Creating a Level Playing Field for Public Procurement: The Korea Online E-Procurement System (KONEPS), 1996–2002

Introduction

By the 1990s, the Republic of Korea had developed into an advanced economy after three decades of rapid economic growth, but its public procurement system had failed to keep pace. The Public Procurement Service (PPS), a national agency in charge of public procurement, still relied on outdated processes based on paperwork and face-to-face meetings, resulting in a confusing and inefficient system.

Because of their discretion over a large and opaque procurement market, PPS officials had ample opportunities to participate in corruption and fraud. Citizens and civic groups raised concerns about waste, fraud, and abuse in public procurement, based on frequent reports of bid rigging, collusion, and official misconduct. Korea ranked 27th out of 41 countries in the first Corruption Perceptions Index released by Transparency International in 1995; this ranking discouraged foreign investors. The inefficiencies and inconsistencies of the procurement system also resulted in significant costs to domestic companies, particularly small and medium-sized enterprises (SMEs).

Korea’s 1997 accession to the World Trade Organization, which obligated member states to liberalize their procurement markets, prompted the Korean government to reform the PPS. The Korean government looked to create a centralized e-procurement system featuring a standardized bidding process and an online marketplace. Although Korea was well positioned for this task with its well-developed information technology (IT) infrastructure and firms, the government had to overcome several challenges to address issues in the W67 trillion (US$56 billion) procurement market (Shin and Park 2004).

After successfully conducting pilot projects, the PPS introduced the Korea Online E-Procurement System (KONEPS) in 2002. A fully integrated, one-stop online procurement service that continues to operate today, KONEPS covered the entire span of the procurement process from budgeting to proposal submission to contract management. By creating a governmentwide open procurement market that is run on consistent rules and procedures, KONEPS made competition for public contracts fairer and more transparent, reduced administrative costs, and increased accountability.

Development Challenge

The Korean government sought to address inefficiency, corruption, and anticompetitive practices in its public procurement market while supporting SMEs and socially beneficial companies.
Intervention

In 2002, the PPS launched KONEPS to serve as a centralized online public procurement platform for both vendors and purchasers. KONEPS was designed to replace paper-based systems and to promote transparency, integrity, competition, and efficiency.

Addressing the Delivery Challenges

Intergovernmental Coordination

Although the project to develop KONEPS benefited from the support of successive presidential administrations and legislators, achieving sustained coordination across government agencies was not easy. KONEPS was envisioned as a governmentwide digital platform that would replace existing systems that were individually managed by different government agencies. Ogyu Kwon, who was the PPS administrator from 2000 to 2003, said, “Since the development of KONEPS required allocation of a large budget, cooperation with the budget and policy authorities was important.”

Several measures were put in place for intergovernmental coordination. The development of KONEPS was pursued as one of the 11 major tasks for e-government services by the Kim Dae-jung administration (1998–2003). As such, coordination bodies and meetings were set up to collect the opinions of relevant leaders in the public and private sectors.

To facilitate coordination, the PPS provided training to government users, many of whom were unfamiliar with digital systems. The government also established legal foundations for KONEPS to provide the authority needed to implement the project.

Stakeholder Engagement

For KONEPS to succeed, the PPS had to work with many different parties involved in the system’s development, operation, and use, including government officers and private vendors. Working closely with the private sector was especially important for collecting feedback on system design and operations and for earning broad buy-in.

The PPS implemented various measures to engage users. To promote openness and receptiveness, the PPS started publicly releasing details of the electronic bidding process and even invited suppliers to the PPS office so they could watch how bid management worked. The agency also established a call center and an office space that resembled a bank teller window to interact with suppliers and clients more closely. In addition, the PPS collected feedback from users, including its own staff members and clients, about areas for improvement and acted on the suggestions.

To secure and expand the pool of private vendor companies participating in public procurement, the PPS designated a line of “excellent products” that highlighted high-performing items produced by SMEs.

Lack of Commitment

Initially, many PPS officers, other government officers, and private suppliers resisted the initiative to develop KONEPS. PPS officers were afraid to lose authority, discretionary power, and even their jobs. Beneficiaries of corruption and collusion in the private sector also sought ways to work around measures pursued by the initiative.

To overcome internal resistance, the PPS opened a training facility that offered residential courses of two or three days and a certification process for procurement officials for up to 5,000 people per year (Campbell 2017). In the case of vendors and other interested users, regional PPS offices, trade associations, and private companies provided training.

Hyong-jong Min, a former PPS administrator, emphasized that strong leadership and frequent and consistent communications of the vision were important in securing buy-in of PPS staff members. Such staff acculturation and training efforts showed many members the benefits of the reduced workload and the greater efficiency that KONEPS produced. As KONEPS gained popularity, staff morale rose.

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1 Interview by Christine Joo with Ogyu Kwon, April 30, 2020.
2 Interview by Christine Joo with Hyong-jong Min, May 14, 2020.
Legislation and Regulations

The e-procurement initiative required proper legislation and regulations. An early pilot of an e-bidding system ran into legal challenges in 1996. Addressing the uncertainty around the validity and verification of electronic records and signatures was necessary to support e-procurement.

