The On-nara System for Task and Document Management: Scaling Up Back-Office e-Government Across the Korean Government

Abstract

The On-nara system originally developed and used from 2004 as an administrative information system in the presidential office is a primary back-office information system in government through which Korean public officials could handle task and document management on a daily basis. The system allows government officials to be more effective and accountable by easily communicating and sharing documents with other public officials as well as by identifying those who work with and change documents in the course of administrative work in governments. Despite the potential usefulness of the system, it was not welcomed by many public officials and faced the bureaucratic resistance that is often seen toward e-government systems. This case study highlights how the Korean government effectively coped with delivery challenges such as lack of coordination and poor engagement of public officials particularly in the course of scaling up a new ICT system in the public sector. Delivery challenges were effectively overcome through strategic use of performance management in the scale-up process, promoting positive examples and stimulating leadership, swift and effective responses to technical problems, and provision of helpdesks and training programs to ease bureaucratic resistance and complaints about the new system.
Introduction

E-government is one of the most compelling and effective instruments to improve the quality of administrative management and enhance the quality of public services in developing countries (Moon 2002; Norris and Moon, 2005; United Nations 2016 and 2018). In particular, e-government has the potential to support the development of effective, accountable, and transparent public institutions. These three qualities ensure that institutions remain strong and eventually can help to achieve many of the United Nations’ sustainable development goals.

Many governments use ICT for both front-office and back-office operations in e-government. In particular, back-office applications of ICT are often used as part of administrative reform initiatives through which developing countries promote technological system-based reform. As one of these technological reforms, e-government is often introduced to developing countries more easily and swiftly than managerial and organizational reforms (i.e., organizational restructuring and public personnel reforms) that often encounter strong administrative and political resistance. From the perspective of developing countries, e-government is an attractive alternative not only administratively but also economically and politically. Administratively, developing countries expect to improve their quality of government and public services by resolving ineffective administrative practices, sharing information among different administrative units, and automating administrative procedures. E-government is promoted as a potential economic benefit that aligns with their long-term plan for national informatization and a knowledge-based economy. In addition, e-government offers possible political gain in the national agenda of building a strong national image and public support.

Even though there is growing interest in e-government among developing countries for all of these reasons, and it is often introduced with enthusiasm as a desirable instrument, in practice is not widely deployed nor highly utilized. Although e-government initiatives are often perceived as very instrumental and effective, they often—like many other administrative reform initiatives—face a lack of intra-government coordination and bureaucratic engagement (Moon 2002; Norris and Moon 2005; United Nations 2016 and 2018), primarily because of resistance from the bureaucracy.

This study examines the On-nara System1 in the Republic of Korea. It was initially introduced in the South Korean government as a small pilot system for back-office applications to improve administrative processes in the Blue House (Presidential Office in Korea) and was quickly deployed to central government agencies and became a core administrative system that could effectively tackle various managerial and bureaucratic challenges. The On-nara System is basically a Business Reference Model (BRM)-based administrative task management system that enables government officials to do their daily work through an integrated system for task management, document management, digital document transfer, performance management, and decision-making. In particular, the system allows government officials to track government documents and share them with other government officials, making administrative procedures more effective, accountable, and transparent.

South Korea, like many countries, suffered from chronic administrative difficulties in sharing information among different administrative units because of its silo-like administrative structure. This was true, especially after the size of government began to grow during the 1960s. Government officials also had difficulty tracking the history of policy-decision records because there was no internal document repository system that allowed them to monitor different versions of documents produced at the different stages of decision making. The On-nara System resolves those administrative difficulties by allowing government officials to manage their own daily tasks and performance and to store and share digital policy documents with those who need them.

This case study demonstrates how an internal administrative system was effectively scaled up in a short period of time as a comprehensive online administrative system despite various delivery challenges such as resistance from government officials, underutilization of the system by government officials, conflict with existing agency-based systems, and technical difficulties. The Easy-One System, a precursor to the On-nara System, was originally developed, at the specific request of then-President Roh Mu-hyun in 2003, and began to be fully used at the Blue House in 2004. The Easy-One System was renamed the Hamoni System and introduced to five

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1 “On-nara” has a dual meaning. On the one hand, “On-nara” means “whole nation” in Korean since “on” means “whole” and “nara” means “nation.” Interpreting “On” as an English word, “On-nara” also means that the nation is on or working.
central agencies as a pilot program in March of 2006. It was renamed again as the On-nara System and scaled up fully as the comprehensive administrative task management system for all central agencies starting in April of 2007. This is a remarkable achievement considering that only about 13 months had passed since the launch of the pilot program. The system was further extended to all local governments by 2011.

