Korean Government Uses IoE-Enabled Smart Work Centers to Boost Productivity & Job Satisfaction

EXECUTIVE SUMMARY

Objective

- Address concerns regarding environmental pollution and global warming, as well as issues such as employee productivity, the aging population, and a desire to encourage parents to have more children

Strategy

- Extensive planning and research allowed government officials to anticipate potential problems and plan for necessary transitions, particularly when special considerations had to be made
- Government conducted surveys and employee task audits to determine the suitability of allowing employees to utilize the centers

Solution

- Smart Work Centers allow civil servants to perform routine work tasks closer to where they live, forgoing a long commute to the head office
- Centers also feature facilities designed to reduce long-distance business travel, such as teleconferencing rooms

Impact

- To date, government has established 13 Smart Work Centers, which are utilized by employees from 36 central government agencies, 28 local government agencies, and 71 public organizations
- Smart Work Centers have increased productivity, saved commuting costs, and boosted overall life and job satisfaction

Background

In January 2014, Cisco released the results of an in-depth analysis of the economic benefits of the Internet of Everything (IoE) for the public sector. Cisco's model revealed that some $4.6 trillion in "Value at Stake" would result from the adoption of IoE capabilities across 40 key public sector use cases over the next 10 years, including smart water, smart buildings, smart energy, smart parking, and more (http://bit.ly/1aSGlzn).

As a next phase of its analysis, Cisco engaged Cicero Group, a leading data-driven strategy consulting and research firm, to undertake a global study of IoE capabilities across these 40 use cases – how the best public sector organizations are "connecting the unconnected," as Cisco terms it. To that end, Cicero Group conducted interviews with dozens of leading public sector jurisdictions – federal, state, and local governments; healthcare organizations; educational institutions; and non-governmental organizations (NGOs) – to explore how these global leaders are leveraging IoE today.

The research examined real-world projects that are operational today, are being delivered at scale (or through pilots with obvious potential to scale), and that represent the cutting edge of public sector IoE readiness and maturity. The aim of the research was to understand what has changed in terms of the jurisdictions' people, processes, data, and things, and how other public sector organizations can learn from (and replicate) the trail blazed by these global IoE leaders. In many cases, these jurisdictions are Cisco customers; in others, they are not. The focus of these jurisdictional profiles, therefore, is not to tout Cisco's role in these organizations' success, but rather to document IoE excellence, how public sector entities are putting IoE into practice today, and to inform a roadmap for change that will enable the public sector to address pressing challenges on multiple fronts by drawing on best practices from around the globe.

About Korea's National Information Society Agency

Korea's National Information Society Agency, or NIA, conceived of the Smart Work Center to function as a local, shared, secure office space for Korean government employees across departments and functions. By working from their respective local Smart Work Centers, civil servants can perform routine work tasks closer to where they live, forgoing a long commute to the head office. Centers also feature facilities designed to reduce long-distance business travel, such as teleconferencing rooms. There are currently nine centers for daily commuters and four centers for business travelers, which have been utilized by 137 public-sector entities and 70,000 public-sector workers.

Dr. Byung-Joo (Daniel) Jeong, chief researcher for NIA, coordinates the implementation and operation of Smart Work Centers with the public sector, and is working toward establishing them within the private sector. He helped to establish the Smart Work Center, and has been in his role since 2009. Previously, he worked to establish the National IT Policy Master Plan, and was a working-level director for National Information Society Strategy and Performance Management for South Korea. Dr. Jeong has a doctorate of philosophy in management of information systems from Kookmin University.

Objectives

According to Dr. Jeong, the South Korean government started preparations on the Smart Work Center system in 2009. It was approved in 2010 by then-President Lee Myung-bak. The system is aligned with the current government's management philosophy, which includes a smart e-government policy, driven in part due to concerns regarding environmental pollution and global warming, as well as issues such as employee productivity, the aging population, and a desire to encourage parents to have more children.

Separately, the relocation of several ministries and national agencies from Seoul to Sejong City, which began in earnest in 2012, necessitated the establishment of Smart Work Centers. "[The relocation] caused a great deal of burden from the government's perspective, since commuting time for workers has become much longer," Dr. Jeong said. "And that results in a very ineffective use of time for workers. Additionally, [there are] increasing business-trip expenses and so forth. That is why the government made a decision to carry out the mission of constructing the Smart Work Centers. Even within Seoul, workers spend an hour and half to commute. In order to solve these problems, building Smart Work Centers was inevitable. So they were built in the residential areas where the government officials are clustered."

