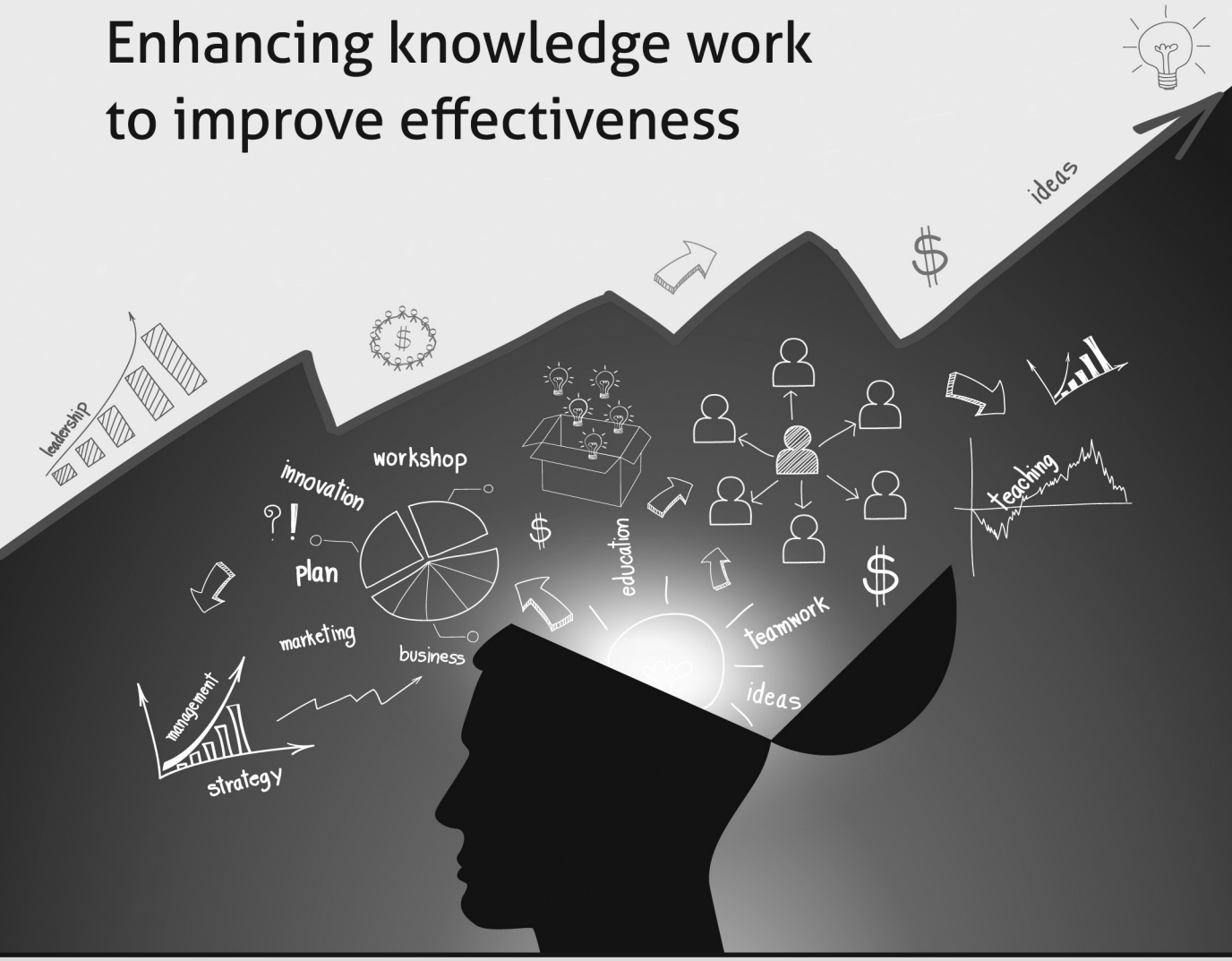


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# CONTENTS

**Foreword** v
**List of Tables and Figures** vii

**CHAPTER 1 WHY THIS BOOK? 1**

- **Enormous Potential to Increase Knowledge Productivity in the Public Sector 1**
- **Introducing Knowledge Productivity in the Public Sector 4**
- **From a Quality Management approach to a Knowledge-Productivity Approach 9**

**CHAPTER 2 CURRENT SITUATION 12**

- **A Literature Review of Knowledge Productivity 12**
- **From Knowledge Working Productivity to Organizational Knowledge Productivity 16**

**CHAPTER 3 KEY CHALLENGES FOR THE PUBLIC SECTOR 18**

- **Mind-sets that Affect Knowledge Productivity in the Public Sector 18**
- **Knowledge is Power 21**
- **What's in it for Me? (WIIFM) 24**
- **Constant Changes in Public-Sector Leadership 28**

**CHAPTER 4 KEY PRINCIPLES 31**

- **Implementing Druckers' Principles for Knowledge-Worker Productivity 31**
- **Implementing Effective Organizational Knowledge Productivity 33**
- **Implementing Principles of Effective Knowledge-Asset Management 34**

CHAPTER 5 KNOWLEDGE-MANAGEMENT STRATEGIES 37

- Strategies to Cultivate Organizational Knowledge Productivity 37
- Increasing Knowledge Productivity in the Public Sector through Partnerships 39
- The APO Knowledge Management Framework 42

CHAPTER 6 KEY METHODS AND TOOLS 48

- Leadership and Empowerment 48
- Communities of Practice 56
- Knowledge-Enabled Business Processes 74
- Knowledge Platform 83

CHAPTER 7 MEASUREMENTS 93

- Frequently-Used Measures 94
- Types of Measurements 95
- Measuring Results 95
- Measuring Activity 96
- Measuring Costs 97
- Deciding when to Measure 97
- Measuring Business Value 101
- Measuring Knowledge Retention 101
- Measuring Cultural Impact 102
- Measuring the Effectiveness of Sharing Communities 103
- Measuring Information-Capture Ownership 103
- Measuring Project Impact 104

CHAPTER 8 NEXT STEPS 105

- How can we start an Initiative to Increase the Productivity Knowledge-Work Productivity 105

About the Authors 107
References 116

# FOREWORD

This book has been written for one very powerful reason: The potential for increasing the productivity of "organizational knowledge work" in the public sector to add value is enormous. It examines knowledge work, the current status of knowledge productivity in the public sector, and the key challenges faced, as well as describes a new approach to implementing the daily principles, methods, and tools of effective knowledge work. In line with the mission of the APO of contributing to the sustainable socioeconomic development of Asia and the Pacific through enhancing productivity, the aim of this publication is to increase the productivity of knowledge work in the public sector to increase value for citizens.

Specifically, different chapters review the principles of effective knowledge work and challenges faced today and propose additional principles for the public sector. The importance of a strategic approach, framework, methods, and tools is explained, and measurements now available to turn those useful principles into reality are described. The concluding chapter recommends the next steps toward increased organizational knowledge productivity.

A team of experts from Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, Vietnam, and the UK collaborated in writing this volume. The APO thanks them all and is particularly grateful to Chief Expert Ron Young, founder of the Knowledge Associates International Group of Companies in the UK, for guiding the team during the publication process. Their cooperative efforts, experience in multiple countries, and use of team space on the World Wide Web were instrumental in completing this book.

We hope that this volume gives readers a better understanding of how to improve the knowledge work productivity of individuals, teams, and communities in public-sector organizations to meet current and evolving needs.

Dr. Santhi Kanoktanaporn
Secretary-General
Tokyo
December, 2017

# LIST OF TABLES AND FIGURES


Table 1. Public and private sectors . . . . . 4

Table 2. Quality and knowledge . . . . . 10

Table 3. The six factors of knowledge-worker productivity . . . . . 13

Table 4. Pros and cons in WIIFM approaches . . . . . 27

Table 5. Implementing the six factors of effective knowledge work . . . . . 32

Table 6. Value-creation story: filled-out example. . . . . 72

Table 7. Reasons for KM-enabled process improvement. . . . . 76

Table 8. Differences between *ba* and COPs . . . . . 90

Table 9. Types of ba . . . . . 91

Figure 1. Knowledge Sharing and Competency. YTK, your tacit knowledge. . . . . 22

Figure 2. Why Share one's Knowledge? . . . . . 23

Figure 3. APO Knowledge Management Framework for the public sector . . . . . 43

Figure 4. A Community of practice model . . . . . 58

Figure 5. COP's versus other learning entities. . . . . 60

Figure 6. Typical learning activities in COPs. COPs, communities of practice; questions and answers . . . . . 68

Figure 7. The four-stages of KM-enabled process improvement. KM, knowledge management; KPI, key performance indicators; RRP, roles and responsibilities. . . . . 77

Figure 8. From high-level process maps to detailed process maps . . . . . 79

Figure 9. KM enabled "To-Be" process maps . . . . . 80

Figure 10. Sample document of roles and responsibilities . . . . . 81

Figure 11. The SECI process . . . . . 88

CHAPTER 1

# WHY THIS BOOK?

## ENORMOUS POTENTIAL TO INCREASE KNOWLEDGE PRODUCTIVITY IN THE PUBLIC SECTOR

This book has been written for one very powerful reason:

The potential for increasing the productivity of organizational knowledge work in the public sector, and thus increase public value, is enormous!

Furthermore, increasing the knowledge-work productivity of individuals, teams, and communities in public-sector organizations will have an even greater impact on quality, growth, profitability, and value, and of course, overall productivity. In other words, the impact of knowledge productivity goes beyond just outputs, which is the focus of traditional thinking around productivity. More importantly, knowledge productivity has an impact on outcomes.

The book examines knowledge work, the current status of knowledge productivity in the public sector, and the key challenges that the public sector faces. The book proposes a new approach to implement the daily principles, methods, and tools for effective knowledge working. In line with the mission of the APO "to increase the productivity of Asia", the aim of this book is to increase knowledge-work productivity in the public sector to increase public value.

In his seminal management book *Management Challenges for the 21st Century* published in 1999, Professor Peter Drucker stated that "the most important, and indeed truly unique, contribution [to] management in the 20th century was the fifty-fold increase in the productivity of the manual worker in manufacturing. The most important contribution management needs to make in the 21st century is similarly to increase the productivity of knowledge work and the knowledge worker" [1].

Professor Drucker is also credited with first creating the term "knowledge worker" in the 1960s. However, his vision of organizational knowledge work and knowledge-worker productivity is still far from a reality today!

The aim of this book is to review the known principles of effective knowledge work as well as the key challenges facing the public sector today and to propose additional principles to develop effective knowledge work. We will introduce the importance of having a strategic approach, framework, methods, and tools, as well as measurements to turn these powerful principles into reality. The book concludes with some recommended steps towards increased organizational knowledge productivity.

This book was collaboratively written by a team of experts from Hong Kong, Singapore, Malaysia, Indonesia, the Philippines, Vietnam, and the UK. We first discussed the book in Kuala Lumpur, Malaysia in September 2015. We then created a virtual collaborative team space online and started writing. This enabled us all to gain new ideas and insights from each others' writing as the book unfolded. We followed up by meeting in Hanoi, Vietnam in May 2016 to review and finalize the book. Our collaborative effort, combined expertise and the tools we used, across several countries, supported and motivated us. For us, it has been a successful experience in enhanced knowledge-working productivity that is available to us all in our daily work today.

To the best of our knowledge, since the publication of Professor Drucker's book mentioned above, no other book has provided a new approach specifically for knowledge productivity in the public sector.

However, we do recommend the 1999 paper by Professor Drucker, published in the *California Management Review*, entitled "Knowledge-Worker Productivity: The Biggest Challenge" [2] and the 2010 paper published in the McKinsey Quarterly, entitled "Boosting the productivity of knowledge workers" by Eric Matson and Laurence Prusak [3].

The APO-Japan National Graduate Institute for Policy Studies (GRIPS) Special Joint Forum was held on 27th May 2015, at which two world-renowned thinkers, Dr Laurence Prusak and Professor Ikujiro Nonaka, shared their thought-provoking ideas on productivity in the knowledge economy, moderated by Naoki Ogiwara. A booklet entitled *New Perspectives on Productivity in the Knowledge Economy* (500.04.2016) documented their discussion and was published in May 2016 [4].

Finally, in the broader and more general area of productivity in the public sector, we also wish to draw attention to the APO book published in early 2016, entitled *Measuring Public-Sector Productivity in Selected Asian Countries, Report of the Research on Performance Management for Public-Sector Organizations*, edited by Dr Hiroaki Inatsugu [5].

**Book Structure**

The book is structured as follows:

- *Chapter 1: Why this Book?* – introduces the book's purpose and objectives; introduces knowledge productivity in the public sector; and describes how we have evolved, historically, from a "quality-driven" approach to a knowledge-driven" approach to both productivity and quality.

- *Chapter 2: Current Situation* – reviews and defines organizational knowledge work and knowledge-work productivity for individuals, teams, and communities. It then discusses the transition from knowledge worker-productivity to organizational knowledge productivity.

- *Chapter 3: Key Challenges for the Public Sector* – identifies the key challenges around issues such as mind-set, "knowledge is power," "what's in it for me," and constant leadership changes in the public sector.

- *Chapter 4: Key Principles* – identifies and examines the need to immediately implement some key principles of organizational knowledge productivity as well as individual knowledge-worker productivity; and looks at the new approach to managing people, processes and technologies as "key knowledge assets" in the organization. It also discusses how to move towards measuring and reporting on these assets and briefly introduces new approaches to developing knowledge-worker competencies.

- *Chapter 5: Knowledge-Management Strategies* – looks at the need for a strategic approach and better partnerships to increase knowledge productivity; the "APO KM Framework for the Public Sector"; and the Four Accelerators.

- *Chapter 6: Key Methods and Tools* – describes the importance of leadership and developing the right mind-set, knowledge-worker empowerment, communities of practice (COPs), the Socialization, Externalization, Combination and Internalization (SECI) Model of Knowledge and the *ba* as a knowledge platform; as well as other knowledge-enabled processes, methods, and tools to improve knowledge productivity in the public sector.

- *Chapter 7: Measurements* – discusses the importance and challenge of measuring knowledge productivity and proposes some key measures.

- *Chapter 8: Next Steps* – brings everything together into a short and coherent action plan that is designed to help organizations increase the productivity of knowledge work in the public sector.

## INTRODUCING KNOWLEDGE PRODUCTIVITY IN THE PUBLIC SECTOR

### Definition of the Public Sector

Let us start with our definition of the public sector, some key criteria for the distinction between the public and private sectors, typical functions and, most importantly, why increased knowledge productivity in the public sector is important.

The public sector can be defined in different ways: As a service provider to the public (i.e., part of the economy that provides basic government services to its citizens either by direct production, delivery of services, or allocation of public funding), or ownership (i.e., part of economy that is owned or contracted by the government) [6].

In this book, we define the public sector as part of the economy that provides public and government services. This is in contrast to the private sector that provides goods and services for profit, according to market demand. In reality, the boundary between the private and public sectors is not always clear, as many services could be provided by either public or private organizations.

Table 1, below, provides some key criteria for the distinction.

**Table 1. Public and private sectors**

| | **Public sector** | **Private sector** |
|---|---|---|
| Nature of services and goods | Public goods or goods that are set by government policy | Private goods |
| Source of funding | Government funds or funds set by government policy | Market funds |
| Government control | Government has extensive control over the organization's policies, operations, administration, and service delivery | The organization is run according to market rules |

*(continued on next page)*

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| | Public sector | Private sector |
|---|---|---|
| Upward accountability | The organization is directly accountable to or directly reports to the government (and ultimately to the citizens whom the government represents) | The organization does not directly report to government |
| Management | The organization can draw from the extensive body of knowledge of management applicable to similar managerial functions and tasks. The objective of management is to protect public interest. | The organization can make use of public management approaches applicable to similar managerial functions and tasks. The objective of management is to protect the interest of investors. |

Source: authors.

Lynn stresses the basic distinction between the public and private sectors in the matter of accountability [7]. The foremost distinction is that public interest differs from private interest. Secondly, public officials are necessarily accountable to public values rather than to any particular group or material interest. Thirdly, public-sector organizations are bound to provide equal treatment and application of rules unlike organizations in the private sector, who may follow different rules to further their business goals.

When it comes to management, both the public and private sectors may have similar functions, responsibilities, and tasks, but the intent of their activities largely differs. The objective of public management is to protect the public interest and the welfare of citizens. In the private sector, the objective of management is to protect the interest of investors, generate wealth, and sustain business profitability.

**Typical Functions of the Public Sector**

In broad terms, the public sector's archetypal functions are: providing the legal system as well as public goods and services such as defense, health, and education; managing what the private sector produces through subsidies, taxes, credit, and regulation; mediating conflicting interests; and redistributing income [8].

The boundary of the public sector and its services varies from country to country. Typically, public sector services could be categorized into three major groups:

1. *Policy making:* Governments issue new laws and policies to regulate various aspects of development. The ability to identify critical policy issues and formulate good policies in a timely manner has a tremendous impact on national and regional development. The quality of policy making contributes a great deal to the quality of government services.

2. *Public administration services (agency):* Besides issuing laws and policies, the government has to provide a number of services to manage the state. These services include defense, security, license granting, etc. The availability and quality of these services directly affect the fulfilment of state functions, yet only government agencies provide these services.

3. *Public services:* The government is responsible for public goods and services such as healthcare, basic education, infrastructure, public transportation, and others. These services have common characteristics including:

    a. *Non-rivalry:* several people can consume the same good without diminishing its value; and

    b. *Non-excludability:* an individual cannot be prevented from consuming the good.

    The pure market motivation for the private sector to provide these services is lacking. Thus, the government either has to provide these services itself or contract them out to the private sector.

The classification of the functions of government (COFOG) by the United Nations illustrates the multifarious nature of governmental activities [9]. These comprise:

1. General public services such as executive, legislative, financial, fiscal, and external affairs;

2. Defense, covering military and civil defense;

3. Public order and safety including police, fire protection, law courts, and prisons;

4. Economic affairs such as agriculture, mining, manufacturing, transport, fuel and energy, commercial and labor affairs;

5. Environmental protection including waste management, pollution abatement, and biodiversity conservation;

6. Housing and community amenities such as housing development, water supply, and street lighting;

7. Health such as public health services, hospital/outpatient services, medical supplies and equipment;

8. Recreation, culture and religion including broadcasting and printing;

9. Education such as pre-school, primary, secondary, post-secondary, and tertiary education; and

10. Social protection such as against sickness and disability, old age, and unemployment, and provision of housing, as well as services for family, children, and other vulnerable groups.

Public-sector organizations (agencies and public-sector enterprises or government corporations) are often established and structured to perform these essential governmental functions.

**Why Knowledge Productivity in the Public Sector?**

By their nature, most public-sector organizations are knowledge-based. They need to accumulate and manage vast amounts of information and knowledge to effectively discharge governmental functions [10]. Knowledge productivity, i.e., how knowledge is acquired and utilized, is becoming a key success factor in achieving public-sector goals. An improvement in knowledge productivity in the public sector would make an enormous contribution to a country's development [11–12].

The impact of knowledge productivity on different functions in the public sector can be considered as follows:

- *Policy-making stage:* increasing knowledge productivity enhances the likelihood that high-impact policies will be issued in a timely manner. A typical policy goes through various stages of development, i.e., identification of policy issues, formulation, implementation, and evaluation. Relevant knowledge enhances both quality and speed of the policy process at each stage.

- *Agenda-setting stage:* It is critical to correctly identify policy issues to have a high impact on development. This requires policy makers to know the gaps in current policies and development needs.

- *Policy-formulation stage:* Evaluation of social, economic and environmental impacts is needed. Policy makers also have to ensure that the proposed policy fits well with existing policies to facilitate national development. Hard data, modern analysis techniques as well as soft knowledge acquired from consultations with related stakeholders should be utilized at this stage.

- *Implementation stage:* Critical success factors at this stage rely on clear communication of the policy and capacity building for implementation agencies. The ability to appreciate context and make wise decisions regarding implementation also contributes to the policy's success.

- *Evaluation stage:* Policy makers need to compile data pertaining to their stakeholders' perspectives in order to assess the policy's effectiveness, impact, and sustainability, among others.

At all stages, knowledge creation, application, and sharing is practiced by state officials either formally or informally. Thus, improving knowledge productivity would greatly facilitate the policy cycle and enhance the quality, effectiveness, and impact of the policy. This coincides with a recent interest in evidence-based policy making in the public sector.

For public administration services, the goal is to provide quality services in efficient and equitable ways [11]. Knowledge of current regulations, the ability to categorize citizens' and/or firms' requests, and the ability to follow the right procedures will contribute to delivering public services efficiently. On the other hand, public administration services are the targets of continuous improvement, with procedures and regulations undergoing change. Improving and reforming these processes often requires process redesign, new technology, and training. Increasing knowledge productivity greatly contributes to both delivering services and the improvement of service quality.

For public services, while the goal is similar to public administration services, the providers may be either public or private organizations. Either way, knowing citizens' needs and preferences is essential for service delivery. Knowledge productivity works in the same way as it does in the private sector. Improving knowledge productivity here enhances quality, efficiency, and equity in delivering services and would also facilitate innovation in this sector.

In brief, increasing knowledge productivity in the public sector has a tremendous impact on a country's development. It improves the quality of the policy-making process and service delivery, and facilitates continuous innovation, often perceived as lacking in the public sector.

## FROM A QUALITY-MANAGEMENT APPROACH TO A KNOWLEDGE-PRODUCTIVITY APPROACH

When a product or service is produced, quality is usually the first concern in order to facilitate its acceptance in the market and generate repeat orders. As demand increases, producers usually start to focus more on productivity while simultaneously improving the product's or service's quality. This is in line with what the quality gurus such as W. Edwards Deming, Philip Crosby, and J.M. Juran have long advocated regarding the positive relationship between quality and productivity performance. Deming's assertion is that as quality improves, costs automatically decrease because of less rework, fewer mistakes, and fewer delays [13].

Although widely accepted, Deming's philosophy has its skeptics. In fact, many organizations pursue quality- and productivity-management practices in an independent fashion. Traditional productivity is the relationship between a given amount of output and the amount of input needed to produce it, while quality is defined as the standard of something as measured against other things of a similar kind, or the degree of excellence of something. Though there is a positive relationship between quality and productivity, traditionalists have seen that higher quality will reduce productivity and that high productivity will sacrifice quality.

The traditional view is that higher quality levels result in increased production costs, higher prices, and, therefore, reduced productivity [14]. Quality is more important than quantity: "One home run is much better than two doubles," as Steve Jobs said. This mind-set is correct if only one of productivity or quality is the concern.

However, the authors of this book hold the view that productivity and quality should coexist to give the best benefit to producers.

As the face of business continues to change, organizations are looking for new ways to remain competitive and profitable. Many businesses have jumped from one management philosophy to the next, looking for the ultimate solution. Both the ISO 9001 (2015) Quality Standard and the Baldrige Excellence Program clearly highlight the importance of knowledge in an organization [15–16]. What to do with organizational knowledge is specified in these management frameworks. Knowledge, experience and lessons learned are critical factors for producing and improving products and services of high quality.

A recognized short definition of knowledge is: "knowledge is information in action." The ability and willingness to accept feedback from experience is very important in the quality-improvement process. Feedback, whether collected during the production process

or received from product/service users, is the best trigger to improve quality. This is the key process to make knowledge productive. A lesson learned from Steve Jobs is that "incredible things can be achieved when the concept of quality is infused throughout an organization." Table 2, below, puts quality and knowledge into a better focus and perspective:

**Table 2. Quality and knowledge**

| | **Quality** | **Knowledge** |
|---|---|---|
| Key concern | Output (per input) | Outcome |
| Trade-off | Quality and productivity are a trade-off | Quality and productivity can be achieved simultaneously |
| Type of knowledge used | Primarily focus on explicit knowledge (process, tools, guidebooks, set standards, etc.) | Combine both tacit (mental) and explicit knowledge |
| Measurement level | Can be measured at individual, team, and/or organizational levels | Hard to measure at the individual level |

Source: authors.

Moving from the quality approach alone to also embrace the knowledge-productivity approach will help an organization to:

- Avoid repeating the same mistakes
- Prevent unnecessary reinventions of the wheel
- Retain and better transfer critical knowledge
- Capture new critical knowledge
- Reduce time spent making products or delivering services
- Create advanced and innovative knowledge to maintain competitive advantage

By better understanding how quality and knowledge productivity can fit together, organizations will be able to use their knowledge assets more effectively in a more integrated approach. They can also learn how to optimize their capabilities using knowledge management (KM) methods to create higher value for the organization.

The knowledge-based economy is generating innovations for both business and society. Business models and cultures are changing and their impacts are manifesting in areas such as wealth creation, nature of work, and corporate structure. The experience of work itself is changing as people are becoming more mobile and reluctant to stay with any single organization for the long term.

Making knowledge work productive is a challenge to individuals, teams, and organizations. Organizations are looking forward to developing new skillsets in their people by innovatively applying their existing body of knowledge and skills across the organization. These organizations are typically those that have integrated and utilized all such knowledge, from end-to-end, within their business process.

Integrated improvement is consistently discussed and communicated among all stakeholders. Non-conformity and failed processes are avoided where necessary, through coordination and integration, and in some situations, failure and non-conformity are even encouraged in order to achieve creativity and innovation. Higher-quality products and services utilize more resources such as time, labor, and raw materials.

Knowledge productivity will facilitate efforts to reduce time and wastage of resources and materials, and also minimize knowledge gaps. This will also enable organizations to analyze and decide on the optimal number of workers. In the end, knowledge productivity will enable organizations to achieve the triangle of: (1) products and services delivery, (2) high value and fastest time, and (3) best quality. Most importantly, this will significantly contribute to the ultimate goal of maximizing value to citizens.