This case study highlights the primary delivery challenges in establishing comprehensive institutional and legal arrangements for the introduction of e-government as well as in coordinating inter-agency collaboration and engaging public officials for effective e-government systems. This study will describe how these delivery challenges were addressed by thoroughly examining specific administrative actions taken by the South Korean government in the course of scaling up the system.

**Contextual Conditions of Development of the On-Nara System**

**Major Goals of the On-Nara System Development**

Like many other countries, South Korea has developed e-government in two different ways over the past three decades: back-office applications (internal administrative system) and front-office applications (online public services available to citizens and businesses). The On-nara System, fully introduced in 2007, is basically a business process system particularly designed for administrative task management as well as public record management on a real-time basis. Before the On-nara System was implemented, each central administrative unit such as ministries and agencies had its own silo-like administrative system, unconnected with other agencies. Each agency had a strong vested interest in its own system, was unwilling to share information with other agencies, and demonstrated a bureaucratic resistance to an unfamiliar system, thereby creating a major obstacle to the development of an integrated inter-agency administrative task management system. This roadblock delayed systemic intra-governmental coordination and engagement of public officials and was a critical delivery challenge that often resulted in a development challenges such as an inability to create effective government innovations.

The On-nara System was built on the foundation of two related administrative information systems (Easy-One and Hamoni) that were added to the original Korean e-government system initiated by President Kim Dae-jung in 2001 (Kim & Choi 2016; Lee 2016). Initial administrative e-government systems were weak in policy knowledge management and information sharing among agencies, motivating the Roh administration (2003–2008) to build the Easy-One System for the presidential office, and then the On-nara System for the entire government; the creation of a common electronic architecture for government operations was intended to bring about synergistic effects and promote interagency collaboration by making it easier to share information among agencies (Lee, 2016). The On-nara System was based on a Business Reference Model that standardizes government activities based on core administrative functions (Ministry of Public Administration and Security [MOPAS] 2013). It was also expected to give top public managers a comprehensive and integrated view of the whole of government business (rather than a narrowly defined silo-like view) by allowing top public managers to monitor all administrative processes systematically in real time.

The On-nara System had three specific goals as summarized in Figure 1 (COTI 2010; Lim 2010; MOPAS 2013). The first goal was to classify all government activities based on their functions and purposes and to place each activity at the appropriate step of standardized administrative processes from collecting data through decision-making to keeping records of results. Taking the cascading approach in performance management, a government official’s particular action is eventually connected to an ultimate policy goal and the vision of the government. To support this mechanism, the system classified administrative tasks systematically into functional domains and levels and classified them into management tasks, policy goals, and vision (Lim 2007). The Roh administration expected that since the On-nara System was built upon the classifications of the government’s goals and functions, it would help top public managers understand how unit assignments related specific policy initiatives fit into specific stages of policy processes (MOPAS 2013). In addition, low-ranked public officers could understand how their individual tasks would be associated with the government agenda (COTI 2010). The On-nara System also provides basic evidence for organizational performance and personnel management because it records and transfers public
officers’ daily activities to personal and performance management systems (COTI 2010; Lim 2007).

The second goal was to enhance transparency and responsibility by recording a history of the decision-making process. The On-nara System was designed to record the opinions and actions of decision-makers, relevant data, and any modifications of plans at each step of the administrative system. This was meant to enable government officials to see by whom and how particular changes during policy-making processes, making the administrative system more accountable and transparent and enabling top public managers to investigate and consider various ideas of organization members within ministries and agencies and make informed, transparent, and democratic decisions (COTI 2010; MOPAS 2013).

The third goal was to facilitate accumulating and sharing organizational and policy knowledge. This is particularly important because the Korean government had long-standing challenges in these areas that were mainly caused by frequent job rotations and bureaucratic silos. The On-nara System enabled public officials to store, search, and analyze policy information from their predecessors as well as share it with other public officials in related agencies. This cross-boundary information system was intended to improve the performance of public services, especially in solving complex problems, by giving public officers a wider view to analyze policy problems and take an integrated approach (Chen and Lee 2017).

**Structure and Functions of the On-Nara System**

The On-nara System is a business process system that enables government officials to efficiently and effectively manage public records and documents and handle daily administrative tasks (such as scheduling meetings and preparing documents) that are systematically classified and standardized. There are two major sub-systems in the On-nara System to deal with public administration processes: task management and document management (Lim 2007). Figure 2 illustrates how these processes are related to standardized administrative procedures. Task management is composed of task classification, task planning and sharing, and use of task-related information through which individual government officials not only carry out specific tasks in line with organizational goals but also manage their performances and store any task-related information which will be used later for performance evaluation. Document management is related to the decision-making and reporting system through which government officials communicate and interact with each other. This makes policy decisions more transparent and accountable because the system identifies those who report and review policy documents and are involved in decision-making procedures.