Strategy

As part of the process of establishing the centers, the government conducted surveys and employee task audits to determine the suitability of allowing employees to utilize the centers. The survey found that 47.7 percent of government knowledge workers' duties could be accomplished from a Center at least one day each week.

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The Ministry of Security and Public Administration (MOSPA) supervises all affairs related to establishing Smart Work Centers, while the National Information Society Agency is charged with constructing and operating the Smart Work Centers. The Korean government owns the facilities and technology. Data is stored on the government cloud service, while data transfer and storage are managed by Chung-an Information Communication Company. The Smart Work Centers are open to central government officials; some local government officials are also approved to use the centers.

Because they are operated solely by the government, the Smart Work Centers have not been promoted publicly. However, the National Information Society Agency is looking to integrate Smart Work Centers into the private sector. "We are targeting private-sector business organizations to encourage implementation of the Smart Work Center system," said Dr. Jeong.

The size of each center varies, so there is not a fixed cost per location. The South Korean government backed and funded the Smart Work Center project. Because the project was written into the general annual funding, specific financial information is not available.

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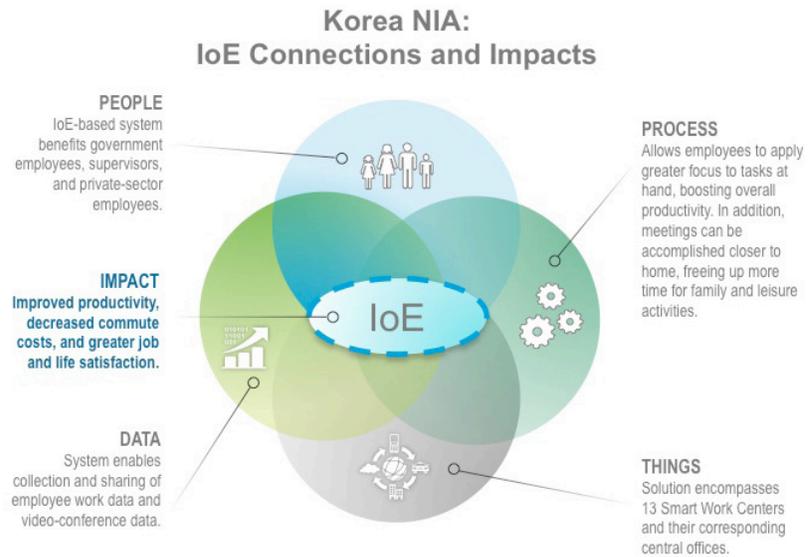
Private-sector IT companies install the video-conference systems, network firewalls, building security systems, and business software programs. Each Center works with a management company to manage daily operations. Each day, a different management team takes care of the Center.

Office fixtures are furnished to mirror the main government offices as closely as possible. The facilities are secured by entrance security systems to ensure only authorized individuals enter Smart Work Centers. A biometric recognition system analyzes blood vessel patterns (handprint) of individuals entering the facilities, and CCTV systems are installed to allow monitoring.

The telephone and video-conference systems enable continuity of work relation-ships with colleagues and supervisors in the main office. Desktop computers are connected to the government's internal network, and data needed for a day's work is moved to the cloud-based server. Workers can call up data and work in the closed network. All data and information is kept within the office and servers (no South Korean public employee is issued a laptop) because public data security is of highest importance to the government.

Data security is handled by a Korean company, which hosts cloud services, data transfer, and storage. Data is protected by government public key infrastructure secure networks, and workers can access projects and files by server or cloud-based storage.

Figure 1. Korea NIA: New and Better Connections.

Korea NIA:
IoE Connections and Impacts

PEOPLE
IoE-based system benefits government employees, supervisors, and private-sector employees.

PROCESS
Allows employees to apply greater focus to tasks at hand, boosting overall productivity. In addition, meetings can be accomplished closer to home, freeing up more time for family and leisure activities.

IMPACT
Improved productivity, decreased commute costs, and greater job and life satisfaction.

IoE

DATA
System enables collection and sharing of employee work data and video-conference data.

THINGS
Solution encompasses 13 Smart Work Centers and their corresponding central offices.