CHAPTER 2

# CURRENT SITUATION

What exactly do we mean by knowledge work? What is knowledge-worker productivity? What is organizational knowledge productivity? We start to examine these questions by first providing a review of the literature on knowledge-worker productivity.

## A LITERATURE REVIEW OF KNOWLEDGE PRODUCTIVITY

### Definition of Knowledge Workers and Knowledge Work

Since the publication of Drucker's book several scholars have continued discussing the definition of knowledge-work productivity [1]. Many definitions have been proposed:

1. Knowledge workers often have a high level of education and expertise, and their work primarily involves the creation, distribution, and application of knowledge [17]. Education, expertise, and the nature of the work determine whether a person is categorized as a knowledge worker. As Ramírez and Nembhard put it, knowledge workers convert knowledge (as opposed to materials) from one form to another [18]. Thus, knowledge work is primarily intangible.

2. Scholars, including Ramírez and Nembhard recognize that knowledge and manual work are not a dichotomy but two poles of a continuum [18]. While knowledge workers are often defined in contrast with manual workers, the dichotomy between them is not very meaningful [19]. Every job requires some level of knowledge, and fewer and fewer workers perform routine work that does not draw upon accumulated knowledge and expertise. This view is important to remember when identifying knowledge workers and methods to improve their productivity.

3. Technologists form an important group of knowledge workers. Drucker defined technologists as those who simultaneously do both knowledge and manual work [1]. Examples of technologists include healthcare workers; lab technicians; rehabilitation technicians; technicians in imaging such as X-ray, ultrasound, and magnetic-resonance imaging; dentists and all dental support people; automobile mechanics; and repair and installation people. Surgeons are also an example of technologists. As Drucker explains, surgery has many characteristics of manual work such as repetitive procedures that

require uniformity, speed, and accuracy [1]. Yet judgment during the surgery requires tacit knowledge and this is knowledge application of the highest level [1]. Drucker went on to argue that no country could have a true advantage over another in knowledge or manual workers; however, developed countries have advantages in their technologists [1].

The importance of technologists has a profound implication for knowledge workers' productivity. Technologists in the public sector can be broadly defined to include planners, policy makers, educators, and public service staff. Their productivity has a strong impact on the public's quality of life. An increase in technologists' productivity involves improving in both aspects of their work, such as standardizing manual processes (Taylor's principles for manual works [20]) and enhancing workers' autonomy (Drucker's principle of knowledge works [1]).

**Knowledge-Worker Productivity**

Despite much discussion, scholars have not presented any concise definition of productivity in terms of knowledge workers. Most discussions have focused on characteristics and/or differences between knowledge-work productivity and manual-work productivity. Davenport stated "We don't even have broadly applicable measures of knowledge-work productivity or quality" [17]. Hammer questioned whether the concept of "knowledge-worker productivity" could be established in as clear and concise a manner as the conventional output/input ratio used for manual work [19]. Rather than trying to offer a generic definition of the term, scholars and practitioners tend to look at specific characteristics or elements of knowledge-worker productivity.

Drucker identified six elements of knowledge-worker productivity, of which four were distinct characteristics of the work and the other two were conditions to enhance productivity [1]. These are defined in Table 3, below.

**Table 3: The six factors of knowledge-worker productivity**

| Characteristics | Conditions |
|---|---|
| 1. The knowledge worker defines the task<br>2. The knowledge worker is responsible for continued innovation in his or her work. | 1. Knowledge workers have to manage themselves and have autonomy. They also take responsibility in defining their contribution. |

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| Characteristics | Conditions |
|---|---|
| 3. The knowledge worker continuously seeks training and learning.<br>4. The knowledge worker's productivity is not measured by output quantity alone, but also by the quality of the output | 2. Knowledge workers must be treated as "assets" rather than "costs." They must prefer to work for the organization, over all other opportunities. |

Source: Drucker [1].

Similarly, other scholars believe that knowledge-worker productivity is closely related to worker autonomy, as they own the means of production. Knowledge work primarily takes place in the human brain, and thus is more invisible, variable, and unpredictable than manual production or administrative work [17]. Moreover, knowledge-worker productivity must also be linked with the quality and impact of the work [19]. It would be extremely hard (if not impossible) to measure individual knowledge-worker productivity.

In brief, a concise definition of a knowledge worker does not currently exist, and there are debates over whether the term "knowledge-worker productivity" has any meaning. However, scholars generally agree that knowledge-worker productivity is:

- *Outcome oriented:* Knowledge-worker productivity should be measured in terms of outcome, not just output. While manual worker productivity is measured mostly by output (per input), knowledge workers' output does not reflect the key value of their work. Drucker posited that the knowledge worker decides the "task", the value of which is measured by that task's value in terms of outcome such as "customer satisfaction". Hammer posited that organizational development should be considered part of knowledge-worker productivity as it is an outcome-oriented (not output-oriented) measure [19].

- *Individual productivity needs to be integrated into team and organizational productivity:* If knowledge-worker productivity is outcome-oriented, then individual knowledge work contributes to the overall team's and subsequently, organization's value chain. The knowledge worker's productivity thus needs to be integrated into overall organizational productivity goals.

- *Quality is an integral part of productivity:* The knowledge workers do not have a specified quality standard to follow for their work. They decide the quality as an integral part of their work value. The quality of the product of a scientist, policy maker, educator, or healthcare professional will decide the value of the product.

- *Continuous learning and innovation is another part of productivity:* The amount of learning available for individuals and teams in an organization is another aspect of knowledge-work productivity. Learning and innovation contribute to progressively better work. Thus, learning and innovation should be considered when assessing productivity, and workers are responsible to undertake continuous learning.

- *At least some part of knowledge-worker productivity is subjective:* Outcome, quality, and judgment all contain subjective elements. Thus, any assessment of knowledge-worker productivity will contain subjective elements.

**Can Knowledge Productivity be Measured?**

Scholars have recognized that measuring knowledge-worker productivity is a challenge [18]. Drucker acknowledged that in some knowledge work (e.g., that of surgeons), quality can be measured, but most of the time, quality is subjective [1]. This subjectivity poses a challenge when measuring productivity in knowledge work.

Some IT scholars have proposed ideas for measuring knowledge-worker productivity, but strictly from the IT perspective. Moon suggested that knowledge-work productivity can be measured by tracking two processes [21]:

1. How quickly a worker can provide an accurate answer based on their personal experience; and

2. How quickly this worker can understand a request and provide an accurate answer.

Moon's suggestion focuses on explicit information. It does not capture the insights that a knowledge worker generates and or the tacit knowledge that a knowledge worker has.

With the above-mentioned characteristics, it is difficult to produce generic measuring points for knowledge-work productivity. Knowledge-work productivity may need to be measured (if at all) tailored to the job or organization. Firstly, knowledge work must relate to team and organizational objectives. These objectives can vary from one team or organization to another. Secondly, the quality of the work must be measured according to its specific type (any policy attempting to measure knowledge work in the education sector will differ from a policy written for the healthcare sector). Thirdly, the need for learning and innovation also varies depending on the individual's, teams', or organization's capacity and objectives. Thus, each team and organization should establish measuring points that are suited to their own needs, both for their long-term development objectives and current capacity.

# FROM KNOWLEDGE-WORKER PRODUCTIVITY TO ORGANIZATIONAL KNOWLEDGE PRODUCTIVITY

## Current Interest in Knowledge Productivity

Despite a growing body of literature in KM, productivity has remained a mysterious concept for academic scholars and practitioners alike [22–23]. Since Drucker's [1] seminal work on knowledge-worker productivity, little progress has been made on how to transform knowledge-worker productivity into knowledge productivity at the team and organizational levels [24]. The constructs and conceptual models are at the nascent stage, and empirical studies are lacking [25]. Scholars also recognize that there is no practitioner model for knowledge productivity. As Wong and Neck put it: "There is no practitioner model for knowledge-intensive organizations ... to enable them to integrate their work processes with Drucker's six major factors determining knowledge-worker productivity" [24].

## Definition of Knowledge Productivity

Similar to knowledge-worker productivity, knowledge productivity is an elusive concept [25]. The traditional approach to productivity, which measures the ratio of output to input, does not work well as both input and output in this case are primarily intangible [22]. Instead, scholars look at knowledge productivity as a conversion of knowledge to values [23]. Harrison and Kessels define knowledge productivity as "... the way in which individuals, teams and units across an organization achieve knowledge-based improvements and innovations" [26].

In a more recent study on this topic, Huang and Wu define knowledge productivity as the capability by which individuals, teams, and units across an organization achieve knowledge-based improvements, exploitation, and innovations [25]. The authors further clarified improvement, exploitation, and innovation as follows:

- *Improvement:* The ability to improve each product or service to the point of transformation into a different product of service in two or three years' time.

- *Exploitation:* The ability to use existing knowledge to develop new and different products, processes, and services.

- *Innovation:* Identifying and using opportunities to create new products/services or work practices.

Knowledge productivity differs from knowledge-worker productivity in several aspects. Firstly, knowledge-worker productivity exists at the individual level and knowledge productivity at team and organizational levels. Knowledge productivity, while putting the individual at the center, is not a sum of the individual knowledge worker's productivity [23]. Converting individual productivity into organizational productivity requires a suitable organizational arrangement. Secondly, knowledge-worker productivity depends largely on individual competencies, and organizational conditions play supporting roles. Knowledge productivity, on the other hand, depends largely on organizational conditions, including strategies, systems, processes, tools, and culture [25]. For these reasons, it is reasonable to suggest that knowledge-worker productivity is a pre-condition for knowledge productivity.

**Knowledge-Productivity Enablers**

Current literature is silent on methods to promote knowledge productivity. Stam argued that knowledge productivity requires a good learning environment [23]. Huang and Wu developed a model that links intellectual capital with knowledge productivity and tested this model with a sample of Taiwanese biotechnology firms [25]. Three specific intellectual-capital factors include:

1. *Human capital:* The knowledge, skills, and abilities residing within and utilized by individuals;

2. *Organizational capital:* The institutionalized knowledge and codified experience residing within firms utilized through databases, patents, manuals, structures, systems, and processes; and

3. *Social capital:* The knowledge embedded within, available through, and utilized by interactions among individuals and their networks of interrelationships.

Palvalin et al. contended that the use of ICT as an organizational capital tool enhances knowledge productivity in a number of ways [22]. For example, ICT facilitates better access to information, real-time information, better knowledge sharing, etc.

CHAPTER 3

# KEY CHALLENGES FOR THE PUBLIC SECTOR

## MIND-SETS THAT AFFECT KNOWLEDGE PRODUCTIVITY IN THE PUBLIC SECTOR

One way to highlight common mind-sets in the public sector is to compare them to those in the private sector. The differences vary according to specific contexts and should be treated as related rather than categorical. In relation to knowledge productivity, four common mind-sets in the public sector are discussed below.

### More Process-Focused than Customer-Focused

The public sector is often more focused on following processes (e.g., costs, procedures) rather than customer satisfaction [20]. The concept of a "customer" is not well anchored across the public sector, despite much discussion about it. Viewing citizens as "customers", in many cases, is more theory than reality due to the indirect relationship between tax payment and public services. This could be explained by the political and organizational context of the public sector. Public-sector agencies serve many stakeholders with different, sometimes conflicting, demands. Moreover, discretion on the part of public- sector staff is sometimes seen as corruption and irregularity. One way to reconcile different demands and minimize irregular practices is to develop a clear process that is acceptable to the stakeholders. Over time, "following the process" has become the norm in many corners of the public sector, regardless of priority stakeholders. Unfortunately, too much focus on process can affect the motivation to create knowledge and improve customer satisfaction.

Improving knowledge-worker productivity in the public sector requires a change in mind-set from process-oriented to customer-oriented. As Drucker explains, knowledge productivity needs to focus on outcome, i.e., customer satisfaction [1]. Public servants could be seen as technologists; they should have enough room to decide "what the tasks are" in each situation. This relates to identifying who the key target stakeholders to serve are.

Beneficial change in three areas of the public sector could be summarized as follows:

1. *Public service providers (PSPs):* Government-provided services for the public interest. These include education, healthcare, and utilities. These services are similar to the private sector in many respects. A new movement in this sub-sector is to grant public-service providers more autonomy, which would then open the services to more competition. Workers delivering these PSPs need to develop a customer-oriented mind-set.

2. *Public administration services (PAS):* People who work in the PAS (e.g., issuing licenses and official documentation) may face competition, as the government is the sole provider of these services. These services normally have a strict process to minimize officials' discretions. However, a customer-oriented mind-set would help redesign the process to serve citizens better, as evidenced in public administration reforms many countries have embarked on. Such reforms are aimed at improving the quality of services to customers and enhancing knowledge productivity in PAS activities.

3. *Policy making:* Policy making has a direct effect on people's lives, yet policy-making practices sometimes focus too much on following mandatory procedures and lose focus on the people they are meant to serve. Customer-oriented policy making means the government solicits active community involvement in shaping the public agenda and in crafting policies to best serve the community.

A customer-oriented mind-set would help policy-makers identify their key "customers" and then mobilize relevant knowledge to formulate effective policies.

**Compliance Impedes Continuous Improvement**

Compared to the private sector, the public sector commonly promotes a rule-based culture that promotes compliance rather than entrepreneurship, innovation, and even improvement [20]. Furthermore, such a culture is focused on performance appraisals and salary policies that reward attendance and compliance. As the public sector has many procedures, there is little incentive for public employees to try something different.

With such a compliance culture, safety and stability impede change. Employees seek knowledge acquisition and sharing when they need to, not when they feel inspired to. Change is externally imposed rather than internally initiated. Occasionally, when mistakes are made, covering up mistakes may be a higher priority than learning from them. This approach is contrary to Drucker's principles of continuous improvement and staff autonomy [1].

Compliance culture must be changed to encourage continuous improvement, promote knowledge-worker productivity, and increase innovation in the public sector. Compliance promotes the "manual" aspect and suppresses the knowledge aspect of the work. Staff knowledge should be focused on their ability to make judgments as well as ideas for changing the rules to serve people better.

Fostering a culture of continuous improvement involves changes to work design and appraisal systems. The work design for public-sector staff needs to be balanced between clear rules and procedures and room for personal judgment. Concern that personal judgment or discretion may induce irregular practices is relevant; therefore, work design must also align with a culture that fosters integrity. Appraisal systems in the public sector also need to promote innovation. New ideas for rules and their improvement to provide better quality services should be part of the work.

**Replacing Silo Mentality with Interdependence**

There are enormous knowledge resources in the public sector, which remain untapped due to a pervasive silo mentality. Knowledge silos are a natural consequence of the hierarchical structure and functional specializations of public-sector organizations [27]. While such structures may encourage administrative efficiency, the unintended consequence is fragmentation. Knowledge workers in the public sector spend most of their time analyzing data and managing knowledge separately or, oftentimes, individually. It is common to have separate databases and information management systems across public-sector organizations. The hierarchical structure in the public sector can also impede the flow of information and knowledge sharing. The layers and boundaries, including politics and individual habits, do not facilitate information and knowledge sharing in any way, up, down, across, or outside the organization, thus creating knowledge silos.

Public-sector staff focus primarily on fulfilling their functional tasks and rarely link their work with the bigger picture. They are often not aware, or interested, in what people do in other parts of the organization. As a result, knowledge is fragmented into bits; stored in various isolated individuals and divisions across the organization. This silo mentality supresses knowledge-worker productivity.

Several reasons explain the domination of the silo mentality in the public sector. These organizations are traditionally compartmentalized and hierarchical. Performance is not measured by how well other departments do, and the incentives for innovation and better teamwork, especially between different departments, is low. It is often difficult to encourage collaboration among different units to solve complex problems.

However, higher productivity in the public sector can be realized through information sharing. Ideally, knowledge (from analyzing public data and information) should automatically be channelled to decision-makers or implementers to properly guide public actions and strategy. For example, several public-sector organizations are tasked with providing good health and quality education to society. In this case, particular knowledge about who the specific beneficiaries of public programs are can be shared across the many public-sector organizations involved in planning, resource allocation, production, and actual service delivery for better targeting, redundancy elimination, leakage prevention, etc. Overcoming knowledge silos would enable the public sector to realize, collaborate, and share time, space, and resources to collectively achieve intended results in a shorter time period.

It is the same in the field of policy: resolving public issues involves more than one public-sector organization. A more holistic "whole-of-government" approach, rather than one that is purely organizational, would be best as this would allow a more comprehensive approach to formulating and analyzing public policies. However, the "whole-of-government" approach is driven by knowledge. It would mean overcoming knowledge silos to externalize and harness both tacit and implicit knowledge (stock knowledge). In particular, this would then enable public-sector knowledge workers to obtain new information and create more innovative and sound solutions for resolving public issues.

The silo mentality must be changed to one of interdependence. Organizational design should allow a good level of interdependence such that different units can easily work together to solve complex problems. Physical and functional boundaries between units should be open to facilitate knowledge flows and cooperation. Inter-functional task forces and informal socialization activities could be used more often to foster collaboration. The sections that follow provide more specific measures to promote knowledge-worker productivity, which should be implemented alongside work-culture changes.

## KNOWLEDGE IS POWER

In any discussion on implementing effective KM, especially when talking about knowledge sharing, the belief that "knowledge is power" has always been considered a barrier. This mind-set makes people reluctant to share, as they believe that sharing their knowledge will make them less competitive in the workplace; that their own knowledge will decrease and be used by others to perform better. People also think it is better to make others rely on them, or that others will respect them more as a result of their specific knowledge. Job security is another strong reason held by most people for keeping knowledge for themselves.

However, beyond mere knowledge alone, competency also consists of skills and attitude, and these basic components of competency need to be combined in order for workers to excel in their areas of expertise.

Figure 1, below, shows that any tacit knowledge possessed by someone is integrated with their skills and attitude. People should not worry about losing their tacit knowledge when conducting knowledge sharing. Sharing or making one's knowledge explicit does not mean that one's tacit knowledge becomes less valuable. Any tacit knowledge must be well integrated with skills and attitude in order to deliver optimum performance.

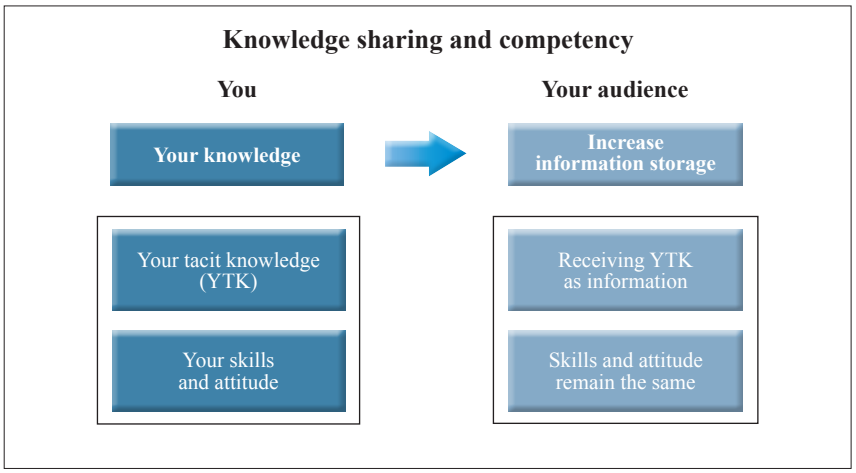


**Figure 1. Knowledge sharing and competency. YTK, your tacit knowledge.**
Source: Sapta Putra Yadi (author).

What your audience receives during knowledge-sharing is only information. It is not automatically converted into knowledge immediately as it requires action before it can be called knowledge. The same thing happens to their skills and attitude: These remain the same. Information becomes knowledge after it is applied in action. In other words, shared tacit knowledge only becomes knowledge when the receiver (the audience) integrates it with their skills and attitude to perform a task to generate good performance and results.

### What Happens to One's Knowledge During Knowledge-Sharing?

The other thing to be considered is that it is not just about how much knowledge one has, it is also about how well one grows and renews one's knowledge. By sharing one's knowledge, one gains opportunities to grow and renew one's tacit knowledge. Sharing sessions provide opportunities to be challenged by the audience. Their questions and comments have excellent potential to create opportunities for the acquisition of new insights to upgrade one's knowledge.

Figure 2, below, shows what happens before and after one shares one's knowledge. One's knowledge improves by responding to questions and challenges from the audience. In the process of answering and responding in the best way possible, one discovers new ways to enhance one's knowledge on that particular matter. This will lead to mastery of the knowledge each individual possesses.

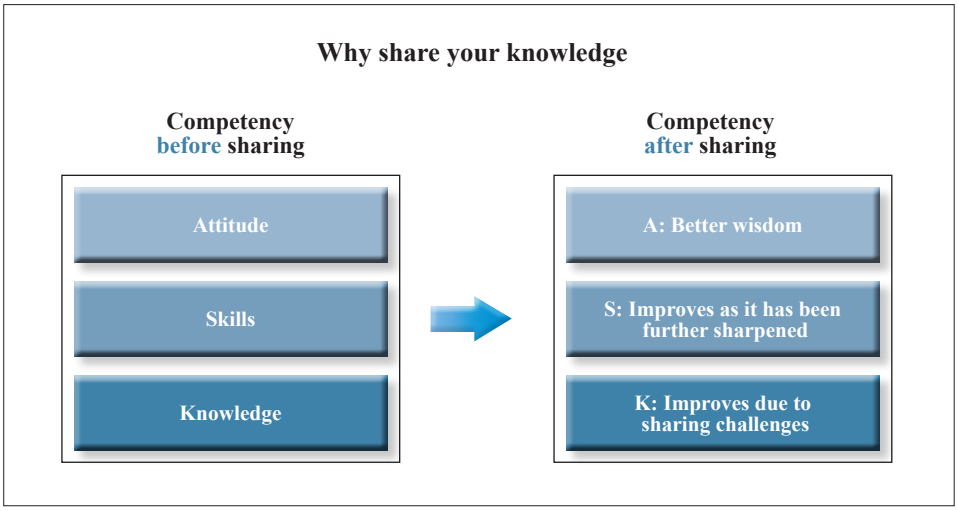


**Figure 2. Why share one's knowledge?**

Source: Sapta Putra Yadi (author).

The same applies to one's skills. Through sharing, people experiences what is called "sharpening the saw." Skills and attitude will improve and enhanced wisdom will be attained concerning the knowledge that one has developed.

Let's take one example. Assume that you are a good and experienced project engineer. You have been requested to share your experience with other engineers and you tell your audience about the experiences you have gone through, in detail. Audience members will need to process and manage what they have heard from you before they can use this new information. Your previous success is a result of your tacit knowledge, skills, and positive attitude, which were accepted by your customers and clients. You have also worked on many projects, both successful and unsuccessful, from which you have learned a great deal. To be at the same level as you, your audience will also need to go through the same process and gain their own experience. Your knowledge-sharing simply gives them an opportunity to build tacit knowledge.

The "knowledge is power" mentality is clearly contradictory to a KM culture. A KM culture expects each person in the organization to be aware that organizational critical knowledge should be maintained and retained in such a way as to ensure organizational growth and

sustainability. People in the organization have to be aware that they are key assets that enable the organization to run continuously and that the organization's success includes individual success.

Changing the "knowledge is power" mentality in the public sector is crucial for any individual involved in knowledge-work productivity and, ultimately, organizational knowledge productivity. A good knowledge policy and culture should encourage everybody in the organization to willingly share their knowledge where it is needed for the benefit of organization growth and sustainability, as well as for the individuals' career development. The idea of knowledge sharing and effective knowledge working, as discussed above, is critical, but there is one more overriding issue that must be fully understood, if we are to achieve effective knowledge productivity, and that is "What's in it for me?"

## WHAT'S IN IT FOR ME? (WIIFM)

When launching a program, management tends to forget about the "What's in it for me?" (WIIFM) mind-set.

Why should we remember this? This is a psychological issue: any form of action must have a specific motivation behind it. It is natural that people are reluctant to perform an action for no direct benefit or gain. This gain is what we call external or extrinsic motivation. The problem with extrinsic motivation is that it usually does not last longer than intrinsic motivation (internally driven motivation), which becomes a challenge for knowledge-productivity initiators.

Being familiar with WIIFM can lead to organizational programs that provide internal motivation. Such a program is more long-lasting, sustainable, and positive than external motivation. The end result may be the same, but the journey is not

Extrinsic motivation is usually in the form of physical or monetary rewards. The person who is involved in knowledge-productivity programs at a certain level will receive a reward such as shopping vouchers, cash, books, free tickets, or other similar forms of reward. In many cases, eventually, at a certain point, the person will feel unsatisfied with the reward and will no longer be motivated by the program.

Intrinsic motivation, on the other hand, comes from inside the mind of the person concerned. For example, they know that by actively participating in the knowledge-productivity program they will be more knowledgeable or more skilful, which will result in good performance,

promotion, and a better salary. Most best practices and knowledge-productivity programs could be included in individual key performance indicators (KPIs), either in a private company or in a public service institution.

To implement knowledge-productivity programs, the programs' design should take into account having a series of rewards or positive reinforcement to promote favorable attitudes and support for the program. Otherwise most users will have no motivation to become involved.

In many cases, the people factor is often ignored when initiating knowledge-productivity programs. The focus is usually more on the technology side, but technology is only an enabler when implementing a knowledge-productivity program. In one notable experience, Company X provided a knowledge-productivity portal instead of considering beforehand the success factors that make a knowledge-productivity program integrated and successful. As a result, the portal was not used for the company's critical knowledge. Instead, employees used it to exchange unnecessary information, such as birthday greetings, and herbal treatment information.

A WIIFM attitude does not necessarily have to do with a lack of awareness. People are unique, and an approach that is successful in motivating one group will seldom be effective with a different group. Therefore, it is important to understand the situation and condition around the workplace when trying to develop and build a positive WIIFM attitude.