Task management denotes a systemic management system for the government’s routine business as classified
by BRM. It works through the use of task management cards (See Figure 3) composed of sections (tabs) for the head (task identification), performance management, planning management, quality management, public relations management, and client management. The card shows the person assigned to specific functions and purposes and gives a history of the assignment. The performance management section shows the previous performance of the task and the planning management section details the work schedule. The quality management and PR management sections are for managing citizen satisfaction with each system (MOPAS 2013). Since the task management cards include comprehensive information for a unit assignment, they provide basic information for evaluating personal and organizational performance and serve as a useful tool for information sharing (COTI 2010).

Document management refers to a standardized process for producing documents, especially recording and disclosing the participants who create documents and their progress of decision-making. Document management is designed to improve transparency and responsibility by identifying the individuals who initially produced, modified, and finalized particular documents so that the system subsequently helps to enhance the quality of decision-making. The system also keeps a record of the opinions of reviewers, approvers, and relevant reports throughout the process of producing documents: setting work schedules, writing a report draft, offering reviews, and final approval. Document management cards demonstrate a specific document’s path through organizations’ decision-making, review and approval processes (COTI 2010; MOPAS 2013). Figure 4

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**Figure 2. The Relationship between Administrative Processes and the On-nara System**

<table>
<thead>
<tr>
<th>Task Classification</th>
<th>Establishment of plans</th>
<th>Decision-making</th>
<th>Sharing &amp; use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functions</td>
<td>Purpose</td>
<td>Implementation plan</td>
<td>Document establishment</td>
</tr>
<tr>
<td>Unit task</td>
<td>Management task</td>
<td>Schedule management</td>
<td>Meeting management</td>
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**Figure 3. A Sample of Task Management Card in the On-nara System**

Source: MOPAS (2013: 26).

shows a sample of a document management card in the On-nara System.

In addition to document and task management, the On-nara System provides other functions meant to improve administrative processes such as schedule management, meeting management, and directives management (COTI 2010). Schedule management helps public officers establish daily schedules to implement business processes and inform pertinent officers. Meeting management aims to systematically record the results of meetings by adding meeting minutes to the document management cards and links the document approval process with meeting management in order to enhance administrative efficiency and avoid unnecessary administrative procedures. Directives management clarifies the vertical communications of top-ranking officials such as ministers or vice ministers with their subordinate government officials. Top-ranking officials utilize directive management to issue directions and designate organization members for specific tasks. Directive management also informs top-ranking officials of how low-ranked policy officials carry out their directions and therefore it can be useful for monitoring government officials’ performance as well as making them accountable (COTI 2010; Lim 2007; MOPAS 2013).

Finally, the On-nara System provides a backbone that holds other governmental electronic systems together, including the National Affairs Management System (Presidential policy agenda management), the e-Integration Evaluation System (performance management system), and the Administrative Information System (local government administrative system) (MOPAS 2013). The On-nara System plays the role of connector to ensure synergetic effects for more transparent and accountable government performance. For example, the On-nara System provides basic material for individual and organizational performance management by automatically transmitting information to the e-Integration Evaluation System. It also integrates government operational business with public services. Citizens’ complaints accepted from the Sinmungo System, an electronic petition system through which citizens can provide feedback on public services, are sent directly to relevant public officers who can respond to the petitions (MOPAS 2013). This is possible because the On-nara System shows who is responsible for specific tasks in each administrative unit. Furthermore, the On-nara

Figure 4. Sample Document Management Card in the On-nara System

System lays the groundwork for policy-related institutional memory and knowledge management systems. Information accumulated in the On-nara System is transferred to those systems and utilized for future decision-making and implementation. It facilitates organizational learning and the analytic capacity of the government (COTI 2010; MOPAS 2013).

**Delivery Challenges with Coordination, Engagement, and Human Resources**

It is widely accepted that the introduction of a new e-government system is not easy and often faces a number of obstacles (Moon 2002; Moon and Norris 2005). Previous studies on technology acceptance in public organizations have confirmed that the challenges are diverse in nature and originate from organizational, cultural, financial, managerial, and technological obstacles (Chen and Lee 2017; Lim 2007; Moon and Norris 2005). Among various delivery challenges experienced in the course of introducing and scaling up the On-nara System, the most important were associated with difficulties in coordination and engagement among stakeholders. Government officials (particularly low/street-level bureaucrats and government employees who often directly deal with citizens, such as police officers and social welfare case officers) strongly resisted adopting a new system that recorded all documents in the system. Resistance at the agency level was another challenge because of the Korean government’s bureaucratic silo structure and the lack of interoperability between the On-nara System and each agency’s existing administrative information system. MOPAS (formerly called Ministry of Government Administration and Home Affairs [MOGAHA]) also had difficulties in retaining skilled staff who were needed to lead the successful implementation of the new system.