Source: Cisco Consulting Services, 2014

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Dr. Byung-Joo (Daniel) Jeong,
Chief Researcher,
Korea National Information Society Agency

Impact

Some workers use the centers every day, while others utilize them only on a weekly or monthly basis. According to Dr. Jeong, the increased productivity of workers is invaluable. "Although cost saving is very insignificant due to the increased working space, if a worker's productivity boosts by 20 percent, we consider our mission accomplished."

He also says that the system saves employees money in the form of commuting costs. This has led to more overall life and job satisfaction for workers. "For a worker to finish one project usually takes four hours," said Dr. Jeong. "But working at a Smart Work Center makes a difference, so it only takes two hours because [the worker] can focus solely on the work."

In a survey conducted by the government, researchers found that 92.1 percent of Smart Work Center users reported overall satisfaction with the centers, including commute time savings and added productivity.

According to Dr. Jeong, South Korea's success with Smart Work Centers has put a positive international spotlight on the project and caused other agencies and organizations to ask for reports and assistance. "OECD and UN Public Administration are some of those," he says. "We have summarized related materials to distribute to those organizations, and we are supporting the endeavor of the UN Public Administration."

Lessons Learned / Next Steps

Extensive planning and research allowed government officials to anticipate potential problems and plan for necessary transitions, particularly when special considerations had to be made. Dr. Jeong learned that it was easy to reroute the directions of a project if analysis showed there was a better way. "Analysis and understanding the need of the entity should precede doing any ground work – analysis on whether the project fits the organization, planning how to manage Smart Work Centers, and how to make the users happy. [Simply] following others' footsteps without serious analysis would not be right. Without the preparatory work [we did], the project would not be successful."

Dr. Jeong says that one of the most challenging obstacles was convincing Smart Work Center workers to buy into the system, and developing institutional changes to reinforce the benefits of the program to workers and managers. This stems from a perception among workers that because they are no longer in the primary physical office, directly supervised by their manager in real time, their performance evaluations will be negatively affected. "It has been three or four years since we started this project, but they still worry about this," he said.

To quell concerns, the government published a guidance manual listing the business tasks that can be completed at Smart Work Centers. Laws were also passed to protect workers' rights and reinforce to managers that effective work could be completed at the centers. "The content of the law says that, excluding facility-management duties and security-related duties, almost all business is allowed to be completed at Smart Work Centers," Dr. Jeong said. "Task analysis is in progress, which includes naming the tasks that can be utilized at Smart Work Centers and the frequency a worker can work at Smart Work Centers according to his or her types of duties.

"We implemented mandatory orientation hours," Dr. Jeong continued. "In job training and promotion training, we have implemented Smart Work Center-related culture change training, sharing exemplary cases from the public sector or even the private sector .... The government has also presented award certificates to individuals who contribute to the success of Smart Work Center utilization, and made a short film about it to play, for example, in the elevator, or during some conferences. We also work together with mass-media and newspapers to change this culture."

The Smart Work Center project is expanding to meet more specific needs of certain types of employees. This includes responding to the needs of women in the workplace regarding concerns over disparities that occur when they have children. To this end, two Smart Work Centers have been planned to focus on the needs of women workers. "Recently, the Ministry of Employment and Labor initiated Smart Work Center systems in which women can work with less worries [about disrupting] their career continuity," Dr. Jeong said.

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According to Dr. Jeong, along with continuing efforts to move workplace culture toward use of the Smart Work Centers, his agency is also working on increasing the number of centers — and the number of locations across the country — to help more government agencies and employees realize the benefits of improved efficiency, productivity, and employee quality of life. By demonstrating the effectiveness of the Smart Work Center system, the government hopes that the private sector will begin adopting the model as well.

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According to Dr. Jeong, implementing the project in the public sector is not only easier to accomplish, but can also provide a sort of pilot program for the private sector to emulate. "It is easier to make the transition in the public sector because the government can systematically impose and people will obey. In the private sector, there is no one to oversee or guide the process, which can easily become a waste of time."

But Dr. Jeong says they also want to go one step further. "Working at Smart Work Centers will evolve into working at home," he said. "Since 90 percent of people in Korea own smartphones, we are considering handling business via smartphone that is based on mobile functionality." The hope is that the South Korean Government will be able to capitalize on the increased productivity to an even greater degree with a work-from-home model — and that as workers' commutes are reduced to zero and quality of life improves, so will their effectiveness.

More Information

For more information, visit http://www.smartwork.go.kr