It is very important to pay attention to WIIFM throughout the development of a program. The feeling of pointlessness of implementing knowledge-productivity programs must be strongly avoided. Knowledge-productivity initiators have to create awareness among stakeholders of the potential intrinsic rewards they can obtain if they are seriously involved in the program. The reasons why someone might stand still instead of taking action and participating in the program must be anticipated.

**Building WIIFM**

There is a high tendency to get stuck in a "Why bother?" mind-set. Some people may feel that their work is secure and their knowledge is myriad, why share it? This type of person may hinder knowledge-productivity program implementation. Knowledge-productivity initiators need to find reasons to change this mentality. Their WIIFM needs to be identified. Knowledge productivity is about getting people to effectively interact. When people interact, each of them, consciously or unconsciously, already has the same question, "What's in it for me?" If a knowledge-productivity initiator wants to motivate people to do something, they must not only look at it from their own perspective. Rather, they should try to relate to the

other person's perspective and explain what's in it for them; the other persons' attention will naturally increase.

WIIFM can be built using a top–down or bottom–up approach. Both approaches have their own pros and cons and are not necessarily used together simultaneously. There is also no guarantee that a successful approach in one organization will be successful in another. The choice is very much dependent on the organization's learning culture, knowledge saturation, geographical spread, and people management.

A good learning culture should combine the "learning organization" and "organizational learning" approaches. In a learning organization approach, learning is driven and dependent upon employees, which creates an environment that is vulnerable to "key-man risk," where work can be interrupted when the knowledge worker is unavailable. The organizational learning approach is organization-based, driven by learning experiences in activities and projects. The risk with a purely organizational learning approach is that employees may feel that they are replaceable as everyone has access to the same training. A good learning culture balances the two approaches to avoid these risks and will boost organization-wide performance in the long term.

In some organizations, employees may feel complacent, saturated with the information and knowledge that they use to perform their daily activities. This could happen in a routine business environment. In this situation, both management and employees should take the initiative to innovate by doing things differently or developing new challenges. The benefits of such initiatives will be seen in the long term.

An organization with operations spread over a large geographical area has specific challenges in implementing knowledge-productivity programs. The motivation for employees to learn can be very different. Management has to be able to identify these various motivations.

The way an organization manages its people is also influential when developing a program that will motivate most employees. Strong leadership is one of the key drivers to motivate employees to achieve knowledge-productivity success. Other factors include consistency in remuneration, a good talent management system, appropriate recruitment and selection system, and a performance management system.

**Building WIIFM Culture: Setting up the Right Environment**

Both approaches mentioned above will create good WIIFMs if they are supported by a good organizational work environment. The work environment is one of many factors that influences peoples' attitudes and behavior in the organization.

Table 4, below, lists the pros and cons of each approach in building WIIFM; top–down and bottom–up. Best practice will employ a combination of these approaches.

**Table 4: Pros and cons of WIIFM approaches**

| Approach | Pros | Cons |
|---|---|---|
| **Top–down** | • Effective in an organization with a weak learning culture<br>• Top management involvement and sponsorship is a must for any organizational initiative | • Perceived as pressure<br>• Could generate pretending behavior<br>• Needs to have a consistent reward and correction mechanism |
| **Bottom–up** | • Better employee involvement and engagement<br>• Strong basis for intrinsic motivation | • Could be hindered by hierarchy and bureaucracy |

Source: Sapta Putra Yadi (author).

In the top–down approach, there are five steps that are normally taken to develop a good learning culture:

1. *Being encouraged:* Top management encourages all people in the organization to fully involve and support knowledge-productivity initiatives through a series of positive reinforcement. Firm rewards are given to those who are supportive and none to those who are not involved.

2. *Feeling encouraged:* This is the situation that will be felt by the people in the organization. They are aware that involvement and support are essential.

3. *Being able:* People eventually become able to perform as expected. This ability is maintained and practiced consistently. They start enjoying the rewards while some receive correction.

4. *Getting used:* Consistently learning an ability by doing it makes people internalize what they are expected to do. In the long term the learning culture is entrenched in the corporate culture.

5. *Having culture:* Learning culture, which is aligned with the corporate culture, is the end result of this approach in a knowledge-productivity environment.

The bottom–up approach starts the process via a thorough socialization scenario. The organization creates a list of benefits that any stakeholders can receive if they are involved and supportive of knowledge-productivity programs. Benefits could be extrinsic or intrinsic compensation. It is important to educate stakeholders to find more benefits in doing something. The more powerful benefits they find, the more forward-propelling motivation they have to keep doing something. This is especially useful when the organization tries to establish a new habit and attitude in improving knowledge productivity.

The final key challenge is constant changes of leadership in the public sector.

## CONSTANT CHANGES IN PUBLIC-SECTOR LEADERSHIP

Constant changes in leadership in the public sector pose a significant challenge to retaining valuable tacit knowledge. Unless individuals' political and technological knowledge has been codified, internalized, and translated into organizational knowledge, the public sector loses these valuable strategic knowledge assets. Purposive KM efforts could mitigate the losses.

Constant changes in top leadership also affect the continuity of KM initiatives. KM practitioners need to engage top leaders early in strategic management initiatives (e.g., those having a high impact on policy development and implementation), get their buy-in and have them lead knowledge projects.

It is a given that every now and then, as the tenure of elected officials ends or as political administrations change, we can expect changes in top leadership. As the turnover of top leadership in public-sector organizations becomes inevitable, so does the loss of tacit knowledge that goes with it. Top leadership in the public sector mainly consists of directly elected political executives or appointees: the president, prime minister, the cabinet ministers/secretaries, and heads of agencies. The second layer of leadership consists of the deputies: deputy ministers, permanent secretaries, and undersecretaries, which could be a mix of political appointees, career executives or professional public administrators.

Customarily, political executives are expected to provide political judgment and policy guidance since they supposedly possess strategic political and technological knowledge, including useful networks and connections in the sector where they are assigned. Their

knowledge could prove helpful in engaging stakeholders, soliciting political support and approval of programs, and obtaining resources for the organization.

Political executives (also considered technocrats) bring their tacit knowledge of the needs and preferences of constituents as well as fresh ideas to respond to those needs. More often than not, however, political executives lack managerial skills and procedural knowledge of the bureaucracy. For their part, career executives or professional public administrators are expected to have "generalist institutional knowledge," i.e., knowledge of policy, management, delivery, regulation, and the technical work of government [28]. When they (the political executives) work well with professional public administrators (who know the basic structural, procedural, and institutional aspects of government), the public sector gains from the productivity of their combined knowledge.

By intermixing political and career executives, the chance of that combined knowledge being internalized by the organization is greater. If all goes well, successors could utilize this organizational learning and build on the knowledge acquired by the public-sector organization rather than reinvent the wheel. Yet, in some cases, political executives prefer to work among other political appointees for a number of reasons, thus depriving public-sector staff the opportunity to optimize the stock knowledge residing within the organization. At the time of turnover, unless the individual knowledge has been codified and translated into organizational knowledge, the public sector incurs loss of these valuable knowledge assets. Purposeful KM initiatives could mitigate the losses.

**Sustaining Knowledge Management in the Public Sector**

The public sector has implemented KM initiatives for many years and for good reasons. The public sector is usually the largest employer in any given country, hence there is potentially a large amount of tacit knowledge that can be tapped from its officers. In addition, the continuous pressure to raise service standards to meet increasing expectations from the public forces governments to continually find ways to improve existing practices and develop new ones.

The top leadership in the public sector typically changes every three to five years. On one hand, the leadership renewal exercise allows infusion of new knowledge in public-sector organizations and provides added opportunities for learning and growth. On the other hand, the changes in leadership may lead to changes in project priorities. If knowledge projects do not speak to the core business of organizations, they are usually the first ones to be reviewed. Unfortunately, a number of knowledge projects tend to speak to non-core operational needs of organizations such as information technology, human resources, and organizational development. Hence the impact of knowledge projects to the organization is minimal.

There are reasons why this is so. Generally, officers assigned to lead knowledge projects are new to the organization or have less than three years of work experience. Hence they lack the know-how and confidence to effectively engage top leaders to secure their buy-in for knowledge initiatives. As a result, knowledge practitioners tend to limit their KM projects to non-core business areas where they can have influence. Hence, a number of knowledge projects may be discontinued, or their support and sponsorship may be reduced after the review exercise.

Knowledge projects need to have strategic influence over the core functions of public-sector organizations. Knowledge projects should focus on core processes and key communities to reduce knowledge gaps, build capability, and improve productivity. Therefore, what this means is that KM practitioners need to engage the top leaders early in knowledge projects, get their buy-in, and have them lead strategic KM projects. For example, projects that have positively impacted policy development and implementation in the public sector will continue to be supported regardless of changes in leadership.

CHAPTER 4

# KEY PRINCIPLES

- Implementing Drucker's Principles for Knowledge-Worker Productivity
- Implementing Principles of Effective Organizational Knowledge Productivity
- Implementing the Principles of Effective Knowledge Asset Management

It is clear, from Chapters 1 and 2, that while there is great potential to increase the productivity of knowledge working in the public sector there are some significant challenges and obstacles that are peculiar to the public sector.

Furthermore, many principles of knowledge work, as initially outlined by Drucker and others from 1999 until now, described in Chapter 2, have not been addressed or implemented. This chapter argues for the implementation of these principles in relation to knowledge-work productivity and organizational knowledge productivity, and argues for a new approach to knowledge as "the key asset to be managed" in all organizations. It argues for identifying, developing, and applying key or critical knowledge assets in the organization. It also recognizes the powerful principle of "collaboration and partnerships" in knowledge productivity. Finally, we briefly introduce and describe the key competencies that have been identified for effective knowledge working, and their levels of management.

In Chapter 1 we stated that a better understanding of how quality and knowledge productivity fit together can help organizations to create and apply their knowledge assets more effectively in a more integrated approach. In chapter 3 we discussed a key challenge in the public sector: constant changes in leadership, which often result in losses of strategic knowledge assets.

## IMPLEMENTING DRUCKER'S PRINCIPLES FOR KNOWLEDGE-WORKER PRODUCTIVITY

In Chapter 2 we described six factors of knowledge productivity, from Professor Peter Drucker [1], and we introduced knowledge worker definitions from Davenport [17], and personal knowledge competencies by Ramírez and Nembhard [18].

A key message of this book is that, based on our research, observations, and experience in public and private organizations today, these sound principles of effective knowledge

working for organizational knowledge productivity have not been implemented. These principles are critical to the success of knowledge working and organizational knowledge productivity in the public sector, and must be implemented.

The key challenges for the authors of this book have been to describe how knowledge-productivity principles may be implemented in a framework that embeds these principles into strategies that identify and manage our knowledge assets, and provides methods, tools and techniques, that will cement these principles into a culture of daily knowledge work.

Chapter 5 will provide more detail, but in this chapter we take a high-level look at implementing the six factors of knowledge productivity, as shown in Table 5, below.

**Table 5. Implementing the six factors of effective knowledge work**

| | Factors | Implementation |
|---|---|---|
| 1 | The knowledge worker defines the task. | Empowerment through effective leadership, education, systems, tools, and training.<br><br>A clearly communicated and shared organizational knowledge strategy. |
| 2 | The knowledge worker is responsible for continued innovation in their work. | Effective education, knowledge management, collaborative and co-creative teamwork, communities of practice. |
| 3 | The knowledge worker continuously seeks training and learning. | Embedding continuous learning and knowledge-sharing processes into the business process, learning and knowledge platforms, and daily work. |
| 4 | The knowledge worker's productivity is not measured by output quantity alone, but also by the quality of the output. | Effective decision making based on good knowledge and sound judgment that leads to high quality. |
| 5 | Knowledge workers have to manage themselves and have autonomy. They also take responsibility in defining their contribution. | Redefine roles and responsibilities.<br><br>Provide knowledge working education, systems, tools, and training.<br><br>Clearly communicated and shared organizational knowledge strategy. |

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| | Factors | Implementation |
|---|---|---|
| 6 | Knowledge workers must be treated as "assets" rather than "costs." They must prefer to work for the organization, over all other opportunities. | Effective knowledge-asset management<br><br>Redefining roles and responsibilities around equal knowledge "associates"<br><br>Clearly communicated and shared organizational knowledge strategy |

Source: authors.

## IMPLEMENTING EFFECTIVE ORGANIZATIONAL KNOWLEDGE PRODUCTIVITY

There is no doubt that an organization that successfully implements Drucker's principles will see effective and increased knowledge-work productivity. However, this may be regarded as a bottom–up approach focusing on individuals, teams, and communities of knowledge workers. In addition, leadership and management can apply some organizational principles that are more top–down and would contribute to the organization's total productivity. We have identified several organizational knowledge principles which will be discussed below.

### An Effective Time Culture for Knowledge Work

Effective knowledge working requires daily allotted time to continuously learn, reflect, create new knowledge, and innovate. This is in opposition to the traditional time culture that many organizations practice today, which is focused on "doing." Fostering an environment that results in high-quality knowledge and decision-making requires two things:

1. The realization that high knowledge quality and high knowledge productivity are not based on maximizing the time spent. Research increasingly suggests that a knowledge worker is at their best for a maximum of 4.5–6 hours a day.

2. The time spent must allow sufficient time for the primary activities of a knowledge worker, which are researching, analyzing, reflecting, sharing, creating, co-creating, deciding, acting, and applying knowledge. In many public-sector organizations today, these activities are, at times, still viewed as supplemental to a worker's main responsibilities.

**Integrity and Intellectual Honesty**

Leadership must ensure that the values of the organization espouse:

- Respect for the creation, sharing, transfer, and application of knowledge that is evidence-based and of high quality. Knowledge is the key asset.

- Realization that integrity and intellectual honesty leads to increased public trust, the highest asset for any organization. People work together best when they trust one another.

- Complete transparency and open accountability, which develops high levels of competence and creates even more public trust.

**Inclusiveness**

Knowledge is a social asset and should be shared wherever policy and commercial considerations allow. It is critical for public-sector organizations to demonstrate inclusiveness to all stakeholders and a strong desire for citizens to participate and contribute.

**Collaboration and Partnerships**

Research shows that effective collaborative teams and communities can create new knowledge and lead to innovation. They can also better and more quickly reveal and transfer existing tacit knowledge in the heads of the knowledge workers than any other means. Public-sector organizations need to move towards a richer "knowledge ecology" in society based on effective collaboration and key partnerships.

## IMPLEMENTING PRINCIPLES OF EFFECTIVE KNOWLEDGE-ASSET MANAGEMENT

The most important knowledge assets in any organization are individual experts, effective collaborative teams, and naturally flourishing communities of practice (COP). These human assets are based on the ability to create, share and apply knowledge on a daily basis.

In addition to human knowledge assets, there are other knowledge assets that the organization must manage. These are often referred to as structural knowledge assets and relational knowledge assets. The discipline of intellectual capital management (ICM) refers to these

also as human capital and organizational capital, or societal and social capital, but they are broadly synonymous with human, structural, and relational knowledge assets.

In 2003 the European Commission (EC) co-funded a collaborative research project called Know-Net and the results of this project were published in the book Knowledge Asset Management in 2003 [29]. In essence, it argued that there are three key types of knowledge assets (de facto standard) to identify and manage [29]:

1. Human knowledge assets (leaders, experts, collaborative and co-creative teams, communities, and/or networks of knowledge), and the knowledge that they individually and collectively hold in their heads (tacit knowledge) within an organization;

2. Structural knowledge assets (knowledge that has been codified in some form into documents, databases, intellectual properly, copyrights, patents, business processes, standard operating procedures [SOPs], checklists, etc.) which are owned and retained by the organization; and

3. Relational or market knowledge assets, from outside the organization (customers, partners, stakeholders, professional institutions, etc.).

Each of the above types of knowledge assets can be measured and reported to management to determine their effectiveness and productivity, as well as any quality improvements. Some measurements will be quantitative (e.g., number of patents developed), some qualitative (e.g., business value and outcomes derived from knowledge-driven processes), and others both qualitative and quantitative.

One of the authors of this book led the EC project on knowledge-asset management (KAM) and the work has since encouraged the concept of "knowledge-asset accounting." Further details of this work are provided at the end of this chapter.

**Developing Levels of Knowledge-Working Competencies**

Today, the most important measurement identified for knowledge-worker productivity is the level of knowledge working competencies.

Chapter 2 cites Ramírez and Nembhard who believed that manual and knowledge work should be viewed as a continuum [18]. This view has an important implication on improving knowledge-work productivity. One way to effectively manage this improvement is through developing levels of knowledge-working competencies.

Chapter 2 also states that effective knowledge work is primarily concerned with the creation, distribution (or transfer), and application of knowledge [17]. In simple terms, each of these activities should become a competence of knowledge working, supported by the best methods, tools, and techniques available, such as the ability to:

- Continuously create new knowledge
- Distribute knowledge as fast as possible
- Apply knowledge wisely (effective decision-making)

For each of these key knowledge competencies, there may be sub-competencies to develop. Furthermore, levels for each competence could be measured, for example:

- *Level 1:* Understanding the knowledge competence to develop
- *Level 2:* An ability to apply the competence, but not consistently as yet
- *Level 3:* Consistent competency level
- *Level 4:* Competent knowledge worker who can also teach others (transfer knowledge)

Already, around the world, some forward-thinking organizations are starting to embed these knowledge-working competencies into their strategic and operational core competencies management and reporting systems. Further information on the identification, development, measurement, and reporting of knowledge competencies is referenced at the end of this book.

CHAPTER 5

# KNOWLEDGE-MANAGEMENT STRATEGIES

What might be the right strategy, the key frameworks, methods, and tools to enable effective knowledge-work productivity and organizational knowledge productivity in the public sector?

This chapter builds on the earlier published research and development of the APO to develop *a Knowledge Management Facilitators Guide* [30], *Knowledge Management Tools and Techniques Manual* [31], and *Knowledge Management for the Public Sector* [32].

## STRATEGIES TO CULTIVATE ORGANIZATIONAL KNOWLEDGE PRODUCTIVITY

Strategies for improving knowledge productivity need to reflect the characteristics of knowledge-worker productivity. The literature documents good practices, which can be summarized as follows:

First, knowledge workers or knowledge work should be classified before designing appropriate strategies for each type of knowledge work. Davenport argued repeatedly that knowledge workers should not be lumped into one category, as is often seen in the literature [17]. The reason is simple: knowledge work varies greatly in the outputs and intensity of knowledge involved.

Yet, how to categorize knowledge workers is open for debate. Drucker implicitly presented three types of workers: primary scientists, primary manual workers, and technologists [1]. His categorization was based primarily on the intensity of using knowledge in the work. Davenport proposed a number of possible criteria for classification, including the degree of collaboration required to do the work, level of expertise necessary to perform, degree of mobility required by the job, and number of projects taken at a time [17]. The literature does not provide a clear method of categorization. The categorization itself is a challenge in practice. Managers often resist the idea of classifying knowledge workers as it may create a perception of elitism and contradict the assumption of meritocracy in organizations [17].

Second, optimizing work processes is critical to enhancing knowledge-worker productivity. In knowledge work, process is not about the routines and the bureaucratization of work but about positioning all individual activities in the larger context in which they are performed. A process specifies which steps must be performed, by whom, where, in what order, and so on; it does not specify how each step is to be performed. Optimizing the process is both necessary and possible.

Taylor's principle can be applied in process optimization: to eliminate non-value-adding work that gets in the way of knowledge workers [1]. Knowledge workers should not spend inordinate amounts of time on activities that do not directly contribute to a process's outcome and are therefore of little value to the customer. The productive activities of the process need to be redesigned to minimize non-value-adding works [19].

Thirdly, it is important to promote the practice of autonomous knowledge workers. This view has two elements: (1) Giving knowledge workers autonomy, for example, those who do high-end knowledge work (i.e., those whose work is highly knowledge-intensive, work best with a "hire the best ones and leave them alone" approach) [17]; and (2) fostering an environment for knowledge workers that allows participation, interaction, story telling and trust [33]. People with deep smarts draw on a huge store of tacit knowledge, built through years of experience. They have many of the characteristics of any expert: the ability to make swift decisions on the basis of pattern recognition, to extrapolate from the known to the possible, and to make subtle distinctions that are invisible to a novice [33]. To benefit from their tacit knowledge they must be given an opportunity to share it [34]. Autonomy does not only mean freedom to work, but also requires a work environment that contains trust and rich opportunity for participation and interaction.

Fourth, integrating productivity measures is critical. Organizations have applied many measures, but what is lacking is integration. Davenport argued that three determinants of knowledge-worker productivity are known, including organization and management, work design, and IT [17]. However, there are surprisingly few instances where the three determinants have been addressed in an integrated way. In a similar vein, one can argue that the standardization of processes and promotion of autonomy are necessary. The challenge remains in finding the right combination of these two practices.

Finally, scholars and experts have advised each organization to experiment to find effective strategies [17]. Each organization has its own priority that may require different ways to measure and promote productivity. The tasks are not fixed, nor are production time and working methods. While individual measures may be known, succesfully integrating them into the whole organization can vary greatly. Therefore, each organization should learn to find their best strategy based on learning from others and also experimenting on their own.

**Remaining Questions**

As discussed so far, despite strong interest in KM, studies on knowledge productivity have been sparse. A number of issues remain unanswered, including (but not limited to) the following:

- *What are the principles for enhancing knowledge productivity?*
  Drucker's principles are for knowledge-worker productivity. Transforming individual knowledge productivity into team and organizational knowledge productivity requires additional principles and guidance. Identification of these principles is crucial, but has not yet been done.

- *What are the specific frameworks, processes, tools, and guidelines for practitioners to promote knowledge productivity?*
  As several scholars have argued, there is no practitioner model for knowledge productivity. A guideline of available tools and processes, as well as how best to use these tools to promote knowledge productivity, would be of practical value.

- *How to promote knowledge productivity in the public sector?*
  Most of the studies and tools for knowledge productivity have been made for the private sector. The public sector differs from the private sector in several ways, suggesting that lessons learned from the latter may not be readily applicable to the public sector.

The remainder of this chapter is our attempt to address these key issues.

## INCREASING KNOWLEDGE PRODUCTIVITY IN THE PUBLIC SECTOR THROUGH PARTNERSHIPS

In Chapter 4 we established that effective collaborative teams and communities lead to cultures with an entrenched knowledge ecology.

To enable this culture in the public sector, we must note that the effective transfer of knowledge between stakeholders requires clear KM strategies and goals. The successful implementation of such a program requires effective leadership. Hence, governments need to create and foster a culture that focuses on stakeholders, is supported by sufficient resources, and pays attention to maintaining formal and informal dialogues. Ideally, governments are able to collect the best expertise and knowledge available internally, while they collaborate with experts outside the government (with leaders in the business and academic communities).

Government servants act as policy makers. Those who are implementers must take into consideration the need to focus on customer service and the importance of consulting with stakeholders. The public sector has to change from a "government decides everything" approach to "participative decision-making."

**Customer Focus**

The private sector is increasingly recognizing the importance of cultures that focus on customer trends, needs, and desires. A customer-oriented approach to KM recognizes that customer-based knowledge can create value by encouraging a better understanding of how customers interact with an organization's key business processes. This understanding can lead to improved product designs and make it easier to manage customer relationships. The key factors to consider when creating a customer-focused knowledge culture include: organizational leadership commitment to customer-based knowledge and the efficient sharing of customer-based knowledge throughout an organization. Customers may not clearly articulate their own values or understand them and, as a result, private organizations increasingly try to enhance and facilitate dialogue using an array of interrogation and observation techniques that cover a complex set of customer behaviors and motivations. Similar to the private sector, governments increasingly recognize the importance of having a stronger customer focus to deliver improved services.

In addition, more and more government service providers need to compete with private-sector organizations, as a result of growing trends towards deregulation in sectors previously monopolized by governments, such as in telecommunications, health care, transportation, and electricity supply. A focus on customers, such as hospital patients and electricity-supply consumers, may reveal some valuable public-policy insights and opportunities for partnerships. Governments can better prioritize their customer-related efforts by classifying them based on the level of impact that an issue may have on a customer group, and the capability of the organization to address an issue. Governments, for instance, may seek to introduce a health policy that improves services for patients of greatest need, potentially shifting resources from less important areas to those identified as being deficient. However, it is important that governments recognize the customer relationship as dynamic and requiring continuous monitoring.

**Consultation with Stakeholders**

Effective communication between governments and stakeholders is fundamental for developing successful KM partnerships. It is important to conduct on-going consultations with stakeholders during each stage of the public-policy development process. These stages include identification, testing, analyzing issues and scientific information, post-policy

evaluations, and on-going reviews. While improved stakeholder participation can improve the quality and legitimacy of its services, governments must ensure that the participants they consult with are representative of the targeted stakeholder groups. In particular, disadvantaged groups must be considered (e.g., is their presence required or can they be adequately represented by another party?), as well as individuals' reasons for participation. Also their motives, whether altruistic, personal, invited, or coerced, need to be recognized. Many countries have pursued consultation at the community level, which is being driven by a trend towards decentralization and local empowerment.

Consultative mechanisms can be designed to equalize the power of community stakeholders over policy processes, such as community-based committees and focus groups. However, these need to be balanced against the availability of scarce resources and potential issues associated with consultation fatigue.

The government can obtain different opportunities for participation and control over policy development depending on the type of consultation process they use. For most public-policy issues, governments are unlikely to seek stakeholder participation beyond partnerships. Both consultation and partnership involve an exchange of knowledge, although a partnership implies that some stakeholders have greater decision-making control. Consultation may involve public and interest-group meetings that are designed to obtain stakeholder opinions, whereas partnerships may involve advisory committees with a greater level of formality and structure, designed to give stakeholders a greater say over policy content.