**Coordination & Engagement Challenges**

One of the most distinctive features of the On-nara System is that all the modifications to an original draft of a public document are recorded in the system. It was designed this way to support task and document management, allowing public officials to track all the records of who initiates, changes, and approves policy ideas. For example, when a public official drafts a policy document and takes it to a supervisor for approval, any modification that the supervisor orders or recommends will be documented and stored as “policy version 2.0.”

However, public officials were strongly opposed to recording all versions of policy documents because they felt greater pressure to be responsible for the modifications they made and the whole process was clearly documented in the system as proof for possible auditing and investigation. Their anxiety about being accountable for the recorded documents and the possibility of being penalized for any possible mistakes dampened motivation to actively use the system (COTI 2010). Some public officials began to coordinate with the staff of other in person rather than using the system and recording the changes that were made (COTI 2010: 75). Resistance also stemmed from the hierarchical and centralized bureaucratic structure inherent in Korea’s public sectors. As each ministry already had its own internal systems, officials felt uncomfortable learning the new system that was replacing those they were already accustomed to (COTI 2010).

Nevertheless, there were varying degrees of acceptance of the On-nara System among government officials. The strongest resistance to the new system was from the bottom of the bureaucratic system rather than top management, who appeared to perceive more benefits of the new system. Relatively speaking, mid- to upper level public officers were more receptive to the new system than lower-level government officials, who were likely to be less technologically savvy and more bureaucratic (COTI 2010) as revealed by a satisfaction survey conducted by the MOPAS in 2007 when the On-nara System was expanded to all the central government agencies. Using the On-nara System allowed public managers to get drafts from their subordinates in a relatively short time, making the decision-making process more efficient. Managers also used the system to get useful policy-related information, enhance their knowledge, and use these resources for their tasks of policy/project planning (Lim & Yoon 2010). They were positive about the potential benefits of acquiring knowledge and know-how to support planning and deal with complex and unclear tasks. However, many low-level government officials who used the system on a daily basis were less satisfied because they did not see positive benefits of the system. Instead, they felt it was burdensome to learn a new system that was not necessarily useful and helpful
for their relatively simple and routine tasks (COTI 2010; Lim & Yun 2010).

Lack of ownership of the new system was also problematic. Many government officials felt that it was not their organization’s choice to implement the new system. Rather, they felt that MOGAHA had forced them to implement the systems with the intention to gain control over other ministries by checking the usage and information in the system (COTI 2010: 74). Some officials were afraid that they would have less authority over their work, and some were anxious about using the system to disclose decision outcomes (Joo & Hyun 2011: 87). As the On-nara System built on the Blue House’s Easy-One System, many government officials were suspicious that the Blue House would have more opportunities to become involved with or engage in direct supervision over various agencies’ work (Joo & Hyun 2011). Resistance was especially high against the daily plan management aspect, since all the plans for the work of public officials would be in the system so that they were open to being monitored by others such as the President’s Office or related policy makers such as senior presidential office staff and ministers (Joo & Hyun, 2011).

Lack of interoperability between the On-nara System and the old administrative information system used by each agency was another obstacle which made public officials less enthusiastic about the new system. Prior to full-fledged implementation of the On-nara System throughout the central agencies, each agency used its own administrative system for task and document management. These systems were often less sophisticated than the On-nara System and not integrated with other agencies’ systems. Initially, the On-nara System was not well connected to the E-nara System, the existing e-approval (reporting) system. There were overlapping functions between the old and new systems that caused administrative inefficiency (Joo & Hyun 2011; Lim 2007; MOPAS 2013). For example, in the early stage of implementing the On-nara System, the document management and document release functions were not integrated. As a result, two different systems, the On-nara System and the E-nara System, worked separately to process document releases. Officials first needed to ask for a document to be sent from the On-nara System to the E-nara System, and then the E-nara staff confirmed the document and sent it back to the respective department/team.

To overcome this lack of understanding and initial resistance among public officials, the Korean government designated a special position in each ministry and agency for those who were in charge of the On-nara System. In this important role, these staff members were expected to understand the system’s goals and match them to the public officials’ tasks in different positions, agencies, and jobs; to write a step-by-step guide for each function provided by the On-nara System; and to promote active use of the system (COTI 2010). It was essential to have good training for staff members in case of job rotation, but frequent job rotation in fact made it difficult to get skilled staff who understood the On-nara System well (COTI 2010).