Generally, governments should adopt a strategic approach to consultation that can facilitate debate and develop more sustainable policy solutions to the identified issues. Consultation may initially occur with a targeted group of stakeholders, followed by wider consultation when governments wish to test policy options. Organized interest groups, such as industry associations or environmental societies, provide relatively cost- and time-effective consultation avenues for governments. However, governments may also need to develop consultation strategies to ensure that less-organized interests are considered.

Additionally, governments need to have clear and transparent objectives and develop structured approaches and processes to keep consultations focused. Hence, governments need to vary their consultation methods to suit different stakeholders, based on issues such as those outlined above (e.g., stakeholder power and risk, and stakeholder capacity to participate), and the type of public policy issue under discussion.

Contentious public policy issues such as industrial relations and the natural environment seem best suited to a partnership approach, whereas consultation may be more appropriate for more general issues such as planning issues associated with a new road project. Informative

marketing communication campaigns may be best-suited to policy issues that are well understood, and when the desired outcomes are based on changing human behaviors, such as public health or safety issues. Furthermore, successful governments need to be ahead of the general public policy debate in the wider community and be able to effectively manage emerging issues. Governments may seek to obtain advice on emerging issues through the public service or proactively use stakeholder consultation through, for instance, community-based think tanks. Governments that effectively use such consultative techniques are more likely to have up-to-date knowledge on issues and not be overtaken by matters that then require quick reactionary responses.

## THE APO KNOWLEDGE-MANAGEMENT FRAMEWORK

KM has become a key enabler of competitiveness and effectiveness in the public sector. Public-sector organizations are knowledge-based organizations and KM enables governments to formulate more effective policies and programs with increased transparency and public trust. KM can also deliver more-efficient and better-quality services by maximizing productivity in terms of process, time and cost.

Public-sector organizations, which are embarking on their own KM journey, can consider the simple-yet-comprehensive elements of the APO KM Framework to enhance individual and organizational knowledge productivity. The framework was designed based on the practical experience of organizations from several countries in Asia, and includes best practices from the USA, Australia, and Europe. It starts with an understanding of the mandate, mission, and vision of the organization and consists of three levels: accelerators, knowledge processes, and outcomes. The framework ensures that no important aspect of KM will be overlooked while reducing the variety and complexity of KM to manageable tasks.

### Mandate, Mission, and Vision

As can be seen in Figure 3, the starting point of any KM initiative is to understand the mandate, mission, and vision, that provide the strategic direction of the public-sector organization. The mission broadly states the basic purpose of the public-sector organization and what it is mandated for. The mandate of a public-sector organization provides the legal basis for its existence and the authority to perform its functions. The vision is an expressed statement of the desired future state of the organization. Clear understanding of the mandate, mission and vision facilitates the identification of core competencies to achieve the organizational objectives and outcomes providing insights for designing the KM programs, roadmap, and action plan for the organization.

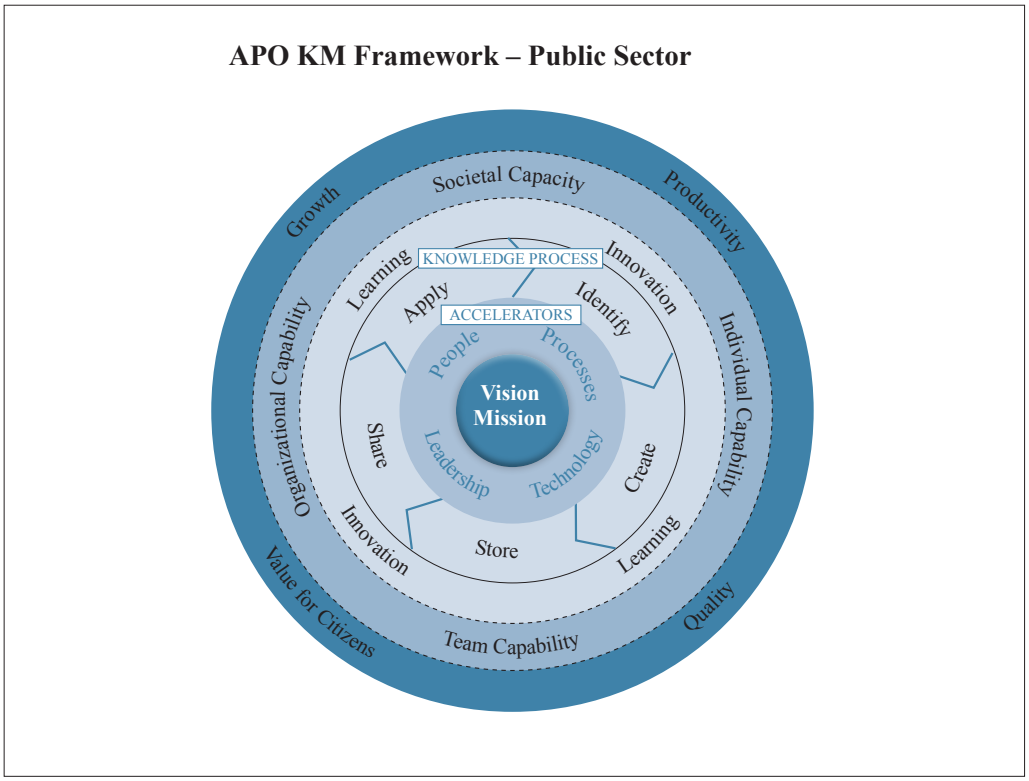


**Figure 3: APO Knowledge Management Framework for the public sector.**
Source: APO [31].

### Four Accelerators

The Accelerators comprise both KM drivers and enablers. They propel and speed up, or "accelerate" the KM initiative in an organization. There are four accelerators: Leadership, Technology, People, and Processes. Leadership is the driver, while technology, people, and processes are enablers.

1. *Leadership:* The leadership, which resides in the top management, is the driver of the KM initiative in the organization. Leadership ensures alignment of KM strategies and projects with the mandate, mission, and vision of the organization. Leaders identify KM champions who contribute to the successful implementation of KM projects. They demonstrate commitment and support by providing resources for the implementation of KM projects. They also institutionalize KM in the organization through the development and implementation of policies and structures to build a knowledge-enabled work environment, which encourages the acquisition, sharing, and application of knowledge.

2. *Technology:* Technology accelerates the knowledge process by providing effective tools and techniques, which assist in the creation, storing, sharing, and application of knowledge. Technology helps manage explicit knowledge through various tools, such as search engines, storage media, intranets, and extranets. In the case of tacit knowledge, technology facilitates online and offline collaboration, which leads to better communication and sharing at both formal and informal levels. Tools such as groupware and collaborative workspaces enable participation, across time and distance, in the process of knowledge creation. Technology provides a platform for retention of organizational knowledge.

3. *People:* People play important roles in key knowledge processes, namely creation, sharing, and application. In an organization, staff are considered users as well as generators of knowledge and are important knowledge assets as repositories of tacit knowledge, even explicit knowledge, before it is documented. They are part of the human capital (sometimes also referred to as human knowledge assets), and create and possess intellectual capital. For example, the material assets of a firm are of limited worth, unless it has people who know what to do with them. It is the value added by people (context, experience, and interpretation) that transforms data and information into knowledge. KM projects, and their contribution to realizing knowledge productivity, largely depend on employees' willingness to share knowledge. There must be a climate of mutual trust and benefit to encourage knowledge sharing amongst employees.

4. *Processes:* Processes refer to a flow of events that describe how things work in an organization. These are sequences of social and technological steps that enhance knowledge contribution in the organization. Systematic and effectively designed processes can contribute to improving organizational productivity, value for citizens, quality, and sustainability. It is useful to periodically check known assumptions during the process-design stage, and incorporate learning from best practices when redesigning them for better performance.

**Knowledge Processes**

Knowledge processes refer to knowledge development and conversion processes. The five widely accepted core knowledge-processing activities are: identify, create, store, share, and apply knowledge. They represent the second layer of the framework by forming an integrated process. The knowledge process starts by examining what the organization "needs to know and what it knows." Knowledge gaps are then translated into knowledge assets through the process of creation, storage, sharing, and application.

1. *Identify:* This is the initial stage of the knowledge process, where the critical knowledge needed to build the organization's core competencies is determined. Knowledge gaps and the types of knowledge required to efficiently and effectively perform the functions of the organization are defined.

2. *Create:* Creation is the process of addressing knowledge gaps through knowledge conversion and generation of new knowledge. There are many ways to create new knowledge at the individual and team level, for instance, by training, learning by doing, joint problem solving, or brainstorming activities. At the department or organizational level, new knowledge is created to enhance outputs and services, internal processes, policies, and procedures. Often, new solutions and great ideas are not recorded, either for learning or reuse. Hence, these remain solely as individual knowledge and are lost by the organization. It is therefore important to codify and store them.

3. *Store:* Knowledge storage involves the collection and preservation of organizational knowledge. This preserved knowledge is arranged so that it can be retrieved quickly and easily by its users. It is not easy to document individual experience and expertise (tacit knowledge). It is therefore important to know and retain those who have this expertise.

4. *Share:* Sharing occurs when there is regular and sustained exchange of knowledge among the members and stakeholders of the organization. The objective is to foster continuous learning to achieve organizational goals and desired outcomes. The sharing of contexts through *ba* (discussed in Chapter 6) can stimulate openness and building of trust. Mutual trust and benefit help foster a culture of sharing. Technology can be used to facilitate knowledge sharing and networking. Coaching and mentoring are other means of sharing. Public-sector organizations need to share information and knowledge across conventional organizational boundaries as they have to manage public needs which are beyond their jurisdiction and the capabilities of a single organization.

5. *Apply:* Application is the use and reuse of knowledge in the organization. It translates knowledge into action, e.g., innovating services, revising a public policy to make it more effective, or reengineering internal processes for greater efficiency. In the public sector, a lot of individual knowledge remains underutilized. Knowledge adds value only when it is used to improve products and services.

**Outcomes**

The knowledge process enables learning and innovation at all levels and areas in the organization. Learning includes discovering new insights, affirming what is already known,

and realizing the need to unlearn. New insights and unlearning can lead to innovation, which can include new ways of doing things, more efficient services, processes, technologies, and business models. Learning and innovation arising out of the knowledge process helps to build individual, team, and organizational capability, which in turn leads to societal capacity. These will lead to improvement in the quality of organizational outputs and services, productivity, value for citizens, and sustainability, thereby contributing to socioeconomic development. It can also encourage a higher capacity in civil society for more effective civic participation in policy processes at all levels.

- *Individual capability:* The learning and innovation that arises from the knowledge process increases the knowledge and skills of individuals, resulting in enhanced performance and higher productivity. Positive attitudes and strong moral and ethical values are the foundations of individual capability development. Individual capabilities collectively contribute to team capabilities, organizational capability, and societal capacity.

- *Team capability:* Knowledge sharing in a team enhances the team's capability. A team's capability is only as good as the individuals who make up the team. When individuals in a team are constantly learning and sharing knowledge with each other, team capability is enhanced and, through this exchange of different perspectives, it is also possible for new knowledge to be created.

- *Organizational capability:* Organizational capability focuses on improving internal processes and systems, core competencies, and designing innovative strategies to achieve organizational effectiveness and sustained relevance. To do this, public-sector organizations need to leverage on individual and team capabilities, and collaborate with external stakeholders such as citizens, clients, external providers, and other actors.

- *Societal capacity:* Societal capacity refers to the collective knowledge of individuals, organizations, and institutions that can be harnessed for inclusive growth. As the world moves toward a global knowledge economy, society must be prepared for the transformation. Both the public and the private sectors will have to work collectively to raise awareness and make an impact on the importance of knowledge and technology. Networking and collaboration can stimulate the creative potential of individuals and organizations to seize the enormous opportunities in society for inclusive growth and sustainable development.

- *Productivity:* Productivity focuses on the optimum use of resources, including information and knowledge, to produce better (and increased) outputs and services. Higher productivity can be achieved through the collective capabilities of individuals

and teams, technology, improved work processes and systems, enhanced collaboration, and better decision-making based on knowledge. Gains from productivity can include elimination of wastes (time, money, information, materials, energy, man-hours, and machines), better outputs (e.g., policies) and services, and increased value for taxpayers' money.

- *Quality:* Quality means better outputs and services that meet stated and implied expectations, which leads to higher satisfaction among those who transact with government and among citizens, who are the ultimate beneficiaries of public policies and programs. Improvement in quality is the result of knowledge application, learning, and innovation.

- *Value for Citizens:* Effective KM can provide a wide variety of benefits to citizens as a result of higher efficiency and savings for the public sector and businesses, but, more importantly, in terms of increased transparency and accountability of public-sector organizations through greater participation and engagement of citizens in policy-making and decision-making.

- *Growth:* For a public-sector organization, growth can be equated to organizational effectiveness and sustained relevance, which in turn builds greater public trust and confidence. Effective public service and the trust-based relationship between citizens and public-sector organizations concerning citizens' information places the public sector in a unique position to offer customized and targeted services to particular communities, regions, provinces, and groups within society.

CHAPTER 6

# KEY METHODS AND TOOLS

## LEADERSHIP AND EMPOWERMENT

One critical factor for increasing knowledge productivity is employee empowerment. It will not be possible to realize the full advantages of increased knowledge productivity without truly empowered employees who are provided opportunities to pursue self-improvement. It is almost impossible for employees to perform their jobs effectively without appropriate knowledge and skills. If employees are to feel empowered, they need knowledge that will enable them to comprehend and contribute to the performance of the organization. Organizations benefit when individuals are empowered as they then learn new skills, take on extra responsibilities, and resolve organizational problems with these new skills. In the long term, they become more competent.

If employees do not have a sense of ownership of the overall aim of the organizational knowledge-management (KM) system, effective knowledge-sharing and creation will fail. After all, most organizational knowledge comes from the expertise, learning, and experience of their employees. Through empowerment, employers can value their employees' expertise and help them communicate their knowledge by creating ways to capture, organize, and share knowledge across the organization. Thus, it can be concluded that empowerment is recognized as one of the critical implementation factors to the success of KM and increased knowledge productivity.

In the public sector, customer orientation is an organizational culture that builds up the required behavior for staff to respect and serve clients in the most efficient and effective ways, leading to service excellence. Employees can cope with the tasks assigned when they have the desired skills, knowledge, and ability, and understand organizational goals well. The most helpful tool in this field is empowerment. Empowerment means people's willingness to have self-control, self-care, and free will. It is observed that empowered employees tend to lean towards new ideas and creativity, such that they can respond effectively when dealing with broad environmental changes. This equates to one of the six factors of knowledge-worker productivity from Drucker, described in Chapter 2 as "Knowledge workers have to manage themselves and have autonomy. They also take responsibility in defining their contribution" [1].

One of the ways organizations could improve knowledge efficiency and performance is to empower their employees. Knowledge sharing is a critical aspect of empowered teams and a significant determinant of organizational performance. A team's leader plays a pivotal role in making knowledge sharing possible in the team. In an empowering organizational structure, leaders are capable of increasing each team member's self-efficacy and control over their work environment. When team members are empowered to make job-related decisions on their own, they need to have adequate information to ensure that their decisions are reasonable and justifiable given the context. As a result, they are more likely to share knowledge with one another before and during the decision-making process. Therefore, empowering leadership is the enzyme that stimulates and nurtures the occurrence of knowledge sharing.

Empowering leadership has five dimensions:

1. *Leading by example:* Referring to a set of behaviors that show the leader's commitment to their own work, as well as the work of their team members;

2. *Coaching:* Referring to a set of behaviors that educate team members and help them to become self-reliant;

3. *Participative decision making:* Referring to a leader's use of team members' information and input in making decisions;

4. *Showing concern:* Referring to a collection of behaviors that demonstrate a general regard for team members' well-being; and

5. *Informing:* Referring to the leader's dissemination of company-wide information such as mission and philosophy as well as other important information.

Employee empowerment is a multifaceted approach involving a variety of management practices aimed at sharing power, information, resources, and rewards with employees. It is essential, therefore, to understand how each of these practices can influence feelings and incentives to innovate. The relationship between practices aimed at sharing power with employees and innovation is one that is well-established in innovation literature. There are various ways in which granting discretion to employees can cause them to feel more encouraged to innovate. By loosening controls, managers give entrepreneurial employees the autonomy or freedom to tinker with existing elements and practices and reconfigure them in new ways.

Customer-oriented staff are able to achieve better-satisfied customers, which leads to better organizational performance, and ultimately results in increasing customer motivation, thereby creating a cycle that will continue. Empowered employees increase competitiveness and innovation in the organization as well as better responsiveness to customers. Empowerment improves the quality of service and makes employees' talents and motivation apparent. Today, empowering employees is considered to be an approach to increase performance and ensure the survival of an organization as well as to provide flexibility in an organization's internal changes as an important element in the organizational structure. Empowered employees help an organization increase competitiveness, innovation, and better responsiveness to customers. Empowerment also improves the quality of services and reveals employees' talents and motivation.

Front-line employees, for example, can be the source of many innovative solutions to problems facing public organizations since they are closest to the problems and more knowledgeable about how to solve them. Reformers expect improved performance to come from "turning the entire management system upside down" by empowering front-line employees to exercise their judgment, giving them the training and resources needed to get the job done, and holding them accountable for results.

A study conducted to investigate the relationship between KM and employee empowerment in institutions of higher education has shown that there was a significant relationship between KM and employee empowerment. In addition, KM predicted the aspects of employee empowerment in institutions of higher education. The recommendations are as follows:

- Informal interactions and relationships in an organization increase delegation of powers and more autonomy is given to staff members as to how to perform their tasks; the level of autonomy and decision-making power of employees to do their jobs increases the organization's ability to facilitate communication between different units, giving decision-makers at all levels access to the best information, holding regular meetings to exchange information between managers and employees, and increasing employee access to the information and documents required. Furthermore, senior managers can get people to believe that they have the capacity to work. These beliefs constitute the essence of feeling competent and developing a sense of autonomy.

- Knowledgeable workers have knowledge of professional expertise. These people have to have mastered internal-management control tools. Using these internal controls on knowledgeable workers could raise their professional commitment and strengthen their sense of self-sufficiency.

- Organizational managers should provide bases for employees, students, and others to share their experiences and, at the same time, ensure that, by doing so, they do not imperil their job security. In this regard, the following steps can be useful: encouraging employees to exchange knowledge and experiences with each other, constituting a group that comes together to change thoughts, creating a friendly atmosphere and trusted-employee group discussions to settle certain cases, increasing interaction between staff and directors, offering easy access to data for employees near their employment, increasing interaction among employees whose work is linked to that of each other. Also, this includes doing activities that can heighten the feeling of influence and trust among employees.

Accordingly, as a general idea in organizational communities, it can be said that designing and developing patterns and strategic perspectives in human resource empowerment is a step toward increasing knowledge productivity. However, there are a few issues to consider: convergence, high necessity of performance, and challenges for future investigators and researchers. These challenges mostly concern the issue that using management tools, such as KM, in large organizations and communities must result in dynamism and staff flexibility. Giving these tools and solutions unbalanced attention could be harmful to human empowerment and ideas.

Whereas leadership and empowerment are the most critical accelerators that drive knowledge productivity, we must ensure that we implement our strategies through three further key accelerators: (1) people (especially communities and collaborative teams), (2) knowledge driven processes and (3) technologies, which we will discuss later, in detail, in this book.

However, to put knowledge productivity into a broader perspective, we will first briefly list 20 of the key methods, tools and techniques that every organization should consider when embarking on an initiative to improve the management of organizational knowledge, and knowledge productivity.

From our APO publication *Knowledge Management Tools and Techniques Manual* we briefly list below the essential tools to consider. If you are interested in considering any of them further, the *Knowledge Management Tools and Techniques Manual* will inform you, for each KM tool, what it is, why its important, how to use it, where and when to use it, and provide examples and links to videos and useful web resources:

**Non–IT Tools**

1. *Brainstorming:* This is a simple way of helping a group of people to generate new and unusual ideas. The process is actually split into two phrases: divergence and

convergence. During the divergent phase everyone agrees to delay their judgement. In other words, all ideas will be treated as valid. During the convergent phrase, the participants use their judgment, but do so in a 'positive' manner - looking for what they like about the ideas, before finding flaws.

2. *Learnings and ideas capture:* A key aspect of knowledge management, at the personal and team level, is to more "collectively and systematically" capture the learnings and ideas that are taking place. Learnings and ideas capture is a guide to how to do this.

3. *Peer assist:* This is a technique used by a project team to solicit assistance from peers and subject matter experts regarding a significant issue the team is facing. Peer assists are part of a process of what BP calls "learning before doing", i.e. gathering knowledge before embarking on a project or piece of work. The peer assist meeting usually lasts from half a day to two days. Both the project team and the peer discuss about the project and provide solutions. The team gains project insights from their peers in the meetings. The peers gain as well, learning from the project and each other.

4. *Learning Review:* This is a technique used by a project team to aid team and individual learning during the work process. A learning review is different from an After Action Review (AAR). An AAR is usually conducted at the end of a formal project. It can be conducted after any identifiable event. An event can be either an entire small action or a discrete part of a larger action, e.g. a project-planning meeting.

5. *After Action Review:* This is a technique to evaluate and capture lessons learned upon the completion of a project. It allows project team members to discover for themselves what happened, why it happened, and how to sustain strengths and improve on weaknesses. It is structured as an informal discussion with the main team members of the project. An AAR can also be conducted at the completion of the project or any key milestones of a project that has a long duration. It is not a critique or a complaint session. AAR maximizes learning by offering a platform for leaders and members to honestly talk about the project. It is not a full-scale evaluation report.

6. *Storytelling:* In the context of knowledge management, since its inception, storytelling has been used as a powerful way to share and transfer knowledge, especially experiential and tacit knowledge. It is literally about telling a story; a person who has valuable knowledge tells stories of his/her experience in front of people who want to gain knowledge. Though the method is quite simple, storytelling is able to share a much deeper level of knowledge than just sharing information, when it is appropriately done. Storytelling has a strong power to share one's experience and lessons learned since effective stories can convey rich contexts along with contents.

7. *Physical workspace as KM tools/techniques:* Readers may wonder why physical workspace is selected as one of top KM tools/techniques. Physical workspace in this context literally means the settings in which we actually work, or to put it simply, physical aspects of our office. When we share or create knowledge, we usually interact with other people through face-to-face communication – we discuss, dialogue, or simply just ask a question. The physical workspace is where such human interactions take place – and it can support knowledge sharing/creation if it is well designed. You may think "we have desks for everyone, meeting rooms for internal meetings, and space for business talk. What else do we need?" But actually, physical workspace works much more than that.

8. *APO KM Assessment Tool:* It is a survey questionnaire designed to help organizations conduct an initial and rapid assessment of its readiness for KM. The assessment is carried out at the beginning of the KM program. Before starting on the KM journey, it is important for the organization to know its strengths and opportunities for improvements. The organization can then focus on its KM programs to address the gaps identified through the assessment.

9. *Knowledge Café:* A Knowledge Café is a way to have a group discussion, to reflect, and to develop and share any thoughts and insights that will emerge, in a very non-confrontational way. A knowledge café suspends all judgement, and normally leads to developing deeper insights and sharing than usual.

**IT Tools**

10. *Cloud Computing:* Data is actually stored on computers, often called servers. These computers can be linked together in a network. This network of computers can be connected to the Internet, publicly or privately. It is now possible, and commonplace, to connect our desktop computers, laptop computers, and mobile devices, such as tablets and smartphones, to this network of computers on the Internet, wirelessly (known as Wi-Fi). A new phrase that describes a network of computers that are connected on the Internet, and can be accessed by mobile devices wirelessly, is known as the "Cloud". It is not actually a cloud in the sky somewhere, but a metaphor for being able to connect from anywhere that has Wi-Fi to this network of computers, using mobile, wireless tools.

11. *Taxonomy:* A taxonomy is a technique that provides the structure to organize information, documents, and libraries in a consistent way. This structure assists people to navigate, store and retrieve needed data and information across the organization in an efficient way. It builds a natural workflow and knowledge needs

in an intuitive structure. Taxonomy can be considered as a classification system, i.e. "The Table of Contents" for an organization's knowledge capital. Taxonomy also provides pointers to human-based expertise and knowledge. A taxonomy typically includes a navigable hierarchy of concepts and terms, information "tags" that further identify and categorize content elements. Taxonomy can also include labelling of metadata, which allows the primary data or information to be systematically managed and manipulated.

12. *Document Libraries leading to Document Management:* From information management science, and from the library sciences, we have always been interested in better information and document management. Efficient and effective access to documents is the antidote to "information overload." Maintaining a "document repository" with good categorization and/or taxonomy and metadata is paramount to filing and, subsequently, searching and finding the right information at the right time.

13. *Knowledge Bases:* In the context of organizational knowledge management, we should externalize the important or critical knowledge that needs to be accessed, shared, applied, and developed by others. But knowledge management should certainly not be about externalizing and codifying as much knowledge as possible. That would simply be impossible and ineffective. We should consider codifying the knowledge that is considered "critical" to develop and apply in the organization and that would make "a big difference" to the organization's performance. This is where we can effectively create explicit "knowledge bases".

14. *Blogs:* A blog is a very simple "journal style" website that contains a list of entries, usually in reverse chronological order. The entries are typically short articles, or stories, often relating to current events. However, the entries don't have to be just text. They can also be photographs, videos, audio recordings, or a mixture of all these types.

15. *Social networking services:* Social networks have become commonplace nowadays. A social network is a group of people who share a common area of interest. Social network services are online systems that support social networking. The core services they offer usually include:

    a. Finding people who have similar interests or needs;

    b. Aggregating people into groups, or subgroups, and being able to communicate with those groups;

c. Sharing content such as documents, links to relevant websites, or even streaming video;

d. Act as a discussion forum and knowledge builder;

e. The social network helps you to connect with people whom you might not have had a chance to connect with; or it helps you to connect with people earlier than would otherwise be possible.

16. *Webinar:* Short for web-based seminar, a webinar is a presentation, lecture, workshop, or seminar that is transmitted over the Web using video-conferencing software. A key feature of a webinar is its interactive elements – the ability to give, receive and discuss information in real time.

17. *Advanced search tools:* Almost everyone who has used the World Wide Web will, at some point, have used a search engine. However, very few users take advantage of the advanced search tools that are offered by most of the search engines. Understanding these tools can result in a significant improvement in the quality of search results.

18. *Knowledge cluster:* The term 'knowledge cluster' is a term given to a group that, as a result of coming together in this new way, creates, innovates and disseminates new knowledge. In other words, different individuals, teams and organizations can now come together, virtually, on the Internet, to communicate better, collaborate, learn and share knowledge through the cluster.

19. *Expertise Locator:* Expertise Locator (Expert Locator, Who's Who) is an IT tool to enable effective and efficient use and/or share of existing knowledge by connecting people who need particular knowledge and people who own the knowledge. Sometimes, the system helps building new teams/projects by finding various expertise needed. Expertise Locator can be simple electronic yellow pages, more sophisticated systems to automatically search expertise, or even a mixture of IT and people (often called knowledge brokers) who support finding and connecting the person who wants the knowledge and the person who has the knowledge.

20. *Collaborative Virtual Workspace:* The essence of a collaborative virtual workspace is that it enables people to work together, irrespective of where they are physically located. In practical terms, this means that it has to involve a combination of document sharing, collaborative editing, and audio/video conferencing. Although suppliers offer software packages that contain all these elements, many users assemble their own collection of tools that meet their specific needs.

We will now discuss in detail three of the most powerful, major and strategic methods and practical tools for increasing knowledge productivity, especially the community of practice (COP), knowledge-enabled business processes, and knowledge platforms.

## COMMUNITIES OF PRACTICE

COPs are defined as an ideal platform to increase knowledge-work productivity in the public sector. We answer some questions regarding the significance of COPs in the public sector below:

- Is the public sector well positioned to address increasingly complex challenges that go beyond traditional boundaries?

  Many organizations and countries need to collaborate to find solutions to increasing complex issues. Usually these issues cannot be solved by one organization or country alone. Public-sector organizations are no exception. Typical issues relating to education, healthcare, social services, civil defenses, and security need more than just the respective ministry concerned to find effective solutions. In fact, the complexity of today's issues requires the public sector to purposely build, develop, and nurture environments to increase the capacity for learning, innovation, and collaboration across various government, non-profit, and private-sector organizations. Existing learning structures such as project teams, task forces, and committees, though effective for their intended purposes, can be made ineffective for addressing complex and persistent problems due to fear of change and bureaucratic red tape. Today the public sector is well-equipped to handle stable and recurrent problems and issues. However, many issues the public sector faces today require flexible arrangements and the willingness to adapt continually and to innovate. At the same time, platforms should be readily available to tap into the practical know-how and expertise of its people seamlessly and readily, to solve new and emerging issues effectively.

  The public sector needs to create opportunities for officers from various organizations to come together as communities of practitioners to regularly share working practices, toolkits, and resources. Their discussions can lead to the resolution of issues and challenges that go beyond traditional organizational boundaries. To effectively implement these engagements, officers need to be given autonomy to manage their own knowledge, and be empowered to participate in learning activities to build their capabilities. Knowledge work requires continuous learning and continuous teaching on the part of officers, and such engagements provide an ideal platform for that to take place.

The public sector can utilize COPs as one such engagement tool to access expertise and knowledge within and across organizations and increase knowledge productivity. This expertise and knowledge contributes to idea sharing and problem solving and fosters peer and stakeholder relationships. Numerous private-sector organizations have applied this approach for many years and have benefited from them. Even though the public sector has followed suit, more can be done to sponsor and support COPs.

- What are COPs, and how should we distinguish them from networks and traditional learning entities in an organization?

COPs are self-governed groups whose members help each other achieve excellence in their work [35]. These communities have always existed informally in organizations, but their existence has hardly been recognized, let alone supported. As a result, these communities have rarely achieved their full potential to bring performance to a higher level. Leading organizations in both the private and public sectors have discovered that COPs are ideal for engaging people directly when developing strategic capabilities. These organizations are finding that there is more that they can do to intentionally cultivate communities and integrate them in the organization. They have also learned the importance of doing so in a way that honors the integrity of communities as structures of personal engagement in which people connect their sense of professional identity with strategic aspirations.

**Elements of COPs**

To understand how COPs can be used to build strategic capabilities, it is necessary to keep in mind the three fundamental characteristics of COPs as shown in Figure 4, below.

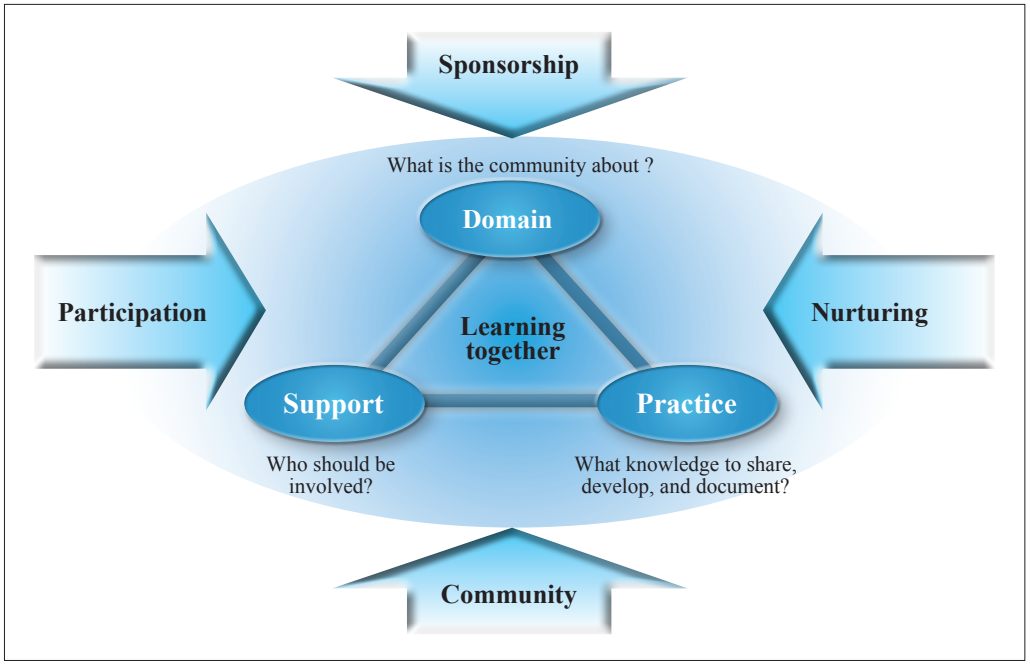


**Figure 4: A community of practice model.**
Souce: Wenger-Trayner [36].

*Domain:* The area of capability that brings the community together, gives it its identity, and defines the key issues that members need to address. A COP is not just a personal network: it is about something. Its identity is defined not just by a task, as it would be for a team, but by a key "area" of knowledge that needs to be explored and developed. The term "domain" suggests that a community "owns" this area. It consists of the set of issues and challenges that the community considers its own.

*Community:* The group of people for whom the domain is relevant, the quality of the relationships among members, and the definition of the boundary between the inside and the outside. A COP is not just a website or a library; it involves people who interact and who develop relationships that enable them to address problems and share knowledge.

*Practice:* The body of knowledge, methods, tools, stories, cases, and documents, which members share and develop together. A COP is not merely a community of interest. It brings together practitioners who are involved in doing something. Over time, they accumulate

practical knowledge in their domain, which makes a difference to their ability to act individually and collectively.

The combination of domain, community, and practice is what enables COPs to act as a social context for engaging learning. Domain provides a common focus; community builds relationships that enable collective learning; and practice anchors the learning in what people do. Cultivating COPs requires paying attention to all three elements in parallel.

Key community factors: Figure 4 indicates two key factors inside COPs that can only be fulfilled by the members of the community. These two factors are:

1. *Participation:* The first essential ingredient of a community's success is the active participation of members, who find value in the community's activities. They contribute to and benefit from its collective learning because it helps them address real challenges they face in their day-to-day lives. The level of participation need not be equal among all members. Some will participate more actively than others because the domain is more directly relevant to them. But without a critical mass of people who find practical value in participation, the community will wither.

2. *Nurturing:* All successful COPs have some members who take a "nurturing" stance toward their community. Not only do they participate as members, contributing and benefiting like everyone else but they also value the existence of the community to the point of being willing to invest themselves actively in sustaining it. COP leaders take such a stance. But they are rarely successful over the long run unless they are joined by others who, in their own ways, contribute to nurturing the community.

Figure 4 also indicates two key factors outside COPs, that can be, and usually are, fulfilled by people who are not members. These two factors are:

1. *Sponsorship:* COPs in organizations need executive sponsorship to reach their full potential to contribute to the organization. Sponsorship, as opposed to management, is a way to channel resources and attention, providing a two-way connection with the formal hierarchy while recognizing that communities do not fit neatly in traditional organization charts. The sponsorship structure for COPs often involves various levels. A given community usually has one or more sponsors who value what the community can contribute to the organization. The system of communities as a whole needs to be sponsored by a high-level executive or a leadership team. It may be necessary to secure some degree of sponsorship in local units to recognize the value derived from communities for the local unit and thus legitimize the time and effort practitioners invest in their communities.

2. *Support*: Organizations that have adopted a strategy of cultivating COPs systematically have found that people who take a nurturing stance toward their communities can usually use some help. These organizations have established a support team for this purpose. This support may include coaching community coordinators, taking care of some of the logistics, maintaining technological infrastructure, and helping with some projects that require more time than practitioners can give, such as writing, best-practice transfer, and website management. In some cases, a useful role of the support team is to coordinate a community for COP leaders, through which they help each other, develop their practice, manage cross-community issues, and develop a collective voice in the organization.

**COP Versus Other Learning Entities in Organizations**

Figure 5, below, illustrates the difference between COPs and other familiar organizational structures [34]. This illustration is useful because it is often easier to understand definitions by contrasting them with things that we know.

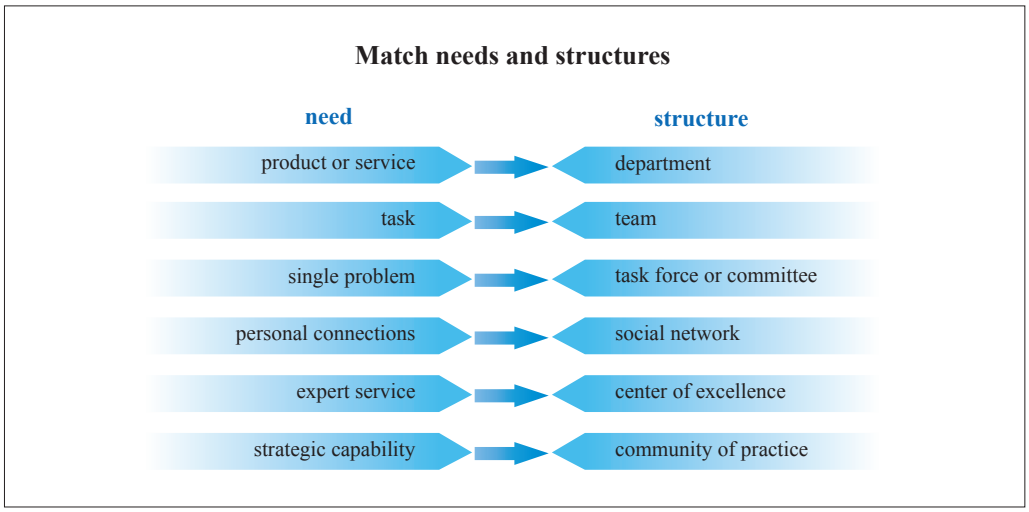


**Figure 5. COPs versus other learning entities.**
Source: Wenger, et. al.[35].

"Team" is a term that often requires explanation, but in the public sector context, "task force" will also require some explanation. The main distinction is that a team is focused on a task. When the task is accomplished, the team disperses. Team members are likely to learn something while performing that task, but this learning does not define the team. It is the task that keeps them together, and their respective commitment and contributions to the task that is the main source of trust and cohesion among them.

A task force is a special type of team pulled together to address a specific problem, usually of broad scope. Often people are selected in order to represent an organization or a perspective in the negotiation of a solution. It is their commitment to the process that keeps them going and respect for the voices they represent that builds trust.

A COP is held together by the "learning value" members find in their interactions. They may perform tasks together, but these tasks do not define the community. It is the ongoing learning that sustains their mutual commitment. Members may come from different organizations or perspectives, but it is their engagement as individual learners that forms the most salient aspect of their participation. The trust that members develop is based on their ability to learn together, to care about the domain, to respect each other as practitioners, to expose their questions and challenges, and to provide responses that reflect practical experience.

These days, with all the networking sites appearing on the Internet, it is also useful to contrast networks and COPs. All COPs are networks but not all networks are COPs. A community requires an identity around a domain; a collective intention to learn a practice and steward a domain.

**Where COP Sits Best in Organizations**

While COPs provide an effective platform for learning and building capabilities, it is important to understand where they belong so that the right expectations are set within and across organizations. For the "plumbing" of knowledge sharing, such as uploading projects reports or responding to a colleague's phone call, it is better to simply include this in everyday job responsibilities. People have to do it because it is part of working in the organization. You do not need a COP for that. In addition, for certain activities such as developing complex knowledge assets or running substantial research or development projects, it is necessary to create special teams that are funded explicitly. These things require too much time to be left to voluntary participation and hence it is not advisable to form COPs for this purpose. However, in between these two levels lies the level of people's own passion, learning needs, and personal connections with colleagues. This is the level of the heart. At this level, COPs can form in a voluntary fashion because the identities of members and the needs of the organization converge.

**Downside of COPs**

It is also important to take note of the potential downside of COPs. COPs can be used as platforms to drive the personal agenda of leaders. COPs can be used like lobby groups to promote and even advocate initiatives that may lead to personal gains for community

members at the expense of improving practice standards. Therefore it is usually a good practice to rotate community leadership after an agreed period of time.

**Inter- and Intra- COPs**

COPs can be formed involving members within an organization only. In this case they are called Intra-COPs. COPs can also be formed involving members across organizations. In this case, they are called Inter-COPs. Usually the sponsorship and support structures for Intra-COPs can be established in a shorter period of time compared to Inter-COPs as these issues are addressed and implemented by a single organization.

**Why Should the Public Sector Promote COPs?**

*COPs can Address Cross-Organizational Issues and Increase Capability Levels*

One of the key challenges faced by the public sector is the continual need to either maintain staff capability levels or raise them to meet new cross-organizational challenges. This will require officers to stay connected to best practices and new approaches, and apply innovative tools to solve challenges effectively. It will also require officers from within and across organizational boundaries to continually come together, share, and learn from each other. Officers should be empowered to decide what tasks they can do, what toolkits they should produce, and how they should apply them at work. To this extent, the role of the public sector is to provide the necessary support and sponsorship to convene and cultivate COPs at the national level. The public sector should maintain and nurture open communication channels for COPs between leaders and community champions to identify suitable areas for practical and effective capability development. Communities that aim to build those strategic capabilities considered important by the public sector should have more visible support and sponsorship compared to bottom–up COPs.

For example, the ADB in its 2010 COP report indicated that a COP around Governance and Public Management was operational in January 2010 [37]. Since then the COP has strengthened its membership from 44 to 90, to include additional experts from regional departments, operational support departments, resident missions, and the informal networks for financial management, civil society cooperation, e-governance, and disaster risk management. It has functioned as an informal network for sharing and disseminating knowledge on governance, public management, capacity development, and other governance-related themes and has performed a peer review function for country partnership strategies, projects, and internal and external knowledge products.

The story of the public involvement COP at Health Canada demonstrates how a department can approach the difficult challenge of building a strategic capacity across a complex organization [38]. The secretariat in charge of the initiative decided that the most important task was to convene a department-wide community through which practitioners could learn from each other. Such a COP approach makes it possible to focus on key department-wide capacity without the need for a correspondingly large formal structure. Rather it reaches across formal boundaries to build on shared passion and create peer-to-peer relationships among practitioners. This enables them to develop their collective and individual expertise, and thus to "manage" the knowledge they need for themselves.

In an effort to develop municipal capabilities between World Bank urban specialists and several mayors of capital cities in the Central American and Caribbean region, an Ayuda Urbana initiative was formed in 2002 [39]. A group of ten cities decided to participate in the initiative: Guatemala City, Havana, Managua, Mexico City, Panama City, San Jose, San Juan, San Salvador, Santo Domingo, and Tegucigalpa. They recognized the value of connecting with peers across borders to address problems and challenges that cities in the region all face. The people involved in the project include the mayors and their staff in each of the ten cities, in particular, specialists in various areas of urban development and management. There was an urgent need for improved urban development and management knowledge and capabilities.

Snyder and Briggs present case examples of the federal government's experience in leveraging on COPs to build capabilities across government organizations in the USA [40]. For example, the SafeCities COP focused on reducing gun violence, addressing issues such as gun-tracing methods, community-policing strategies, after-school programs, crime mapping tools and methods, and how to involve faith leaders. The COP developed tools and methods related to a number of gun-violence-reduction approaches that the Justice Department established as particularly effective for preventing gun violence. The Federal Highway Administration formed a COP to reduce traffic crashes by applying "rumble strips" on the sides of roads to prevent run-off road injuries and fatalities. It also aimed to identify and promulgate what rumble strips can do to prevent traffic crashes, how to justify the investment, and ways to measure the impact. Community members developed templates for making the business case for rumble strips, case studies and research on results, discussion forums on specific issues such as how to mitigate the negative impact for cyclists, a directory of practitioners that assists members to find who can help, information on various types of rumble strips, and pros and cons.

**Attracting, Retaining, and Developing Talent**

An effective way that COPs build organizational capabilities is by providing officers with a platform for learning and for applying new ideas, practices, and innovations. For officers to function as effective knowledge workers, (as described by Drucker in Chapter 2) continuous innovation has to be part of their work. Knowledge work requires continuous learning and continuous teaching, and COPs provide excellent platforms to increase the productivity of quality knowledge work by officers. Officers need to be empowered to determine what they want to learn, how they want to learn, and what they want to produce. Before an idea gets implemented in the industry, officers can test that idea among the organizations they represent within the community. Theory is neat, however practice is messy. Hence officers need a safe platform to share their messiness before an idea or a practice can be refined further. Learnings from the test can be used to develop a more robust product or service that can be implemented across the public sector. In addition, COP participation builds relationships and fosters a sense of professional identity with colleagues. This informal sense of belonging among officers and associated opportunities for professional development are the most reliable hallmarks of organizations that attract, retain, and develop top talent.

**How can the Public Sector Cultivate COPs Within and Across Organizations?**

This section defines different kinds of sponsorship and support roles required to start and cultivate COPs across organizations. Focusing on COPs is a strategic initiative because knowledge is a strategic asset. It is only in the context of an evolving knowledge strategy that one can assess the value of investing in various knowledge domains and corresponding COPs. This corporate governance strategy involves managing a portfolio of knowledge that requires various levels of attention and investment; similar to managing a portfolio of products or markets, but applied to knowledge. A broad and systematic COP needs a champion, such as a respected senior executive who cares deeply about the potential of COPs, to weave the sector around critical domains of knowledge, and thus develop the strategic capabilities the sector needs in order to succeed.

The champion is also someone who has a strong vision of how COPs can contribute to the success of the sector and who has the legitimacy to make others understand and share this vision. In general, this would mean someone with practice or line authority, who can speak for the business needs of the sector.

While sponsors focus on one domain or a specific group of related communities, the champion considers entire constellations of communities across the sector and its aggregate relation to the strategic direction of the sector. The role of the champion is to be a public and

recognizable voice for communities in the sector. In practice, this entails signing memos and giving speeches rather than a lot of busy work. To make this possible, the champion relies on interactions with various groups and people to represent the work of COPs on the leadership team, bring up issues, and make recommendations. Examples of the roles of a champion include to:

- Think about the broader vision for COPs in the sector
- Seek to leverage the strategic value of the portfolio of domains as a whole
- Care about making the organizations represented in the COP hospitable to communities with respect to issues of their organizational strategy, culture, and structure
- Help other executives understand the initiative
- Provide high-level recognition to highlight and reward accomplishments and successes
- Bring visibility to communities by talking publicly about their work, and thus legitimize community activities, inspire participation across the sector, and encourage other executives to become sponsors.
- Consult with the Advisory Board to ensure that the initiative is moving along
- Keep in touch with the COP leaders and sponsors

Championing COPs is an ideal channel to manifest one's care about a sector as a whole and the long-term success of the organizations within that sector. It is a way for senior executives to leave an important and enduring legacy that will help build capabilities for practitioners from organizations within the sector.

**Domain-Specific Sponsorship Within and Across Organizations**

COPs formed around a specific domain may involve members from one organization (Intra COP) or several organizations (Inter COP). For Intra COPs, sponsorship provides organizational recognition and legitimacy to communities and plugs them into the organization without subsuming them under the organization's formal reporting frameworks. It provides a two-way connection between communities and the formal structure of the organization. Sponsorship is different from traditional management in that it does not involve reporting relationships: an executive sees that a community can deliver value and therefore makes sure that the community has the resources it needs to function and that its ideas and proposals find

their way into the organization. For Inter COPs, the sponsorship role is usually performed by a lead public-sector organization, which has a business interest to the domain of the COP. For example, for finance-related Inter COPs, a country's Ministry of Finance will usually provide the necessary resources to sponsor and support such communities. In this case, a senior executive from the Ministry of Finance will be assigned as the sponsor for such communities.

A domain sponsor is usually a senior executive who has either a personal interest in or passion for the domain, or whose business has a strategic need for world-class capability in the domain. While there is often one specific sponsor who is designated for a COP, it is more useful to think about the sponsorship structure that enables the communities to thrive and have an impact on the performance of the sector or the organization. This includes high-level executive sponsorship as well as the sponsorship of line managers who control the time usage of employees.

The role of domain sponsorship includes:

- To legitimize the work of the community in terms of strategic priorities
- To keep close contact with the leadership of the community
- To discuss the learning agenda, successes, promises, challenges, and problems of the community
- To channel appropriate resources to ensure sustained success
- To take action when the work of the community is hampered by hoarding of information by members and organizations
- To give a voice to the insights and proposals of the community so they affect the way business is conducted
- To negotiate accountability between line operations and communities (e.g., who decides which "best practices" to adopt)
- To ensure that the managers of community members understand the value of participation in the community
- To make the domain more visible to the organizations represented in the COP

**Support Team Structure for COPs Across and Within Organizations**

COPs need some operational support to reach their full potential across sectors and within an organization. The support team is a key component of an organizational structure to cultivate COPs and takes care of all the operational issues associated with the COPs. Community leaders often appreciate having someone to turn to for assistance and advice with community-development issues. Successful COPs don't happen by accident. They must be developed.

The support team leader is the overall operational coordinator for communities in the organization. This person provides a point of focus for COPs across a sector or within an organization.

The support team:

- Builds and supports the sponsorship structure
- Oversees the COP initiative at an operational level
- Education about communities of practice across the sector or within an organization
- Provides support, education, mentoring and coaching to community leaders
- Provides community logistics and logistical support for community events (workshops, phone / web conferences)
- Liaises with IT personnel on the technological infrastructure for community activities, such as providing advice on the best combination and use of collaboration tools
- Provides support for the life-cycle management of COPs: planning, launch, growth, maturity, and then either closure, splitting or merging
- Performs or provides assistance for COP assessment and measurements

In summary it is important to note that the support team helps communities with the more formal aspects of knowledge management such as documenting and transferring "best practices," producing documented knowledge assets for recurring problems, collecting records and summaries of interactions, and validating knowledge that comes out of communities through research. The support team coordinates the structures that connect COPs with each other, such as a community-leaders' council (to provide governance

support). In so doing, the team assists with managing the "system of domains," recognizing that each COP should not be regarded as independent from the others. Finally, the support team facilitates the relationships with sponsors and reports to the leadership about the "state of the communities" as input for strategic planning.