Tracing the Implementation Process and Overcoming Challenges to the On-Nara System Implementation Process

Though the President and the MOPAS, which was in charge of implementing the system for the entire government, were enthusiastic about the On-nara System, introduction and diffusion of the system throughout the central government was difficult. The Presidential Committee on Government Innovation and Decentralization (PCGID), a major committee for administrative reform under the Roh Mu-hyun administration, first initiated the plan to develop a common e-based internal government operations system across the entire government in 2003. The initiative received tremendous support from President Roh, who believed that a common system for internal operations would be a vital tool to innovate and improve the way government worked.

As Figure 5 summarizes, there were five main stages of development and scale-up of the On-nara System. The first stage (2004–2006) was the introduction of the Easy-One System, which standardized and managed the administrative processes of the Blue House. The Easy-One System helped to enhance administrative efficiency, transparency, and accountability in the President’s Office. As a result, the Korean government, with President Roh’s support, decided to expand the system to the entire administrative branch. Expecting technical difficulties as well as managerial and policy challenges during the initial stages of introducing the system, the Korean government took advantage of external expert groups for necessary managerial advice and policy recommendations. For example, the Process
Innovation Advisory Committee and e-Government Specialization Committee were temporarily formed to provide guidance from academics and expert groups, which allowed the government to avoid any problem and policy confusion during the initial implementation (COTI 2010; Lim 2010; MOPAS 2013).

In the second stage (March-December 2006), the Ministry of Government Administration and Home Affairs (MOGAHA), the main agency in charge of the development and introduction of the On-nara System, developed a pilot system called the Hamoni System that was eventually introduced into five central agencies: the Ministry of Planning and Budget, the Ministry of Construction and Transportation, the Ministry of Science and Technology, the Korea Coast Guard, and the Presidential Security Service.

The third stage (2007–2012) focused on scaling up the new system at the central level, and was based on the results of the pilot operation. The MOGAHA improved the Hamoni System and renamed it the On-nara System in December 2006 (COTI 2010; MOPAS 2013). Most central agencies and 11 cities began to utilize the On-nara System in January 2007 (Joo & Hyun 2010). In the initial scale-up period, the MOGAHA convened the Real-Time National Project Implementation team, composed of ministers of the central administrative institutions who investigated problems that occurred during the expansion of the On-nara System. The team identified two problems with the On-nara System: 1) it increased the burdens of public officers because it was redundant with the existing e-approval systems employed by each institution; and 2) there were technical problems which prevented public officers from distributing documents and information across the administrative institutions. As a result of these findings, the MOGAHA released a new version, called the integrated On-nara System, in 2008 (COTI 2010; Lee et al. 2015; Lim 2007; MOPAS 2013).

In the fourth stage, beginning in 2011, the Korean government made additional efforts to spread the On-nara System to local governments including municipal and county governments beyond the central agencies. In particular, the MOGAHA, which was in charge of local government affairs, strongly encouraged local governments to adopt the system in order to enhance vertical collaboration between the central and local governments, save administrative costs from managing local governments’ electronic systems, and streamline local administration processes (Joo & Hyun 2011; Lee et al. 2015; MOPAS 2013). From the time of its first introduction to local governments (July 2011) to 2017, the On-nara System was adopted by 219 of 226 local governments. MOGAHA released the source code so that local governments could customize it to fit with their needs (Joo & Hyun 2011) thereby facilitating the system’s adoption.

In the course of scaling up the system at the local level, the Korean government continued to update the On-nara
System to keep pace with the progress of technology, focusing on enabling public officers to have across-the-board access to the system. For example, development of a mobile version of the On-nara System began in 2011 and a mobile-based approval system was introduced in 2014. A cloud-based system was introduced in 2015 and 18 public organizations were utilizing it in a pilot operation as of 2017 (Lee et al. 2015). Due to the government’s continued promotion of the cloud-based On-nara System, 47 public organizations (committees, central government agencies, and local government) had adopted it using an open source system called DBMS as of May 2018 (Hong 2018).

It should be noted that the scale-up of the system has been continued by different administrations regardless of their political ideologies, which has helped make the On-nara System effective and successful.

Overcoming Delivery Challenges

The On-nara System was effectively developed, quickly introduced, smoothly settled into use, and continues to be upgraded with new technologies at both central and local government levels as a primary online administrative system. Yet the Korean government faced great challenges in the course of introducing and diffusing the system. This section surveys the measures taken by the Korean government to overcome the major challenges of coordination and engagement (i.e., bureaucratic resistance and administrative barriers, limited engagement of government officials) and ICT capacities. The critical success factors included several measures taken by the Korean government such as the introduction of performance management, the role of strong leadership from the presidential office, MOGAHA, and agency heads and the provision of systematic education and training which equipped government officials with the necessary ICT capacities to use the new ICT-based system.