**How can Community-Learning Activities Meet Learning Needs and Build Capabilities?**

This section describes the learning activities listed in Figure 6, below [41]. These are organized into seven clusters:

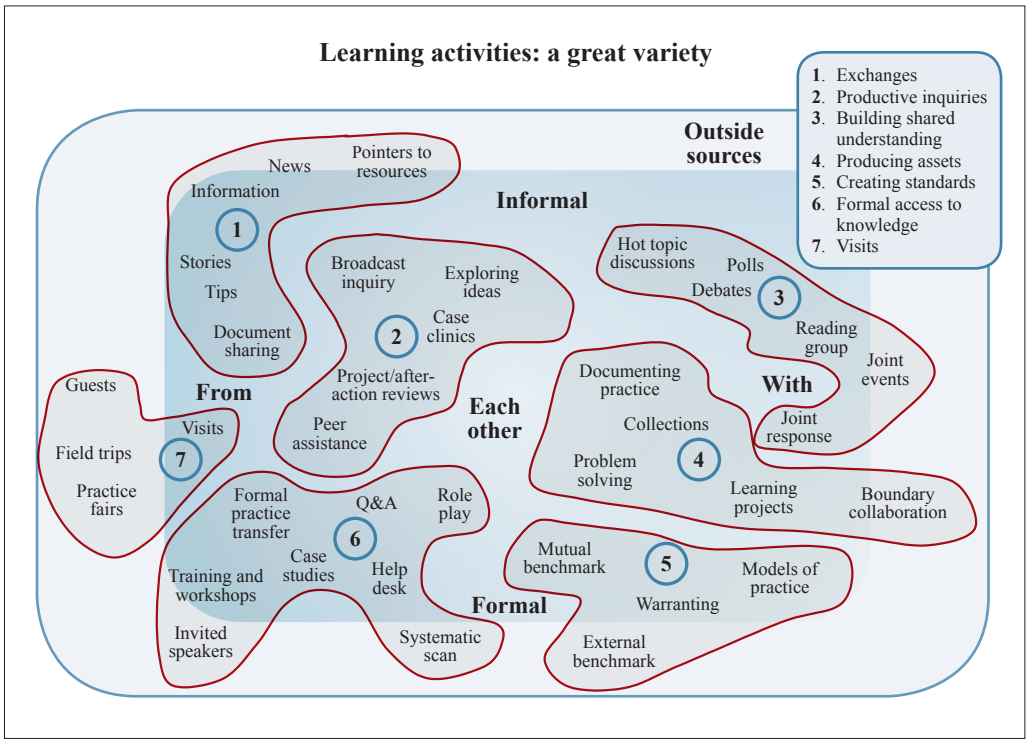


**Figure 6. Typical learning activities in COPs. COPs, communities of practice; Q&A, questions and answers.**

Source: Wenger-Trayner E., Wenger-Trayner B. [41].

**Sharing**

Sharing is an essential learning tool in a COP and is the central act, such as when members volunteer some piece of knowledge to the group, either spontaneously or in response to a query. Exchanges of this type are primarily "learning from" but they also involve some "learning with" when they lead to negotiation about the value, relevance, or applicability of a contribution. These activities include the sharing of information, news, and pointers to resources, stories, and tips.

**Productive Inquiries**

While all activities to some extent use the challenges in their practice as a learning curriculum, productive inquiries make this the central structure of the learning activity. A member faces an immediate challenge in his or her practice and requests help from the community. Such help is provided openly in the communal space, online or face-to-face, so that everyone can comment on contributions, reinforce, disagree, and refine them, until the input reflects the view of the community. Members learn from each other's experience and advice, but they also learn with each other as proposed solutions are evaluated and debated. Productive inquiries take various forms such as case clinics (formal consultation), broadcast inquiries (just-in-time help and advice), project reviews (feedback, evaluation, and commentaries), and exploring new ideas.

**Negotiating Shared Understanding**

Members of a community not only give each other information and advice, they can also help each other deepen their understanding of the domain, its concepts, issues, and literature. In these activities, members act as sense-making partners. Such collective sense-making primarily involves "learning with" other members, hence their location on the right of the figure. Of course, members also "learn from" each other as they explore their mutual perspectives and opinions. Typical activities include discussing concepts, emerging issues, and hot topics, reading group and seeking consensus for a community "position."

**Producing Assets**

Sometimes members decide collectively that they need a document, a tool, or a solution that does not exist, and that the community will put energy into producing this "asset" in a concerted fashion. These activities depend on a certain level of maturity on the part of the community because they do not necessarily address immediate needs and require a commitment to the long-term development of the practice. Such activities include documenting practice, building systematic collections of resources, and problem-solving (addressing common recurring problems).

**Creating Standards**

All communities develop tacit standards just by the way they assess situations, react to queries, and accept or refuse contributions. But some activities are intentionally geared toward the creation of explicit standards. Typical activities include mutual benchmarking (comparisons among members), external benchmarking (comparisons with external performance), and warranting (formal endorsement of practices).

**Formal Access to Knowledge**

Some communities engage in formal events and processes to provide access to members' experience, to the community's established practice, and to other forms of expertise. These activities include formal practice transfer (a formal process of adapting a work practice developed and tested by the community to other locations), training and workshops, and guest speakers.

**Visits**

Structured and unstructured visits are useful activities that bring life to a community. They enrich the conversations and deepen the opportunities for mutual learning when members see each others' situations. Such activities include mutual visits (members of geographically dispersed communities making it a habit to visit each other), guest participants (activities opened to non-members), field trips (visiting an organization or site relevant to the practice), and practice fairs (communities can have booths to display what they are doing).

**How do COPs get Measured?**

At its best, measurement provides guidance for the wise investment of limited resources. At its worst, it focuses practitioners on the wrong goals. Not surprisingly, measurement is a controversial issue when it comes to COPs. It seems to trigger ideological fights between community purists who will have nothing to do with it, and organizational purists who will do nothing without it.

When done well enough to reflect their contributions intelligently, measurement is good for communities. Communities that have taken the trouble to measure their value systematically have come up with very good returns on investment, even focusing only on their most tangible outcomes. Measurement allows communities to speak the organization's language, ask for resources, and seek recognition. This can protect them from the vagaries of organizational politics, business cycles, or dependence on the vision of specific executives, who invariably move on. Good measurement also enables members to become more aware of the value their communities create, which is often only partially visible to them. It is an opportunity for taking the pulse of the community and reflecting on its activities. However, good measurements of community contributions take time and few communities are given the luxury to do it well. Moreover, a large part of the value that communities produce is long-term, intangible, and difficult to capture in quantitative measures: stories and conversations are better vehicles for this. Relying too much on formal measurements regarding communities is a good way to lose touch with them.

**Toolkit: Telling stories about the value of communities and networks**

Stories are the ideal means to articulate the value of participating in a community or network. They can reflect very specific instances in which something that happened in the communities or networks helped members in some way. Members can use this template as many times as they want if they have more than one story to share [41].

**Specific value-creation stories**

Use this template for telling specific examples of how your participation has created value.

A typical value-creation story has a sequence of four main steps, and sometimes five: (1) the activity you participated in, (2) what you gained out of it, (3) how you applied it, and (4) what the outcome was.

Use this template for concrete examples of value creation. As an example, a member might want to describe how someone shared a good idea for an activity which he or she used in the classroom and ended up making the member's lessons more engaging:

1. In the first row, a member would describe the moment at a meeting or in a conversation when someone shared that idea.

2. In the second row, a member would describe the idea itself: What was it about? Why did members find it potentially useful?

3. In the third row, describe how a member used that idea in his own environment. How did the member apply it and to what purpose? Did the member need to adapt it? What happened in the workplace?

4. In the fourth row, describe what the outcome was (a) for the member's own success and/or (b) for the success of his or her organization. Did it improve the performance of the member in the workplace? Is he or she more confident in dealing with issues related to his or her practice? Did the key performance indicators (KPIs) of the member's organization improve?

5. Members may use this storytelling guide for as many specific value-creation stories as members want to share. The guide is shown in Table 6.

**Table 6. Value-creation story: filled-out example**

| **Name** | **The KM COP** |
|---|---|
| **Typical cycles** | **My story** |
| 1. **Activity**<br>Describe a meaningful activity you participated in and your experience of it (e.g., a conversation, a working session, a project). | *I was attending a session about facilitation techniques and everyone there was quite engaged in the conversation. Someone was describing his difficulties getting colleagues to see their issues and challenges around a particular process. One member from the community told us about the Fish Bowl Facilitation technique she has been using to encourage her colleagues to seek answers to their challenges. I thought it sounded really good. Some other members and I became quite excited and asked a lot of questions. We spent the rest of the meeting on it.* |
| 2. **Output**<br>Describe a specific resource this activity produced for you (e.g., an idea or a document) and why you thought it might be useful. | *I began to search the literature to dig out more information about the Fish Bowl technique. I found two videos on YouTube which explained the principles and the process behind this technique. I observed the videos and took down key points. I then prepared my own guiding principles and process checklist for my Fish Bowl technique.* |
| 3. **Application**<br>Tell how you used this resource in your practice and what it enabled that would not have happened otherwise. | *At my next meeting with my colleagues, I volunteered to facilitate the conversation using the Fish Bowl technique. I made minor changes to the steps in the process to accommodate all of them in the room. I prepped the case presenter and ensured that the issues to be discussed would resonate well with all of those in the room. After the session was over, my colleagues felt that they had learnt much from the conversation they had had. The case presenter was able to garner possible solutions and suggestions to address his challenges in just 45 minutes or so. The session is an eye-opener for all my colleagues as they experienced first-hand the power of effective conversation through this technique.* |
| 4. **Outcome**<br>a. **Personal**: Explain how it affected your success (e.g., being a better teacher, job satisfaction, student's grade) | *Business leaders to identify opportunities where KM can help reduce knowledge gaps. After using this technique for the past three months to facilitate discussion, I became more confident in facilitating discussions among cross-sections of the departments. I was also able to achieve more clarity about their business challenges and identify specific areas in which KM can be used to reduce knowledge gaps.* |

*(continued on next page)*

(continued from previous page)

| Name | The KM COP |
|---|---|
| **Typical cycles** | **My story** |
| b. **Organizational**: Has your participation contributed to the success of your organization (e.g., metrics they use) | *Generally the business leaders and other colleagues were pleased with my service and with the KM team. They saw the value-add that the KM team can provide, and began to share more areas where they think KM can help them. Through the series of conversations, we were able to address and/or reduce knowledge gaps in four business processes within three months. This is a good start to the KM team's and my organization's key performance indicators.* |

Notes: COP, community of practice; KM, knowledge management.
Source: Wenger E., et. al. [41].

**What can we Learn from Successful Implementations in the Public Sector?**

1. Have a critical mass of engaged members: Getting a large percentage of members to actively participate in a community remains difficult. However, healthy communities have a core group of members, who regularly attend meetings, contribute ideas, and help other members. Collaborative effort to establish vision, mission, and expectations of the community leads to a greater sense of ownership.

2. Center learning activities on issues members currently face: Designing activities around issues that members are grappling with helps them see the value of participating in communities. More communities are actively engaging members to identify issues for discussion and to address the challenges that their members face.

3. Provide secretariat support and training: Successful COPs do not happen by accident, they need careful cultivation and nurturing before they can develop into a conducive learning and sharing platform. A COP with good support from its secretariat is able to offer members high value for their time as they can collate notes, liaise with fellow members at events, and handle logistical and administrative matters. This enables the core group to focus on shaping the content and the facilitation process for learning activities. In the past few years, government agencies have facilitated workshops on COPs to improve knowledge, assist agencies in the start-up and development of COPs, and advise core groups on leadership and sustenance of their COPs.

4. Provide strong leadership, sponsorship and recognition: The strong support and enthusiasm exhibited by an organization's leaders enables the smooth and speedy launch of COPs. Such organizations provide sponsorship, support, and recognition to

community leaders and the core team members to enable the community to realize its full potential. It is critical that a core group of enthusiasts keep the community going. As people are not likely to volunteer to lead such work even if they may be interested, it is important that due recognition is given to the members that take on these roles. In addition, a number of organizations hold an annual COP festival to enable communities to showcase and share what they are achieving as a community in their domain of interest. This will serve as a means to stock-take communities in a light-handed way, where we celebrate achievements, rather than bring scrutiny and administrative red tape into COPs. At a fair, each community could be given a booth to showcase their processes, accomplishments, and challenges that they encountered as a group. Members taking part in the fair are encouraged to move around to visit the various booths and interact with the communities. The intent is to facilitate and support live conversations among the community members so that they feel reinforced and recognized for their participation in COPs.

## KNOWLEDGE-ENABLED BUSINESS PROCESSES

The knowledge that supports the decision-making process is an obvious vital resource. However, knowledge has often suffered from under-management in the past thanks to a poor understanding of what knowledge is and the lack of guidelines and frameworks to manage it. It is only in recent years that knowledge has been taken more seriously.

Most organizations are concerned with maximizing productivity by improving profitability or operational efficiency, and strengthening their competitive position. Improved productivity leads to better positioning in the market and a better public perception. Over the past decade, continuous challenges have been made to traditional business practices. Rapid market changes such as electronic commerce, deregulation, globalization, and increased competition has led to constant evolutions in the business and economic environments. Public-sector organizations change to better satisfy public stakeholder requirements, address increasingly tough competition, improve internal processes, and modify the range of products and services they offer [41].

KM provides numerous solutions and paths to achieve higher productivity. It also avoids the unnecessary reinventing of the wheel by encouraging the sharing of best practices, success, and failure stories across the organization. KM provides the collective knowledge of the organization to the employee to achieve the best in their work area. However, many organizations are now enhancing their performance through business process reengineering (BPR) [42]. BPR is the strategy of redesigning business operations to take full advantage of

information technology and human resources. In such an unstable environment, information system developers are challenged to develop systems that can meet the requirements of modern organizations. BPR and its partner strategy, business process improvement (BPI), contrast with traditional information-system development that focused on automating and supporting existing business processes [43]. Management can help establish the criteria and consequences for some critical decision-making points.

To remain competitive, organizations will constantly need to examine the effectiveness and efficiency of their processes. IT allows organizations to re-examine the assumptions upon which they build their processes and provide the potential for a radical redesign. Furthermore, with the rate of technological change, new products or services will continually enable new and improved process designs. Thus, to remain competitive, and perhaps to remain in business, organizations need to periodically re-engineer and redesign their core processes with the most updated technology.

The BPR methodology provides an opportunity for IT to have the type of impact on business productivity that many academics and professionals have long suggested that it should have. Radical redesign through IT enables processes to drastically improve in both effectiveness and efficiency. Organizations that are effective at reengineering, and view it as a periodic effort, will lead in competitiveness in the future. For reengineering through IT to become a legitimate business tool in the portfolio of general managers, there must be a high probability of success. However, reengineered projects have a rate of failure as high as 70%, and the failure of BPR is beginning to be discussed prominently in leading business periodicals. Why do these projects fail? Hammer and Champy suggest that BPR projects fail because people do not follow the rules [42].

Business processes normally consist of three aspects: inputs, processing, and outputs (outcome). The most challenging aspect is processing. Data, such as customer inquiries or materials, belong in the processing stage. The processing of this data usually goes through several stages and many necessary stops that can consequently be expensive and time-consuming. BPR mainly intervenes in the processing part, which is reengineered to save both time and costs.

**Reasons for KM-Enabled Process Improvement**

Why do organizations want to reengineer and improve their business processes? The reasons and the strategic approaches that are process-focused are shared in Table 7.

**Table 7. Reasons for KM-enabled process improvement**

| Reason | Approach |
|---|---|
| Rethink and redesign existing work processes to exceed customer expectations | Customer-focused: Improving and re-inventing processes to better serve customers |
| Be more competitive and efficient to produce exceptional results | Productivity-focused: Performing a process well and as a service for other companies |
| Resolve problems in systemic processes and behaviors | Problem-solving: Enhancing problem-solving skills and learning from previous cases |
| Enhance existing capabilities to expand to other industries | Process redesign: Creating new processes to produce and deliver new goods or services |
| Accommodate an era of change | Change management: Applying processes that are performed well to create and deliver different goods and services |
| Survive and be successful in the long term | Sustainability: Expanding processes to provide additional services to existing customers |
| Invent new "rules of the game" | Innovation and creativity: Form and identify new ideas to the commercialization stage |

Note: KM, knowledge management.

Regardless of the situation or the reason, you should ask yourself:

- What do our customers and other stakeholders want/require/need?
- How must we change the processes to meet customer and other stakeholder requirements and be more efficient and effective?
- Once streamlined, should the processes be computerized or automated (i.e., how can IT be used to improve quality, cycle time, and other critical baselines)?

Processes must be streamlined (i.e., reinvented) before they are computerized. If processes are not carefully thought through and designed, the processes may produce results on a faster basis but may not be appropriate or produce the results that are sought.

Process reengineering is a valuable concept for organizations that are willing to undergo dramatic changes and radical process redesigns. It can coexist with ongoing gradual process improvement efforts because not all processes can be a radically redesigned at once.

In process reengineering, as in all improvement initiatives, assessments should be made in terms of cost-benefit analysis, and risk analysis. However, all assessments should be completed with a sense of urgency since process reengineering requires speed as well as radical redesigns. Documenting the results will serve as the baseline for future improvements.

The various improvement methodologies (i.e., continuous improvement and process reengineering) should not be used separately but rather as two approaches within a single improvement initiative. In fact, a single flowchart can be used to make choices regarding both continuous process improvement and process reengineering (see Figure 2). Both gradual continuous improvement and process re-engineering should be an integral part of process management.

The KM-enabled BPI approach is designed to meet the unique requirements of each of our clients. We realize that business processes should not only be drawing boxes and flow diagrams on paper, but real solutions to the public sector's day-to-day operational problems. The approach also emphasizes the transfer of knowledge from the consulting team to the client for long-term continuous improvement.

Our four-stage approach is detailed in Figure 7, below.

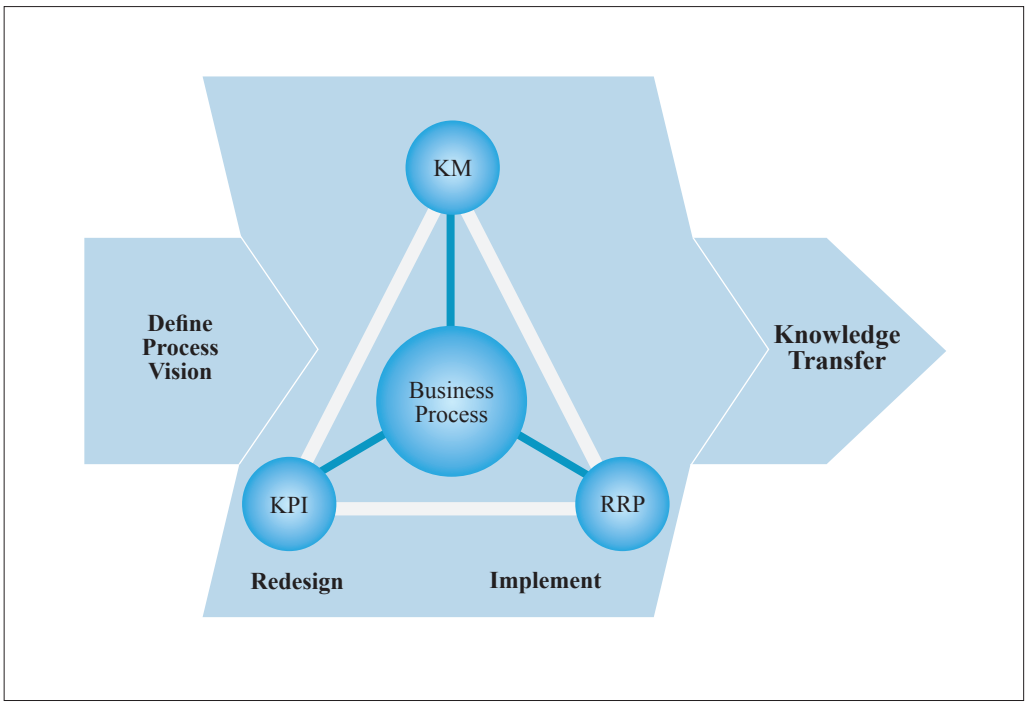


**Figure 7. The four-stages of KM-enabled process improvement. KM, knowledge management; KPI, key performance indicators; RRP, roles and responsibilities.**

1. *Define process vision:* Identify the goals and long-term objectives of BPI for the organization.

2. *Identify core processes:* Each business in an organization is unique. While we bring our expertise and industry practices into the project, we collaborate closely with public citizens to identify core process within the defined scope.

3. *Process vision statements:* The difference between a short-term view and long-term change is defined by the process vision statements used to provide the project team with a "destination" during the redesign effort.

4. *High-level process maps:* High-level process maps provide the project team with a complete picture of the activities within the core processes. They also aid in identifying cross-functional points within the process at the early stage to ensure full coverage of processes.

**KM-Enabled Redesign**

KM-enabled BPR captures the recurring activities and learning points that, together, produce value for citizens and the public (the public sector's internal or external client depending on the specified process). Figure 8, shows a sample of the high-level and subsequent detailed process maps used to capture these recurring activities during the redesign process.

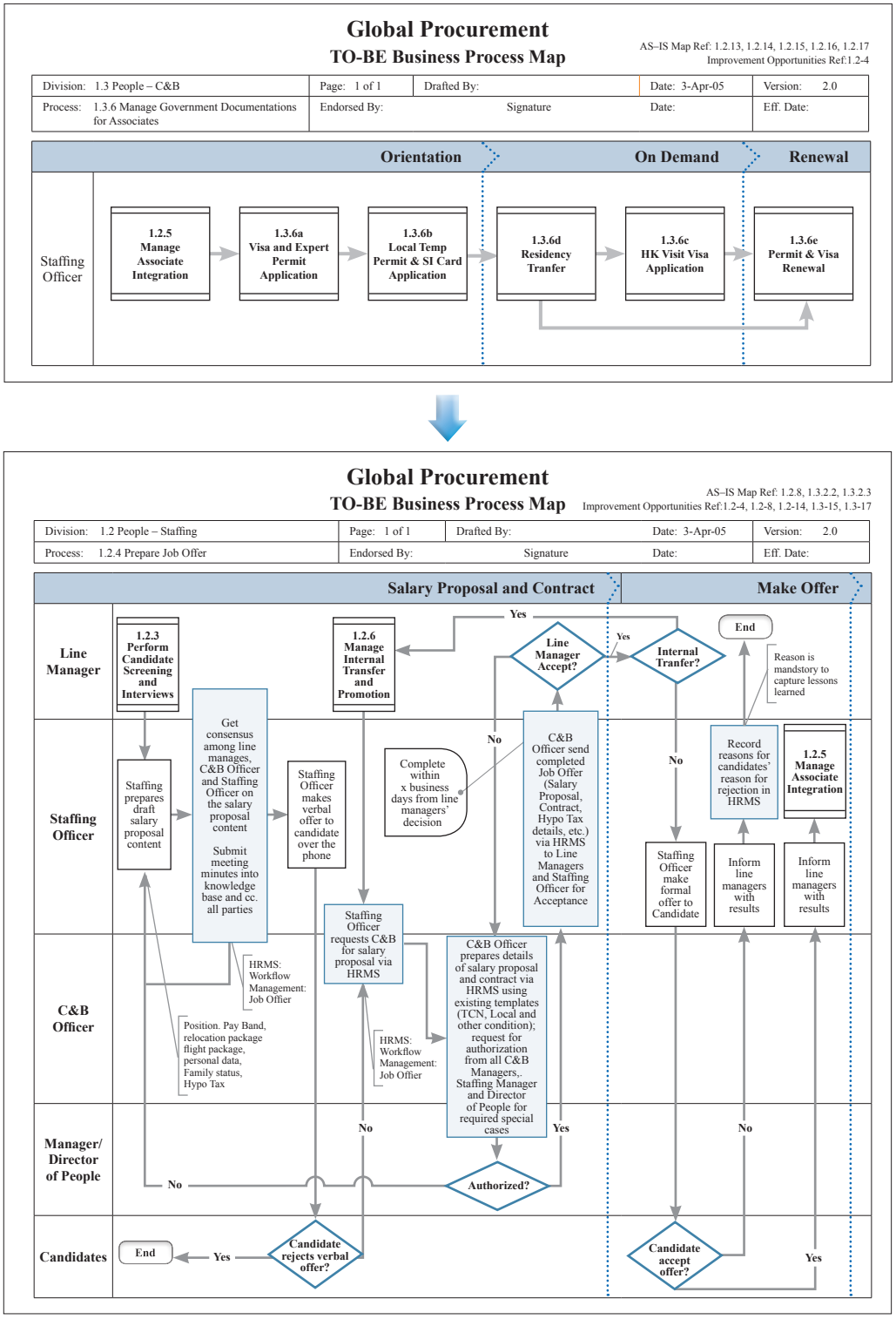


**Figure 8. From high-level process maps to detailed process maps**

Following the creation of the high-level and detailed process maps, KM-enabled "to-be" process maps are developed. These are based on the high-level process maps and further working sessions with the organization. The "to-be" process maps are defined with the addition of KM elements. This approach helps define processes to be redesigned to avoid reinventing the wheel and repeating past mistakes. Developing the "to-be" process maps also ensures the capturing and sharing of knowledge in the organization. An example of a KM-enabled "to-be" process map is shown below in Figure 9, below.

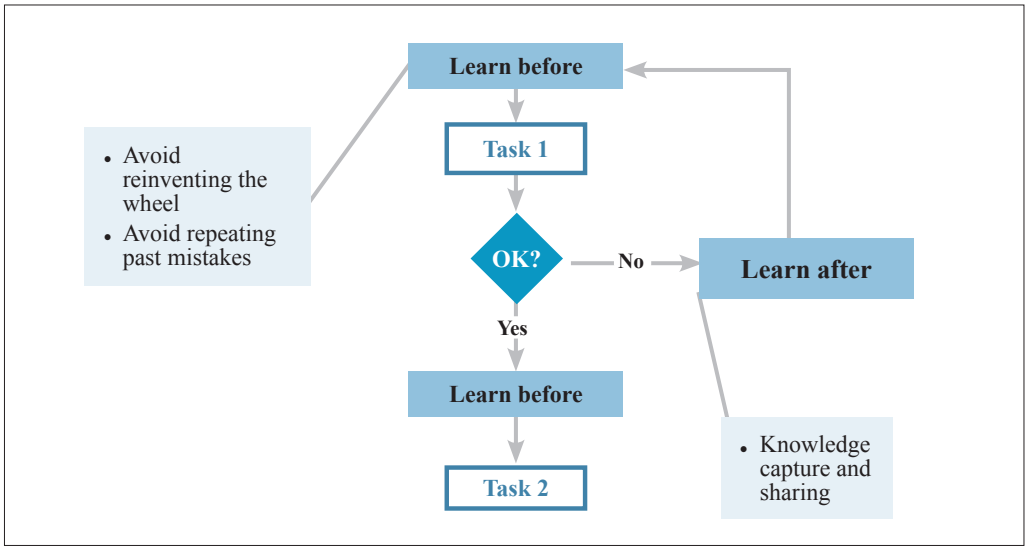


**Figure 9. KM-enabled "to-be" process maps.**

**Implementation**

*KPI elements:* Based on the KM-enabled "to-be" process maps, KPIs such as turnaround time for approval and document submission are defined and embedded in the workflow process for key tasks. This is crucial to process improvement, as different personnel involved in the process workflow are required to interact with each other in a timely and systematic manner. Interface points of intra-department and inter-department are key for KPI implementation.