Strategically Using Performance Management to Accelerate Scale-Up Process

When the MOGAHA introduced the On-nara System, it was concerned about slow adoption of the system by central agencies because of possible bureaucratic resistance to the new system. In order to facilitate the diffusion of the On-nara System, the government introduced a performance management component. Monthly usage of the system was included as a criterion of performance evaluation at both the individual and team levels (Lim 2007). For example, the Korea Coast Guard specifically chose usage of the system as a personnel performance evaluation item, reporting individual usage of the system in each regional headquarters to the organization’s head each week (COTI 2010). MOGAHA officials visited each organization to check the usage of the system on a quarterly basis, and the results of using the system were reported and incorporated as part of agency-level performance reviews (COTI 2010).

In particular, the MOGAHA specifically monitored the number of task management cards and document management cards produced as well as the extent to which memo reporting, schedule management, and meeting management functions were used by each agency. All these factors were reflected as part of each agency’s annual performance score.

In addition to these regulations, incentives were also provided to induce agencies to use the system. The MOGAHA provided extra performance points to organizations that displayed excellent performance in using the system (COTI 2010) and strategically incorporated the utilization of the On-nara System into annual performance evaluations as part of the agency performance score to motivate and incentivize agencies to adopt and use the system in competition with other agencies. In fact, this competition mechanism drew much attention from each agency’s top management, who were often very sensitive to their agency’s reputation and performance, as well as stabilizing central agencies’ use of the system, so that it was adopted and increasingly used to conduct daily work and get information to support decision making (COTI 2010). The initial resistance of public officials was greatly reduced and the level of satisfaction with the system was increased as they became familiar with the system and experienced some of its benefits. According to a large-scale survey of satisfaction of central agencies with the On-nara System, in fact, the satisfaction rate of government officials increased from 65 percent in 2007 to 71.2 percent in 2009 (MOPAS 2013).

Setting an Example and Stimulating Leadership

As with many reform initiatives, leadership played an important role in scaling up the On-nara System.
Resistance from bureaucrats was gradually overcome due to the strong interest of President Roh, who was the inventor of the earlier Easy-One System for the administration of the Presidential Office (Lim 2007; Lim & Kang 2013; COTI 2010). President Roh had a strong interest in introducing the On-nara System and repeatedly emphasized the benefits of the system to ministers in cabinet meetings based on his favorable experience with the Easy-One System (COTI 2010). As a result, most of the heads of central and local governments began to have a strong interest in and willingness to adopt and implement the system in their respective organizations. The minister of the MOGAHA also met personally with other ministers and local government heads to explain how the new system would improve efficiency and solve the technological issues they faced with their own systems (Joo & Hyun 2011). The ministers’ strong advocacy helped to reduce the initial reservations from central agencies and local governments and increase receptance of the system by stressing potential benefits.

Top management’s interest in the system was another important aspect of the rapid and effective scale-up of the system. It was very clear that the variation in the degree of utilization of the On-nara System among different agencies was usually the result of the agency leader’s interest in the system. For example, ministries and agencies whose top leaders emphasized the importance of the system and encouraged its use for daily operations were likely to adopt and use the system more actively than others. Several cases demonstrate how leadership played an especially critical role in moderating government officials’ resistance and adopting the system. For example, the Minister of Science and Technology prohibited all Ministry officials from using its previous e-approval system, which was later integrated into the On-nara System and thus relieved the administrative burden of officials who were using two different systems (MOPAS 2013).

**Upgrading the On-Nara System in Response to Problems**

Promoters of e-government systems like the On-nara System are often overly optimistic about their new initiatives. Successful introduction of a new information system typically happens not because the system is perfect but because the system is upgraded and initial problems are fixed. When the On-nara System was initially introduced as a pilot program as the Hamoni System in 2006, the Korean government faced criticism from many agencies regarding its lack of interoperability with existing systems. Agencies complained about the inconvenience involved in sending documents to other agencies. In response to this problem, the MOGAHA improved the integration of the document release function into one electronic approval system (Lee et al. 2015). The resulting integrated On-nara System has been widely adopted by central and local governments since 2008 (Lee et al. 2015). Table 1 summarizes the key features of both systems.