*KM-enabled operation procedures based on roles and responsibilities (RRP):* Based on the roles and responsibilities of the involved party, the final process maps are converted into usable procedures for day-to-day use. This ensures that the results can be realized at the working level. Each operational procedure will be designed based on a functional role, so each staff member involved in the process has an effective roadmap to contribute, interact, and realize the KM-enabled process workflow. Organizations in the public sector can then realign the roles and responsibilities if necessary. A sample of the documented procedural roles and responsibilities are shown in Figure 10.

Role Based

**Procedures and Key Performance Indicators**

| Division: 1.2 People – Staffing | Endorsed By: | Signature |
|---|---|---|
| Process: 1.2.1. Initiate Recruitment | | Eff. Date: |

**Staffing Officer**

| Step | Action | Target Completion Time |
|---|---|---|
| 1 | **Collect** Associate (AR) and Job Description (JD) from Line Managers via HRMS<br>HRMS: Job Requisition Management<br>• Select from existing list of JDs with amendments or submit new JD<br>HRMS: Manpower Planning<br>• Indicate Headcount as budgeted or non-budgeted with crosschecking function<br>• Detail of outline AR form must be completed for successful submission | |
| 2 | Is it a **new** Job Description? | Confirm within x business days |
| | Yes | |
| | **Request** Associate Requisition Review for new JD from C&B via HRMS<br>HRMS: Market Pay Analysis 7 Salary Review Administration<br>**Confirm** pay band for the new JD via HRMS | |
| | No | |
| | **Check** availability of budgeted headcount | |

KPI

**Procedures and Key Performance Indicators**

| Division: 1.4 People – Training and Development | Endorsed By: | Signature |
|---|---|---|
| Process: 1.4.2 Training Program Design & Delivery | | Eff. Date: |

**Training Manager**

| Step | Action | KPI |
|---|---|---|
| **Training Program Design** | | |
| 1 | **Prepare** country training calendar with trainers and training officer<br>**Input** into HRMS | |
| 2 | **Check** any new training program<br>If no, **goto** step | |
| 3 | **Check** together with trainer whether the program will be subcontracted to external vendor<br>If yes, **follow** 1.4.1.4 Training by External Vendor | |
| 4 | **Prepare/Revise** presentation material, handout, facilitator guide for the new training program | |
| 5 | **Launch** the training program globally<br>(For international, train-the-trainer briefing or conference call will be arranged for Country HR/Adm. Manager for decentralized program) | |
| 6 | **Qualify** the trainer | |
| **Training Enrollment** | | |
| 7 | **Issue** training program enrollment invitation via HRMS:<br>• International: Country HR/Adm. Manager for global launch training program by corporate training. | 2–3 weeks before training |

**Figure 10. Sample document of roles and responsibilities.**

**Knowledge Transfer**

Focus-group meetings can be used to promote knowledge transfer in organizations in the public sector. The organization can continue process-improvement activities based on lessons learned from the project. Related parties can design working documents such as business forms to further execute operational procedures.

**Develop and Provide an Enabling Environment for Knowledge Sharing**

With reference to the APO five-step KM process, knowledge sharing refers to the approach which identifies, creates, develops, and preserves the organization's knowledge [44]. It is crucial for senior management to create the right environment for knowledge sharing [45]. One way to cultivate a knowledge-sharing process culture is to engage employees into sharing their experiences and "making it fun." [46]. An environment that facilitates activities such as formal or informal gatherings is essential. Creating a joyful area or establishing a playful tone will foster a comfortable environment for individuals to share. To sustain this, it is essential to develop a strong relationship with knowledge holders to persuade them to share [47]. Employees may be reluctant to share, in order to secure their jobs [48]. As a result, trust is an influential factor that affects their decision to share [47, 49]. Establishing mutual trust between employees and the organization and embedding a culture of sharing in daily operational processes are crucial steps towards creating and sustaining knowledge sharing in the organization.

Our lives are built on a continuous collection of experiences. We draw on our earliest childhood experiences to help us avoid mistakes and build on successful decisions. The most effective and efficient way to learn is through experience. Our daily work routines and processes consist of a variety of tasks, which lead to some output and, hopefully, to desired outcomes. Some of our work will yield positive results while some may yield negative results. In the process of arriving at our destination, we undergo a number of experiences, both good and bad. We will remember those experiences, especially cases where things went wrong. We learn every day, adding experiences which in many cases remain in our memory. We never stop learning. Sometimes we stumble or fall, but eventually, we get it right.

Organizations learn too. They are complex constructs by people that ideally aim for the same vision, using systems and processes that are supposed to help them achieve their goals. But some organizations do a better job at learning than others. The most successful ones are aware of the individual learning dynamics described in this book. They harness the experiences and lessons learned from their staff to continuously improve. Such organizations will put systems and processes in place that allow them to remember those actions and experiences that have led to negative outcomes in the past, and build on those that led to successful ones.

Quite naturally, this increases their performance in delivering products and services. In the private sector, this positively affects the "bottom line" by decreasing costs and increasing returns. In the public sector, it leads to better service delivery for citizens.

Such organizations will make sure that their collective experiences and lessons learned are not only adequately documented, but also systematically shared. After all, it is only when others in the organization know and understand the essential knowledge that they will be able to make use of these lessons for their own work. Good practices which are embedded into the organization's business processes will be replicated by others, and activities with low value or no returns will be avoided.

In addition, there should be platforms or tools to capture knowledge and retain it in the organization in case of employee retirement or other scenarios. A knowledge base should be developed to store knowledge-related best practices and expert directories [50]. This can centralize knowledge in one place. In addition, there should be collaborative technologies to further enhance the process of knowledge exchange. Tools like Web 2.0 or value-added networks can allow every employee to store and access others' work, thereby allowing knowledge to be transferred to staff of different levels at one time instead of in a top-down hierarchy [45, 50]. It would be beneficial to observe and improve these channels as this affects how employees share their views and influences the overall sharing environment.

Over the course of the past decades, countries have accumulated a wealth of experiences with policies and development pathways. Unfortunately, institutions in developing countries usually do not have the capacity to retain their experiences in such a way that they can be shared. Important lessons learned have not been documented and have been lost along the way. The sharing of such lessons learned has been limited to instances where those who sought development solutions were only aware of how peer countries and institutions in the past confronted similar development challenges. Without a doubt, strengthening the capacity to include a more systematically captured view, and sharing experiences and lessons learned, is one of the main issues to be tackled by public-sector organizations.

## KNOWLEDGE PLATFORMS

The final key tool to consider for increasing individual knowledge-worker productivity and team or organizational knowledge productivity is the "knowledge platform."

What is a knowledge platform and how does it help increase the productivity of individual knowledge work and organizational knowledge work?

A knowledge platform can be purely physical, the most famous of which, in Asia, is what Professor Nonaka in Japan refers to as a "ba." This is extremely powerful for physical "same time, same place" knowledge teams.

Also, a knowledge platform can be technology-based so as to better serve knowledge workers who are in different time zones or different geographical places, allowing them to work virtually, any time, any place.

As many people can be connected to work together from different offices and places, we will first examine the power and reach of technology-driven knowledge platforms and, subsequently, the power and richness of physical platforms.

**Knowledge Platforms (Technology-Based)**

A technology-driven knowledge platform is a place on the World Wide Web that people can connect to directly and/or wirelessly through their mobile devices, often through "cloud-based" services.

Let us first briefly describe the history of "platforms", so that we can better understand the evolution of knowledge-working platforms.

The first platforms on the Internet may be called "information platforms" or "information and communications platforms." As the name suggests, an information platform connects people directly to information, and it communicates information directly to people.

Good examples include early websites and early intranets. They were platforms using the World Wide Web to enable people to enter and search for information. (The World Wide Web was launched in August 1991.) Equally, in these information platforms, information content providers could also direct or push information to people by sending automatic emails and notifications to alert the people and provide a direct link to the information.

So, generation 1 was concerned with "people to information" and "information to people."

The second evolution of platforms may be called "people platforms." As the name suggests, a people platform additionally connects people directly to other people.

Good examples are the Facebook platform and the LinkedIn platform, which give each person a profile and enable them to connect and communicate more richly with others:

- Pictures and videos
- Music
- Comments, likes and dislikes
- Text and other information

A big leap forward between the generation 1 and generation 2 platforms was Web 2.0 which arrived in 2004, and spurred the term "social media." This then enabled a rapid "two-way" communication of information, multimedia, etc., whereas generation 1 was predominantly "one-way" communication.

So, generation 2 was concerned with people-to-people. Most importantly, all the features of generation 1 were inherited in generation 2 platforms to guide people to information, information to people, and multimedia two-way communication and information, that is, people-to-people.

During generation 2, some very useful "knowledge tools" were developed. Knowledge tools are tools to help better capture, store, share, apply, measure, and create new knowledge. In particular, Web 2.0 produced the tweet, the blog, the wiki, and collaborative workspaces. Web 2.0 also enabled massive collective spaces and repositories on the Internet such as Wikipedia and YouTube. These tools are very simple to use, and extremely powerful for the knowledge worker. For details of these tools you may refer to the APO publication *Knowledge Management Tools and Techniques*, referenced at the end of this chapter [30].

The other key development during the Web 2.0 era is the ability of knowledge workers to connect and use these tools anywhere and anytime through wireless mobile tools such as powerful smartphones, tablets, and smaller, lighter laptop computers.

The third evolution of platforms may be called "knowledge platforms." Knowledge platforms fully inherited the capabilities of information platforms and people platforms but they additionally provided the processes, methods, tools and techniques specifically for effective knowledge working. A knowledge platform will help an individual knowledge worker, a team of knowledge workers, an entire organization of knowledge workers, or even a COP (knowledge working) across organizations.

A knowledge platform will enable people to communicate information, through video conferencing, cooperate and collaborate in teams, practice continuous learning, participate in COPs, effectively manage the key knowledge assets and key knowledge competencies, co-create and innovate. In other words, a knowledge platform will include the best and the essential tools of knowledge work and the best knowledge processes to guide more

automatically and assist knowledge workers to increase their productivity and enable the organization to substantially increase its knowledge productivity.

An effective knowledge platform is a platform to integrate all the tools available to the knowledge worker and the organization, in a simple and meaningful way, to enable the six factors of knowledge working productivity, and to enable the principles of organizational knowledge productivity.

One of the authors, who led the European Commission (EC) project on knowledge asset management was also responsible for designing and testing one of the first knowledge platforms in the world to support knowledge asset management. The knowledge platform was tested in both a very large organization (a global bank) and in a very small knowledge-intensive enterprise (SME) with fewer than 20 knowledge workers. Further details about knowledge platforms may be obtained in the references at the end of this chapter.

**SECI as a Knowledge Platform and Ba as Collaborative Space**

In answering the questions, "How can public-sector organizations create knowledge for better policies and public services?" and "How can public-sector organizations be transformed to become agile and more innovative?", Professor Ikujiro Nonaka, author of knowledge-based theory, and his colleagues proposed a creative routine for organizational knowledge creation and innovation [52]. This creative routine is a dynamic process consisting of three elements: (1) the knowledge conversion process known as SECI, (2) the ba, and (3) the knowledge assets. SECI is an acronym for Socialization-Externalization-Combination-Internalization [53]. In Professor Nonaka's knowledge-based theory, a knowledge-creating organization is able to improve knowledge productivity by utilizing existing knowledge assets via the SECI process to produce new knowledge [53]. This knowledge conversion process is facilitated because of the shared context or ba among individuals possessing both tacit knowledge and explicit knowledge. The new knowledge that they produce in the ba inspires individuals and becomes the basis of new knowledge creation and discovery within the organization. Thus, once the process is routinized, the organization becomes nimble, productive, and innovative , and is able to adapt to changes in its environment [53]. The creative routine of SECI and the ba are proven knowledge platforms and collaborative space for organizational knowledge creation.

**SECI as a Knowledge Platform**

As was made clear in the previous chapters, most public-sector organizations operate on the basis of knowledge, which is accumulated as they perform their missions. Most of this knowledge is tacit and is separately held by groups and individuals. We also know

that, in order to cope with the continuously changing environment and demands of their constituents, public-sector organizations must have the capability to harness both tacit and explicit knowledge assets, not only to improve productivity, but to co-create, as much as possible, more effective and innovative solutions to public issues with stakeholders.

The SECI, as proposed by Professor Nonaka and his colleagues, is a "knowledge conversion" process that could enable public-sector organizations to establish creative routines. In the SECI process, knowledge is made explicit and new knowledge is formed through the sharing and reciprocal communication among those that possess tacit knowledge and through the continuous and "dialectic" interaction of tacit knowledge and explicit knowledge. The interaction is described by Professor Nonaka and his colleagues as "dialectic," taken from the Socratic method of critical thinking by probing and questioning to reveal the truth [54]. In Professor Nonaka's view, "Tacit and explicit knowledge do not exist separately, but rather, like the visible and submerged portions of an iceberg, form a continuum. Because they are opposite in character, they interact in a creative, dialectical process that is dynamic. It is within this dynamic that new knowledge is born" [54]. Such rigor in discussion is very important in the public sector, as there are many conflicting issues and contradictions that public-sector organizations must resolve before final decisions are made.

The importance of combining tacit and explicit knowledge to create higher public value to citizens also cannot be overemphasized. For instance, while public-sector organizations at the central government (e.g., the legislative and executive departments) may have the best policy ideas (explicit knowledge) to address public issues such as health, pollution, flooding, peace, and order, it is the local government that better understands (tacit knowledge) the preference of its constituents. Moreover, it is the people who know the issues (tacit knowledge) that have the greatest impact on their daily lives. It is the frontline personnel, those on the ground, who best know (tacit knowledge) how to implement or enforce policy. Without the interaction of these actors who possess both explicit and tacit knowledge, the policies to be legislated or instituted by the public sector may fail and worsen the situation. If only public-sector organizations could synthesize this tacit knowledge and explicit knowledge, there would be a high possibility of converting them or, more desirably, co-creating new knowledge (e.g., more effective policy solutions) that stakeholders own.

The SECI acronym corresponds to the four modes or stages of "knowledge conversion:" socialization, externalization, combination, and internalization. Through the SECI process, the tacit knowledge possessed by individuals is externalized (via socialization) and transformed into explicit knowledge so that it can be shared with others (externalization). As the explicit knowledge is enriched by the viewpoints and ideas of others, it becomes new knowledge (combination). This new knowledge is then internalized by the organization or a large number of individuals as new and richer knowledge (internalization) and becomes the

basis for another knowledge-creation process [53]. Figure 11, below, illustrates the SECI process. It may appear similar to the commonly known Plan-Do-Check-Act (PDCA) but according to Professor Nonaka, SECI is a spiraling process and is not the same as the PDCA cycle. The SECI starts with socialization while in the PDCA, the basis of kaizen is planning that is structured [55].

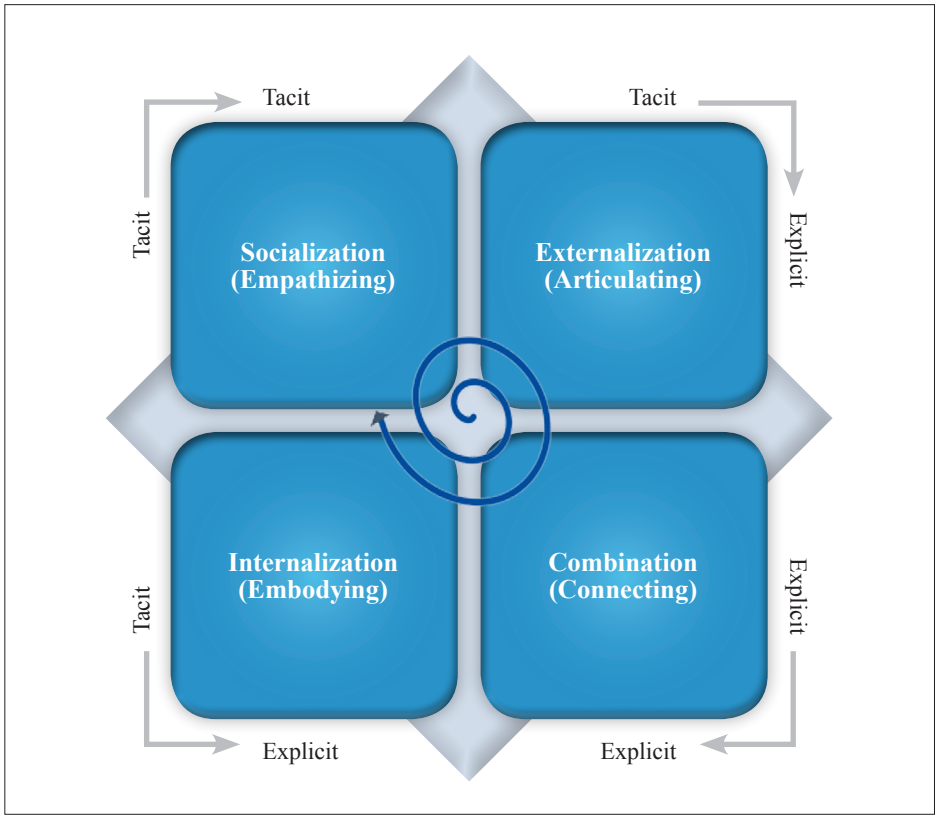


**Figure 11. The SECI process.**

Source: Nonaka, Toyama and Konno, 2000 [53].

- *Socialization* (conversion from individual tacit knowledge to shared tacit knowledge)*:* As shown in Figure 11, the knowledge-creation process starts at the socialization stage in a ba where individuals are able to share and create tacit knowledge through direct communication and common experience [54]. Accordingly, socialization requires that individuals spend time together and become comfortable mentoring or talking with each other, e.g., team-working, social event, or acquiring know-how by observation and practicing together, such as on-the-job training and group assignments. It also requires that individuals are exposed to a particular place or setting for some time to observe and experience reality, e.g., going to the actual workplace, fieldwork, and community immersion. Through this ba, individuals accumulate tacit knowledge about

their social environment and develop empathy with others such as ordinary citizens or the transacting public, and thus are able to understand better their situation and needs.

- *Externalization* (conversion from shared tacit knowledge to explicit knowledge)*:* In the externalization stage, the tacit knowledge created by individuals from socialization is made explicit, expressed in the form of words or images, e.g., a map, an icon symbolizing the group's aspirations, or a proposal. Externalization is a challenging process since the articulation of the tacit knowledge requires skill and imagination but this could be facilitated through the ba [54].

- *Combination* (conversion from explicit knowledge to new explicit knowledge)*:* Combination is the stage at which explicit knowledge is organized and systematized to figure out and find relationships. At this stage, explicit knowledge, including information, is gathered, analyzed, and processed, often with the use of IT-based KM tools, to validate and form more concrete, actionable, and systematic sets of explicit knowledge [54]. For instance, in organizing the post-crisis insights of emergency responders, external evaluations and expert opinions are organized to produce sound crisis-management protocols; or developing the proof of concept of an online service which would be made available to the public; or analyzing large-scale databases on education, employment, social class, and hazard vulnerability to establish determinants of health. Obviously, the process requires working with others beyond the usual boundaries and this could be facilitated if there is an established ba among individuals and groups that can combine their knowledge.

- *Internalization* (conversion from new explicit knowledge to enhanced tacit knowledge)*:* The final stage is internalization, which involves the application of the new knowledge in practical situations and in the work routine of the organization [54]. For instance, by conducting training and asking quick response teams to read the crisis-management protocol, they can internalize explicit knowledge and enhance their tacit knowledge when handling crisis situations. Simulation or experimentation can be done based on the proof of concept of an online service. Data analytics results are used to select the best public-health policy option. Internalization further deepens the tacit knowledge of individuals, which could be shared again via socialization in a ba as another SECI routine is put into motion

As we can observe from the foregoing discussion of SECI, ba appears as the enabling condition for organizational knowledge creation and innovation. Ba is defined as "a shared context in motion, in which knowledge is shared, created and utilized." Professor Nonaka and his colleagues argue that the knowledge-creation process is "context specific in terms of time, space and relationship" and ba refers "not just to a physical place, but a specific time

and space, or the character of relationships in a specific time and place" [54]. Professor Nonaka emphasizes that the ba is not a uniquely Japanese concept since early Western philosophers such as Plato and Aristotle also emphasize the importance of place in learning [54].

The key point in understanding ba is the concept of social interaction [53]. Ba can occur from various forms of interaction between individuals and groups whether face-to-face or virtual, formal or informal, temporary or regular (e.g., group dynamics, informal meetings, inter-agency task forces, and social and other events). In these interactions, individuals openly share their contexts; their situations, circumstances, beliefs, and frame of reference. As a result, individuals develop deeper understandings of where the other individual is coming from, build relationships and trust, and form new insights and perspectives.

While ba might appear similar to COPs, Professor Nonaka and colleagues emphasize the distinction in their concept of place, participants, relationships, and stability, etc. For instance, the COP is a "living place where members learn knowledge that is embedded in the community." Ba is a "living place where new knowledge is created" [53]. Table 8, below, summarizes the differences between ba and COPs.

**Table 8. Differences between ba and COPs**

| **Differences between ba and COPs** | | |
|---|---|---|
| | **Ba** | **COPs** |
| Concept of place | Living place where new knowledge is created. | Living place where members learn knowledge that is embedded in the community. |
| When does learning occur? | Needs energy to become an active ba where knowledge is created. | Learning occurs in any community of practice. |
| Boundary | Boundary is fluid and can be changed quickly as it is set by participants. It is concerned with the present (here and now), not constrained by history. | Boundary is firmly set by the task, culture and history of the community. |
| Pace of change | Constantly moving: it is created, functions and disappears according to need. Constantly changes as the context of participants change. | Consistency and continuity important since the community needs an identity. |

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| Differences between ba and COPs | | |
|---|---|---|
| | **Ba** | **COPs** |
| Level of change | Changes take place at both the micro and macro level as participants change both themselves and the ba itself. | Changes take place at the micro (individual) level, as new participants learn to be full participants. |
| Membership | Membership is not fixed. Participants come and go. | Fairly stable. It takes time for a new participant to learn about the community to become a full participant. |
| Relationship | Participants of ba relate to the ba. | Members belong to the community. |

Notes: COP, community of practice.
Source: Nonaka, Toyama, and Konno [53].

To maximize knowledge productivity, public-sector organizations could complement the COP with ba and vice-versa to establish wide collaborative spaces for innovation. Ba, however, is cultivated to continuously create new organizational knowledge. It is thus useful to look into the types of interaction and forms of ba.

According to Nonaka, Toyama and Konno, there are four types of ba: (1) originating ba, (2) dialoguing ba, (3) systemizing ba, and (4) exercising ba, which provide the context corresponding to the knowledge conversion process of SECI. Table 9, below, summarizes the definition and application of each [53].

**Table 9: Types of ba**

| Types of ba | | | |
|---|---|---|---|
| **Type of ba** | **Type of interaction** | **Medium** | **SECI context** |
| Originating ba (existential) | Individual; Individuals share experiences, feelings, emotions and mental models | Face-to-face | Context for socialization – ba develops empathy, commitment and trust which form the basis for tacit knowledge sharing |

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| Types of ba | | | |
|---|---|---|---|
| **Type of ba** | **Type of interaction** | **Medium** | **SECI context** |
| Dialoguing ba (reflective) | Collective (peer-to-peer); Individuals' mental models and skills are shared, converted into common terms, and articulated as concepts | Face-to-face | Context for externalization – tacit knowledge is shared and articulated through dialogue in ba among participants; ba is constructed and premised on having individuals with a right mix of knowledge and capabilities |
| Systemizing ba (systemic) | Collective (group-to-group) | Virtual; makes use of on-line networks, groupware, documentation and databanks, and other virtual collaborative environment | Context for combination: virtual ba facilitates exchange of knowledge; explicit knowledge is easily transmitted and disseminated to a large number of individuals |
| Exercizing ba (synthetic) | Individual; individuals embody explicit knowledge through action | Virtual e.g. manual, simulation programs, etc. | Context for internalization – ba allows for synthesis and individual perfection of explicit knowledge through action |

Source: Nonaka, Toyama, and Konno [53] and Alvarenga and Choo [56].

To be sure, different types or modes of ba can transpire among different groups and individuals in public-sector organizations, the public they serve, and other stakeholders. The many types and levels of ba can be connected to form a "greater ba" or "basho" in Japanese [56]. Management should energize the ba since tacit knowledge is embedded in ba and new knowledge is created only in an active ba. Moreover, while the ba is a necessary condition to improve knowledge productivity but it is not a sufficient condition for knowledge creation. Top management must set the vision, distribute leadership and institute the creative routine like the SECI.

CHAPTER 7

# MEASUREMENTS

If you do not track and measure your activities and results, you will have a difficult time understanding what is working, or what is not, and what the benefits to the organization are. A traditional definition of productivity is "the relationship between all inputs and the desired outputs… measured as a ratio of output to input over time." However, in Chapter 2 of this book we started to identify the differences between measuring knowledge work and other disciplines such as quality management, and how traditional definitions and forms of measurement are not adequate to measure knowledge work

Knowledge productivity through better knowledge management nurtures knowledge sharing and brings cultural changes to the organization. It makes the job of the knowledge worker easier and more efficient by providing the correct information and knowledge to the appropriate people at the right time.