<table>
<thead>
<tr>
<th>Table 1. Key Features of the Integrated On-nara System</th>
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<tbody>
<tr>
<td><strong>Improved Items</strong></td>
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<tr>
<td>Improving document release process</td>
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<tr>
<td>Adding document acceptance function</td>
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<tr>
<td>Improving document management cards</td>
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<tr>
<td>Bundling overlapping functions</td>
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<tr>
<td>Improving the connection function of public information</td>
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<tr>
<td>Enhancing the security of documentation</td>
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Source: MOPAS 2013; Lee et al. 2015: 19.
Although the initial On-nara System was a great improvement over the previous system, it was still criticized by government officials, particularly for its lack of interoperability with the old systems that central agencies had developed and used for their own operations (Lee et al. 2015). If the MOGAHA had taken more time to get feedback about the connection issues through more thorough pilot tests prior to the introduction of the system, the integrated system could have saved about 16~26.4 billion won budget (about US$1.5~2.47 million; Lee et al. 2015).

Supporting and Facilitating: Helpdesks and Training

A major challenge to delivering the On-nara System was the mismatch between a new e-government system and the technological savviness of government officials. The MOGAHA made efforts to provide technical assistance to those who experienced any problems or difficulties. There were 120 training presentations at both the director and staff levels (Kim & Choi 2016; COTI 2010) to maintain the knowledge of each organization’s staff in charge of the On-nara System. The educational program content included instruction on the purposes of specific functions and ways to use the functions in real-world settings (COTI 2010). The MOGAHA also opened an online service desk (bmshelp.mogaha.go.kr) and call center to provide technological assistance, with all feedback taken into account to improve the operation and usage of the system. On average, 800 issues (e.g., production of document and task management cards as well as usage of memo reporting and scheduling management functions) were solved each month from January to August 2007 (COTI 2010). Online education data and system manuals were also made available and distributed to all government agencies that used the On-nara System (COTI 2010).

Assessment and Concluding Remarks

Due to the Korean government’s continued efforts to promote the On-nara System and address emerging challenges, the scale-up of the system was very effective. According to the Government Officials’ User Survey, most government officials agreed that the On-nara System had more positive than negative impacts on their organizations, and the actual usage of the system was very high (COTI 2010; Lim & Yun 2010; MOPAS 2013). As presented in Figure 6, user satisfaction gradually improved from 65.0 percent in 2007 to 71.2 percent in 2009 (MOPAS 2013).

Figure 7 shows the specific satisfaction scores on six major functions the system provides. The memo report and document management cards received scores above 70, while meeting management and schedule management received relatively lower scores (MOPAS 2013). Government officials often complained that it was difficult in practice to document and record countless meetings (COTI 2010). Since the contexts of important meetings are shared through memo reporting, these overlaps between memo and meeting management caused inefficiency (COTI 2010). The results of a satisfaction survey conducted by Lim and Yun (2010) in 2008 and 2009 also concurred with these points: the system had overall positive responses in terms of the quality of the system, stable delivery of functions, and integration of the functions. User satisfaction and usage of the system were also highly correlated. Public officials reported higher usage in memo reporting and electronic approval thanks to their easiness and convenience but relatively lower usage in instruction management and meeting management.

![Figure 6. User Satisfaction with the On-nara System](image-url)
Strategic Utilization of Performance Management Mechanism to Motivate Agencies to Adopt the New System

Both lack of managerial support from top management and resistance to government reforms and innovations from low-level bureaucrats are always challenging. Top management’s support at the agency level is critical to the successful implementation of government reforms, especially in the initial stages. In fact, many government reforms and new initiatives strongly supported by top political leaders often fail when the reform is not well rooted at the agency level.

When the Korean government attempted to scale up the On-nara System after the pilot project experience, it strategically incorporated performance management. In the grand framework of the performance management system, central agencies were supposed to manage individual, group, and organizational performance by evaluating the tasks accomplished based on objective measures. Through task and document management systems, the On-nara System was designed to support each agency’s managing of individual, group, and organizational performance, which pushed and motivated top administrators to pay managerial attention to the system and use it proactively. The role of the MOGAHA as a change agent was also essential. The MOGAHA actively monitored and evaluated the extent to which each agency adopted and utilized the On-nara System, putting central agencies in competition because the utilization performance evaluation was often reported to the president and shared among agencies. The MOGAHA even used the On-nara System utilization score as part of the annual performance evaluation of agencies, especially in the initial scale-up stage.

It should also be noted that the Korean government promoted the On-nara System as part of a vision for administrative and government reform, which was systematically presented and used as an instrument for administrative reform promoted by the president, allowing the government to maximize potential synergistic effects with other reform initiatives. These concerted efforts by the Korean government to strategically incorporate performance management measures in the scale-up process were very instrumental in ensuring top management’s interest at the agency level and motivating agencies to use the On-nara System in their routine daily administrative tasks.