The authors have chosen to discuss several challenges to measuring knowledge productivity in the earlier chapters of this book, in context. They have covered challenges of certain aspects of knowledge productivity being very difficult to measure and have offered suggestions as to how to develop and measure:

- Levels of knowledge-worker competencies;
- Communities of practice (COPs); and
- Redesigning processes into knowledge-enabled processes.

Most importantly, we need to consider the APO Framework, described in Chapter 5, and ways we might be able to better monitor and measure the four key outcomes: productivity, value to citizen, growth, and quality.

In addition to the measurements discussed so far in this book, this chapter will cover some general principles and best practices for designing measurement systems, and will further discuss how these principles can be applied specifically to the public sector and to the effective measurement of knowledge work.

Measurements can provide an assessment of where the organization is, a picture of where it wants to be, and vital information about the routes it needs to take to get there. What is measured depends on the purpose, for example:

- To determine whether the efforts are achieving their objectives, identify the operational results, and measure those against the original value proposition.

- To determine how well processes, methods, and tools are being used and accepted, measure the level of activity and ask users how useful these new processes and tools are in improving their daily jobs and lives.

- To determine whether the captured knowledge is useful to others, measure the adopted rates and do a post review and reflection to collect valuable feedback.

## FREQUENTLY-USED MEASURES

When measuring the impact of new efforts on business performance, take the organization's original goal into account. Each value proposition comes with a set of logical "measures" that help monitor the progress toward that goal. These include the following:

**Public Citizens' Response**

- Citizens' satisfaction scores
- Citizens' retention rates / customer churning
- Number of calls resolved in the first "sitting" / the first call resolution
- Cross-selling penetration
- Budget recovery from existing citizens
- Generating new revenue from new group of citizens (e.g., Internet, e-business, mobile commerce, etc.)

**Product Leadership**

- Revenue from commercializing new products
- Percentage of revenue from new products
- Time-to-market cycles
- Ratio of successful to unsuccessful product launches
- Number of launches per year
- Number of patents granted
- New product definition (including modification from existing products and the time-period during which it can be called a new product)

**Operational Excellence**

- Cost per unit
- Productivity and yields
- Number of defects/poor quality (percentage of overall production)
- Production cycle time
- Inventory carrying costs
- Environmental compliance
- Safety records

## TYPES OF MEASUREMENTS

There are generally three types of measurements that can be used to evaluate activities:

1. *Results:* The measurement should be outcome based, rather than income based.

2. *Activities:* Measure the usage and participation rates in new knowledge activities to improve knowledge productivity.

3. *Past experience:* Measure the positive and negative outcomes of previous experiences and take them into account.

## MEASURING RESULTS

Most of the organizations we have observed report that their efforts to improve knowledge productivity are tightly linked to operations, objectives, and needs. It is evident that most prefer to measure processes and project outcomes. Some examples of measured results from both the private and public sector are as follows:

- Sales-per-sales-person is up 51%.
- Sales-per-associate is up 34%

- Operating-profit-per-associate is up 93%.
- The speed of response to customers is hours, not days or weeks
- The quality of response has risen as measured by fewer customer complaint calls.

Best practice organizations also point to the importance in measuring costs avoided as a result of sharing and applying knowledge. One way to identify such information is to search for the cost of not knowing (CONK).

There are a myriad examples where information and knowledge existed somewhere in the organization, but were not available when it needed them to be, even to avoid a disaster. These examples sometimes become legendary, as they are certainly burned into management's memory. Sometimes, the cost of not managing knowledge is easier to pinpoint than the positive contribution of effective management. Easier, but can you afford it?

## MEASURING ACTIVITY

The second group of measurements addresses how frequently users are accessing, contributing to, drawing on, and applying knowledge from systems and tools that can better enable and improve knowledge transfer and knowledge productivity enterprise-wide.

There is value in these activity measures. They can lead to a greater understanding of how, or if, a knowledge-driven activity's tool or support system is being used. However, there is a slight setback: whereas activity-based measures do provide useful information on accessibility, utilization, content quality, and design features of systems, they do not provide information about the impact of these activities on results.

Common activity measurements include:

- Effectiveness according to user ratings
- Frequency of access to information in systems
- Participation rates
- Frequency of contribution
- Frequency of use

Ultimately, firms rely on a package of outcomes and activity measures to review comprehensively their success at increasing knowledge productivity and transfer efforts. We can also benchmark the typical accounting principle of activity-based costing, which focuses on how much staff time and actual cost is used in a particular activity. However,

the drawback is the administrative cost of gathering all the information. One of the ways to achieve this is to incorporate such measures into an automated workflow process which can automatically generate reports.

## MEASURING COSTS

The actual cost of managing knowledge better and increasing knowledge productivity is notoriously hard to pin down. Because costs are often dispersed throughout the organization, they can "hide" in places such as IT, marketing, human resources, and training, as well as in elusive increases in management time and the role of knowledge managers. Two possible solutions are to look at people-support costs and the costs of not doing these activities.
The difference in per-employee charges is more a reflection of accounting (what gets counted as a direct expense) rather than effort. These support costs may include, for example:

- Facilitating the formation and health of COPs and discussion groups
- Populating best-practice databases
- Creating IT standards for formatting, and information and document management
- Advertising the existence of directories for knowledge-driven groups, communities, and experts
- Developing policies and procedures for the appropriate use of information, knowledge, and dialogue

## DECIDING WHEN TO MEASURE

To decide when to measure, consider which school of thought applies to your organization. For example, one school believes that it is premature to measure knowledge productivity at the beginning of a new initiative because there is not enough information about the dynamics and impact of knowledge to justify elaborate measurement systems. This school believes measurement at this stage can be risky and misleading. The second school believes that measurement is important and crucial for both understanding and legitimizing investments. This school wants to know where and how to invest.

The authors of this book believe that the best way to successfully and accurately measure the early stages of a knowledge-productivity initiative is to focus on the behaviors and attitudes of knowledge workers. It is important to observe, monitor, and nurture knowledge workers through the initiative. Having early wins are also important for increasing motivation,

momentum, and establishing a better knowledge-sharing culture. After progressing into the initiative stage, the focus can be moved to concentrate on more elaborate and unique knowledge-productivity measurement schemes.

However, it needs to be repeated that measuring knowledge productivity is not an easy task. Determining the pervasiveness and impact of increased knowledge productivity is analogous to measuring the contribution of marketing, employee development, or any other management or organizational competency. It is nonetheless a necessity if knowledge productivity is to have a significant impact in an organization. The key challenge in an organization, where multiple projects are being implemented simultaneously, is how to isolate and measure a knowledge worker's or a knowledge team's contribution to the success or failure to the overall performance of the organization.

Management must understand the value of embarking on the knowledge-productivity journey, though at the early stage, the understanding is more in theory than in quantitative numbers. The most effective way to convince management to support the program may be to find the greatest areas of "pain" within the organization. Find redundant efforts, discover areas where knowledge is lost, and find points of frustration in the employee base. It is essential to expose the need for the better management of knowledge at this stage or, more importantly, to align the knowledge strategy to the organization's strategic direction first. If the implementation is a successful one, this will also expedite the organization moving towards its strategic goals.

Interviewing key stakeholders will aid in uncovering knowledge needs and knowledge gaps. It also exposes areas of lost time, effort, and money. Such interviews should cover at least three layers of stakeholders:

1. Senior management who can provide expectations and strategic views;

2. Middle management who balance visionary goals to practical operations; and

3. Front-line operations staff who can openly share what works and what does not work.

Making comparisons with similar industries that have successfully implemented similar knowledge initiatives can also convince skeptics. If other similar organizations, which have gained recognition for their knowledge-productivity efforts, have seen productivity jump, and operating costs plummet, are likely to be a good candidate to use as proof of the power and effectiveness of this initiative.

A practical definition of individual knowledge-work productivity and organizational knowledge productivity needs to be formulated within an organization. In addition, the organization should consider the applicability of these programs for itself. The movement can start from several isolated, grassroots knowledge-enabling activities, and develop into a cross-corporate vision and strategy. The development of several successful knowledge-enabling practices and pilots can be the catalyst to draw positive senior- management attention. Furthermore, it allows organizational sponsors to realize and consequently support the formation of a cross-functional team that can bring alignment.

At this point in the process, negotiating for funding can add additional resources to the scarce and limited funds of local teams. Additional funding is important and serves as the development fund for an agreed period of time. Clear outcomes should be defined before any actual project implementation. Toward the end of this stage, the focus begins to center on specific knowledge-productivity ideas and principles in order to demonstrate concepts and capabilities.

Anecdotal (war stories, success stories, etc.), quantitative (growth), and qualitative (mainly extrapolation from anecdotal) techniques can be used to measure activities. Since most management initiatives are driven by financial results, the instinct is to identify quantifiable financial measurements such as productivity increases, increased sales and reduced overheads. Improved knowledge management (KM) will generate these financial measurements, however, these will not be generated in the early stages of development. The measurement of financial returns or results should not be undertaken at this point except as by-products of other concurrent efforts. Simply stated, if the organization is fixated on financial returns at this particular juncture, then it is measuring the wrong thing. However, we always need to identify "quick-wins" which will not only encourage KM team members but also demonstrate to senior management or project sponsors that knowledge-productivity theory can practically enhance operations.

KM team members should focus on continuously identifying various opportunities in the organization for implementing new practices, developing the organization's knowledge strategies, measuring the progress toward organizational awareness, and experimenting with different knowledge-working concepts. The team should concentrate on developing and selling the concept in the organization and then measuring their success against the KM plan.

Simple measurements are used to determine the progress made in developing and growing sponsorship and support. How successful has the team been in gaining senior management's attention, e.g., is anyone listening? Measurement here is largely anecdotal, with some quantitative measurements such as:

- The number of sponsors recruited both as champions and project sponsors;

- How many times the team can present the organization's response to the decision-makers; and

- How much corporate underwriting and other funding is given to the project. If only verbal support is gained, but no time or money, the measurement should indicate a need to change the strategy.

An objectively persuasive tool to encourage executive sponsorship is benchmarking with other organizations. Most successful knowledge initiatives originate at the grassroots or organizational (department/division) level and are not corporate (top–down) in origin. Measuring initiatives against other parts of the company can be useful, and implementation tricks and workarounds can also be shared among benchmarking partners. How many organizations have similar initiatives under way? What are their funding, staffing, and reporting structures? These types of measurements can help with the promotion of the knowledge-productivity program to management.

If top managers perceive that enabling knowledge capture and transfer is receiving attention in other organizations, they may be inclined to support such a program. If the team's knowledge-working activities are less advanced than others', management may gain the incentive to provide additional focus and resources. If the program is more successful than those of other organizations, management may increase support to maintain the perception of leadership, which may also help the KM team develop contacts for tacit-knowledge sharing. Participating in an awards-recognition program may also build the organization's image of smart leadership.

An organization routinely captures its research and intellectual property in the form of formal reports that are stored in the library. The library measures the volume of reports contributed by each department and forwards the numbers to the department's management, which can then use the numbers to determine the per capita reports being generated as well as other measurements. The number of reports accessed on an annual basis and specific areas of interest is also measured.

One approach may be to understand what competitors are doing in leveraging knowledge sharing for their customers and within their organizations. Gaining an understanding of what suppliers, customers, and peer companies are doing to enable knowledge sharing within their organizations (and externally) may also be a good idea.

## MEASURING BUSINESS VALUE

It is best to begin mapping measurements to specific business goals such as improved revenue or growth, speed to market, or operating efficiency. These measurements may not be "pure" in the sense that factors other than better knowledge work may have contributed to improved performance. But the correlation between improved knowledge-productivity activity and business performance does make the case for increased value.

Also, the extrapolation of anecdotal measurements into such measures as cost savings is also valuable. For example, how much is it worth if a technician shares knowledge about how to save 10 minutes each time a certain repair is performed? Time saved equals direct labor cost, which is easy to figure out. The effort needs to be put into determining the ancillary impact associated with time-savings. Some potential areas are resource redistribution, support-staff cost reductions, and improved time to market or citizens.

## MEASURING KNOWLEDGE RETENTION

Measure the amount of information contributed to the knowledge base over time against the information's retrieval and reuse. Quantifiable measurements are not enough. They must be balanced with qualitative data to ensure an accurate and complete picture. Unlike in previous stages, the number of accesses to a website is not good enough. Specific measurements and issues to be considered may include the following:

- *Time spent per access:* This can reveal if individuals entering the information systems are actually reviewing its content (indicates quick review and rejection versus what would constitute an individual actually digesting some content). This would have to be correlated with the number of individuals using the information system for an extended period of time and repeat users.

- Are the accesses those of repeat users? The intent for this measurement is to track repeat knowledge users. Repeat users indicate two things: either specific information is of repeatable use; or they find value in the additional information continually added to the content.

- How often are the information systems visited?

- What percentage of total access represents repeat users? Value can be measured by repeat business.

- What is the threshold for indicating that a repeat user is a steady knowledge seeker? Someone may sample a system several times, but will stop visiting if they fail to get the results they seek.

## MEASURING CULTURAL IMPACT

Issues related to measuring the cultural side of knowledge productivity need to be addressed. Considerable effort needs to be expended determining:

- The types of measurements;
- The potential value of the measurements;
- The cost for measuring vs. the value of measuring; and
- Processes.

Consideration should be given to whether and how the cultural side of successful knowledge working can be measured.

- Anecdotal stories: How do we measure this? As stated earlier, stories can form the basis for quantitative data extrapolation. This is not necessarily the only or best means of using anecdotal measurements, but considering the intrinsic value of the anecdote can be essential for future use. Can a story or a lesson learned have a behavioral impact that cannot be measured directly or in traditional terms?

- Performance review: Another means of measuring cultural impact is through the performance-review process. Peers, junior and senior staff may rate each other through 360-degree feedback on the major knowledge-sharing points listed below. As part of this activity, feedback on the usefulness of the knowledge provided is essential.

    1. Do they share their knowledge in an open and constructive way?

    2. Do others find their knowledge of value and use it? What results are gained from it?

    3. Do they use others' knowledge and apply it to improve operations? This can be measured to some extent by traditional business measurement tools.

4. Public and private recognition and rewards for individuals and teams. Although we would advocate team building and knowledge sharing, incentives for individual contributions are still required. A properly implemented reward or recognition system can provide quantitative measurements.

## MEASURING THE EFFECTIVENESS OF SHARING COMMUNITIES

Document the effectiveness of COPs. Based on findings, determine the essential elements needed to create coherent and effective COPs. Draw correlations with COPs that have not been as successful. Extract lessons learned and best practices from these correlations and use them to build new COPs and improve existing ones.

## MEASURING INFORMATION-CAPTURE OWNERSHIP

What are the costs involved in capturing information, new learnings, new ideas and insights, etc., in a usable manner? This not only includes the capturing, but also the categorizing and indexing of information. If this information is not retrievable, it is of little value. Quantifiable measurement of the time required to capture the information in a usable manner is applicable. This can be critical in evaluating the impact of a pilot project. Is the cost of the capture process too expensive in comparison to the value of the captured information or knowledge? Here are some of the factors that should be considered:

- Creating a storytelling environment (either electronic production or live storytelling)
- If live, what is the time commitment of participants (storyteller and audience)?
- If electronic, what are the production costs?
- Are the storage and distribution costs insignificant?
- How much responsibility is there for individuals to capture their information in a usable manner? This includes not only the capturing but also the categorizing and indexing. If the information is not retrievable, it is of little value.
- Does the measurement of capture and compilation warrant effort?

## MEASURING PROJECT IMPACT

Organizations that are undertaking multiple projects in diverse areas of their business need to evaluate the fitness of the knowledge areas in relation to the whole organization. Evaluating a knowledge-area project might require examining many areas of fitness that, in an aggregated pattern, help the organization determine whether the projects in its knowledge management strategy and portfolio are of high impact and beneficial to the success of the organization.

Project criteria may include:

- *Proficiency:* Has a process become world-class because of increased knowledge productivity, or has it made only a mediocre improvement?

- *Diffusion:* Has the knowledge-productivity initiative been properly executed? Are the projects and the knowledge managed well? Is it well understood?

- *Codification:* Because codifying knowledge is expensive, should the organization limit that? Is that limitation visible and understood?

- *Openness for growth/innovation:* Is the knowledge described in jargon that no one understands? Is the knowledge base open to other disciplines? Does the project generate questions to the organization to help it grow?

Justification measurements can be difficult when the organization is trying to decide whether to adopt a knowledge-productivity initiative as part of the ongoing corporate strategy. The question of measurement must often be restated at this stage. The organization has not only to measure how knowledge-area projects perform but also evaluate how it feels when the organizations' key indicators are linked to the knowledge areas. This will be easier if the management decides what needs to be improved through a project before embarking on it. When the improvements occur, the causal linkages can be communicated between where the business started and where it ended up, because of the focus on creating a viable knowledge project.

CHAPTER 8

# NEXT STEPS

## HOW CAN WE START AN INITIATIVE TO INCREASE KNOWLEDGE-WORK PRODUCTIVITY?

At the beginning of this book we made the claim that the potential to increase the knowledge productivity of the public sector is enormous. We also proposed that we are just at the beginning of the journey to turn this into reality.

The authors have made the case, as best we can, to recommend an expanded set of principles of increased knowledge productivity for individuals, teams, and the entire organization. We have recommended the APO Knowledge-Management (KM) Framework for the public sector, and what we consider to be a key strategic approach, and the key methods and tools to turn these principles into reality in our daily work.

The biggest challenge for all now is, simply, will we act on this?

The APO has acted on this by commissioning this research, bringing together a team of national experts across Asia, together with an expert from Cambridge, UK. All of these experts have been working with the APO on many APO-sponsored books on knowledge since 2004.

The aim of the APO is to share the findings of this research in this book to all interested parties.

The APO has acted. How can you now act?

We suggest that you consider:

1. Using this book as the basis of an internal workshop to discuss, spread awareness of, and educate public servants / officers in the key issues of increased knowledge productivity.

2. Provide your feedback to the APO and/or your national productivity organization (NPO). Their details may be found on the APO website: www.apo-tokyo.org.

3. Liaise with your NPO and/or APO Tokyo to remain updated with further developments in this increasingly important area.

4. Embed the principles of effective team and organizational knowledge productivity and individual knowledge-worker productivity into your organizational strategies, policies, and human development plans.

5. Pilot (test) and measure the organizational benefits and increased value to the citizen of introducing these new methods and tools in a small risk-managed way.

6. Start, cultivate, and join a community of practice (COP) for increasing knowledge productivity.

7. Invite and involve your national NPO to speak and discuss knowledge productivity at your events.

8. Contact the authors directly, and through APO Tokyo, if you wish to have further assistance to the above, as we welcome and highly value your interest and feedback.

The APO and the authors of this book, who conducted this research, are unanimous in their belief that any one of these actions will result in a significant move toward increasing the knowledge productivity of Asia, collectively and individually.

From our research we concluded that the additional principles of knowledge productivity, identified in this book, will demand:

- A new "time culture" for knowledge productivity;
- A new dimension for considering "integrity and intellectual honesty;"
- More "inclusiveness;" and
- Effective "collaboration and partnerships" at all levels.

Knowledge productivity, as demonstrated, will ensure increased quality, growth, profitability, and value to citizens that the public sector seeks.

From the authors, and from APO Tokyo, we wish you well in your journey towards increased public-sector service and excellence!

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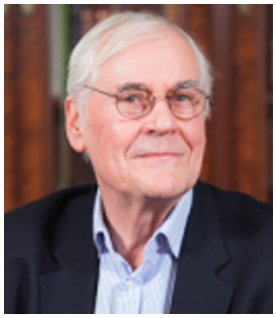

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Dr Ida Yasin has been working with the Malaysia Productivity Corporation (MPC) since 1993 in various divisions including Knowledge Management, Research, Strategic Planning, and Corporate Communications. She is a lecturer for the MBA program at Putra Business School, Malaysia.

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Magdalena L. Mendoza is currently the senior vice president for programs operations at the Development Academy of the Philippines (DAP), a "think-tank" and training arm of the Philippine government. She oversees the DAP's core-business group and technical excellence centers, including its satellite office in Mindanao. Prior to this, Ms. Mendoza served as vice-president and managing director of DAP's Center for Governance from 1999 to 2008 with a concurrent assignment as deputy director of the Presidential Task Force on the 20/20 Initiative for Basic Social Services. Among other things, her work entails providing high-level advisory and consultancy services to the Philippine government on public-sector and management reforms. In recent years, she has been assigned to lead and backstop the implementation of flagship programs such as the National Government Career Executive Service Development Program, the Results-Based Performance Management System, and Performance-Based Incentives System for government employees, as well as the Government Quality Management Committee.

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Sapta has more than 36 years' experience in various industries such as manufacturing, timber, mining, and oil the and gas industry. He has been involved in several different areas such as production planning, production operations, contracting, project control, human resource management, and knowledge management.

As the corporate vice president of human resources (HR), he initiated and was directly involved in developing an end-to-end knowledge management (KM) program for Medco Energy, the largest privately owned oil and gas company in Indonesia. Since 2010 he has run his own business as an HR and KM consultant, involved in several consulting and training services for mining, oil and gas, construction, manufacturing, and banking companies.

Sapta studied industrial engineering at Institute Technology Bandung, Indonesia and has a master's degree in HR Management from Rutgers University, USA. He previously served as president of the Indonesian Society for People Management (PMSM Indonesia) as well as for the Asia Pacific Regional Training and Development Association (ARTDO International). Sapta has successfully led Indonesian HR management professionals in developing the Indonesian HR Management Standard Competency (SKKNI MSDM Indonesia) in cooperation with the Indonesian Ministry of Manpower. Together with several experienced Indonesian HR professionals, he established Lembaga Sertifikasi Profesi Manajemen Sumberdaya Manusia Indonesia (LSP MSDMI) and the Indonesian Human Resources Institute (IndHRI).

Sapta has an active role in the Knowledge Management Society of Indonesia (KMSI), which conducts a quarterly KM forum for KM professionals in Indonesia. KMSI conducted the first Indonesia KM Summit in 2015. He is also an appointed KM expert, representing Indonesia in the APO.

## TREVOR LUI

Mr. Trevor Lui is the founder of Wise Smart Consultants Ltd., a strategic process analyst, and knowledge management (KM) consultant based in Hong Kong. He is one of the pioneers of knowledge management, customer relationship management/customer knowledge management (CRM/CKM), process innovation, and change management. He has implemented KM projects for the Neo-Health Group, Puzhen, APO in Tokyo, Japan, Sociedade de Jogos de Macau S.A., and Macau and Belle International Limited in Hong Kong. Currently, Trevor is engaged with the World Bank's EFI Learning Innovation as a senior organizational-knowledge-sharing (OKS) consultant. He works closely with the Commission of Experts for Research and Leaning Innovation's (EFI) Knowledge Hubs team in the World Bank in Washington D.C., as well as with local consultants and external partners around the globe to facilitate workshops. This includes training workshops on knowledge-management assessments, visioning and planning, knowledge sharing, organizational leadership and policy, and the art of knowledge capturing for the Shanghai National Accounting Institute (SNAI) of the Asia-pacific Finance and Development Institute (AFDI) in Shanghai, China; the Federal Ministry of Agriculture and Rural Development (FMARD) in Abuja, Nigeria; the Lagos Metropolitan Area Transport Authority (LAMATA) in Lagos, Nigeria; the Ministry of Agriculture, Animals Industry and Fishery (MAAIF) in Uganda; and the National Aids Control Organization (NACO) in Delhi, India.

Trevor has conducted numerous CRM/CKM, KM business process, enterprise-wide content, and document management consulting projects for government departments and large corporations in Hong Kong. These include Standard Chartered Bank, the Environment Bureau, Transport and Housing Bureau, the Audit Commission, the Electrical and Mechanical Services Department, CLP Power Hong Kong Limited, the Hong Kong and China Gas Company Limited, the Hongkong International Terminals Limited, and the HK-PCCW. In addition, Trevor is one of the founders of the Knowledge Management Development Centre, a non-profit charitable organization in Hong Kong.

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Gopinathan has more than 20 years of experience in both private and public-sector organizations. He is currently a principal researcher, trainer, and consultant on knowledge management (KM) and Communities of Practice (COPs). He has developed and facilitated courses on KM and COPs for more than 100 organizations.

He has worked with leading experts including Ron Young and Etienne Wenger to develop courses and co-facilitate KM and COP workshops. Gopi has also provided advice and helped launch more than 40 COPs in the Singapore Public Service. He has trained 50 COP leaders in Singapore's social services sector and implemented more than 20 COPs among voluntary welfare organizations. He has also completed a study on COP adoption among organizations in Singapore.

He is certified as a corporate KM trainer by Knowledge Associates Ltd., UK and has developed and delivered KM training courses for the Civil Service College Singapore. He has undergone training at the American Productivity Quality Center, a leading KM research and benchmarking center.

His recent achievements include the development of a KM roadmap for the Singapore Public Service. He has mentored government officials from Abu Dhabi, Sri Lanka, and Brunei on KM. He continually engages KM and COP practitioners to provide advice and build a body of knowledge to support training and consulting.

He is an adjunct lecturer for the master of science (KM) program at Nanyang Technological University and lectures a course on COP. A speaker at several conferences and seminars, Gopi is often called upon as a resource person for KM and COP within the Singapore Public Service. His publications include the *KM Field Guide* in the Singapore Public Service, and the COP Toolkit to help organizations shape, facilitate, and evaluate COP sharing.

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