Lessons Learned

Balancing Top-down and Bottom-up Approaches: The top-down approach is often effective, and political support is very important to the success of administrative reform. However, top-down political support is a necessary factor, but not a sufficient factor. Many top-down reform initiatives with strong political support
are often successful on the surface for a short period time but are not sustainable and realistic because of leadership transition or changes in policy priorities. The long-lasting success of the On-nara System suggests that the blending of the top-down support with a bottom-up approach was critical to the successful scaling up of the system. Needless to say, the strong interest of the president was an important factor in introducing the system as a policy priority. The roles of the MOPAS and MOGAHA as change agents were also very significant. Nevertheless, this high level of leadership alone was not sufficient for ultimate success. It was also critical to have continued efforts by the MOPAS and MOGAHA to actively incorporate users’ perspectives and needs into the improvement of the On-nara System by actively addressing users’ complaints.

The willingness of the Korean government to develop the On-nara System in response to users’ conveniences and preferences demonstrated its commitment to a bottom-up approach. For example, the On-nara System made it easy for users to get access to necessary data and ultimately use this information to acquire and share knowledge with other public officials (Lim & Yun 2010). In fact, users had relatively positive responses to the effects of the system on knowledge management, saying that it helped increase their know-how and knowledge related to their tasks (Lim 2007; Lim & Yun 2010: 158). In addition, when public officials are assigned to a new position or job, they can track all past data and documents related to their work (Lim & Yun 2010; COTI 2010). Thus, public officials can directly use the system as part of the knowledge management process to find more creative and efficient ways to solve their problems and perform well in their work (COTI 2010). In addition, the On-nara System helped decision-makers solve complex and unclear tasks, resulting in an increase in satisfaction with the system (Lim & Kang 2013).

The memo reporting system is the most used and preferred by government officials because it makes informal communication among related government officials very convenient. Because of the enhanced information policy dialogues among government officials, this function even succeeded in making the hierarchical bureaucratic culture more horizontal and improved job efficiency (COTI 2010). Public officials can send electronic documents simultaneously to different levels of supervisors including team leaders, department directors, and ministers. Though this simple and convenient approval system increased the amount of memo reporting, the perceived convenience and utility to government officials were critical to the successful scale-up of the system in practice.

“Lending a Hand” Approach: It should also be noted that the introduction of the system did not change the bureaucratic culture immediately. For example, public officials often complained about the increasing number of unnecessary memos, and they still feel more comfortable communicating with their supervisors on crucial issues in a traditional face-to-face way before they get electronic approval (COTI 2010). The lending a hand approach (i.e., providing technical assistance or consultation) was very critical in facilitating the usage of the new system and reducing bureaucratic resistance. Expecting various technical problems that users might face in using the new and unfamiliar system, the MOGAHA, responsible for implementing the system, actively reached out to users by offering technical assistance through training programs and helpdesks. This helped government officials to gradually familiarize themselves with the system by resolving immediate technical inconveniences and difficulties. These efforts helped the new system to settle in and become a part of the critical back-office e-government system across the Korean government.

References


Kim, S. & C. Choi. 2016. Institutional and managerial dimensions of digital government development in the


### Annex A. Timeline of On-nara System from Easy-One System to Cloud-based On-nara System

<table>
<thead>
<tr>
<th>Time</th>
<th>Major issues</th>
<th>Major contents and intentions of updates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003–2004</td>
<td>Easy-One System</td>
<td>Easy-One System began to be developed in 2003 then fully introduced as a standardized task and document management system for the Blue House in 2004.</td>
</tr>
<tr>
<td>2005</td>
<td>Hamoni System</td>
<td>Pilot system for the On-nara System.</td>
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<tr>
<td></td>
<td></td>
<td>Introduced into five central agencies for a pilot test.</td>
</tr>
<tr>
<td>2006</td>
<td>On-nara System</td>
<td>On-nara System designed based on the results of the pilot operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adopted by all central administrative institutions and 11 major cities On-nara System.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Its aim was to eliminate redundancy in existing e-approval systems and facilitate information sharing.</td>
</tr>
<tr>
<td>2011</td>
<td>Diffusion of On-nara System to local governments</td>
<td>The Ministry of Government Administration and Home Affairs opened the source code for local governments to customize the On-nara System.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Designed to promote vertical collaboration and information sharing between the central government and local governments.</td>
</tr>
<tr>
<td>2011</td>
<td>Mobile-based On-nara System</td>
<td>Intended to create flexible and ubiquitous working environments in the public sector.</td>
</tr>
<tr>
<td>2015</td>
<td>Cloud-based On-nara System (pilot)</td>
<td>Intended to make the On-nara System in the cloud environment as a pilot project.</td>
</tr>
<tr>
<td>2018</td>
<td>Full pledged Cloud-based On-nara System</td>
<td>Intended to scale-up the Cloud-based On-nara System by diffusing it to entire government.</td>
</tr>
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