Led by a special committee under the economic ministry, the Korean government introduced new legislation and made legal amendments to support the reform. The Framework Act on Electronic Commerce and the Electronic Signature Act of 1999 enabled the use of electronic signatures. The acts not only enhanced the security and credibility of electronic documents but also established the standard for encryption in line with Organisation for Economic Co-operation and Development (OECD) guidelines. In addition, the government introduced a series of legal revisions and new laws, including the Agreement on the Application of the Certified Authentication Services of the PPS e-Bidding System.

IT Challenges

The PPS initially lacked the skilled IT staff and technical resources needed to develop a secure and reliable e-procurement system. The PPS also required a team of skilled IT personnel to train government users and to address feedback and concerns.

The Korean government took a gradual approach to create a centralized system that would integrate more than 50 external systems. The multiyear journey started in 1996 with a pilot project that launched the XML-based Electronic Data Interchange (EDI), an electronic platform for government offices, for the PPS, and for vendors to share procurement documents and data. After successfully piloting the EDI service from 1996 to 1997, the PPS expanded the features and services provided on the platform, including disclosure of bidding notices and goods and price lists and provision of product and supplier information, between 1998 and 2001. Supported by positive feedback and evaluations, the government aimed to introduce KONEPS as a governmentwide e-procurement system to replace the fragmented systems that were in use by various government agencies. The government awarded a contract in early 2002 to a private sector company to outsource the system implementation and final development work for completion by September 2002.

In parallel, the government began offering year-round training for government users, many of whom had little experience working with electronic systems. The training offerings expanded gradually, so that by 2019, the PPS offered 71 training courses for public procurement officials and suppliers (PPS 2019).

Outcomes

A Highly Efficient, Governmentwide E-Procurement System

Since its launch in 2002, KONEPS has become central to Korea’s public procurement system, contributing to the growth of a robust domestic e-procurement market. The total value of transactions on KONEPS increased from ₩36 trillion (approximately US$31 billion) in 2002 to ₩100 trillion (approximately US$86 billion) in 2019 (PPS 2019). While the domestic public procurement markets had been highly fragmented before the launch of KONEPS, the system came to be widely used at all levels of government and even among some private entities. For instance, the number of public organizations and suppliers using KONEPS were 57,534 and 434,000, respectively (PPS 2019).

Studies have shown that the use of KONEPS has saved the public and private sectors both money and time. Lim (2009) estimated that the savings from using KONEPS were about US$8 billion per year and that about 80 percent (approximately US$6.6 billion) of those savings accrued to the private sector. The time required from the review of bidding documents to the selection of a winner decreased from more than 30 hours to less than 2 hours. Jin-sung Chung, a PPS procurement manager, noted that this increased efficiency benefited from the key features and promises of KONEPS, including electronic bid submission, data sharing, process automation, and reductions in paperwork and fees.3

3 Interview by Christine Joo with Jin-sung Chung, April 17, 2020.
Improved Transparency and Reduced Bid Rigging and Corruption

KONEPS has also facilitated the qualitative growth of public procurement. Most notably, transparency has increased, and opportunities for bid rigging and corruption have been reduced significantly. KONEPS eliminated direct contact between suppliers and purchasers by digitizing the entire procurement process. Information on bidding requirements was made publicly available on the procurement platform. By creating a formal electronic process, KONEPS made transactions traceable and reinforced contracting officials' compliance with strict protocols. Various fraud detection measures, such as biometric security and digital public key infrastructure encryption, also helped strengthen the integrity of the procurement process.

The improved transparency and reduced corruption in public procurement were illustrated by the fact that the integrity index score for the PPS jumped 27.2 percent in the National Integrity Commission’s national integrity survey of public entities during the three years following the launch of KONEPS (OECD 2016).

Lessons Learned

Demonstrated Early Success and Frequent Training Helped Overcome Institutional Resistance

The Korean government took a gradual approach in creating a centralized, governmentwide procurement system, starting with a well-planned pilot project. The successful execution of the pilot helped alleviate internal resistance among PPS staff members and engage diverse stakeholders, such as private IT service providers and suppliers. In parallel with the pilot project, the PPS organized staff training and information sessions that helped secure staff buy-in.

Incremental Development Promoted Reliability, Resilience, and User Trust

The incremental development of KONEPS took more than five years, during which the PPS continuously made adjustments based on lessons learned. This process of adaptation and adjustment was important for ensuring reliability, resilience, and user trust as KONEPS expanded its user base from a small number of government agencies to the entire government to quasi-public entities and private sector companies.

User-Oriented Design Improved Versatility and Modularity

KONEPS was designed to meet the diverse needs of its users, including private companies and government institutions. Its monitoring system checked for errors and signs of misuse and enabled timely action based on feedback from vendors and client satisfaction surveys. “You need to treat the system like a living organism, otherwise the system will easily become outdated,” said Gil-yong Chung, manager of e-procurement of the Procurement Management Bureau at the PPS.4

Procurement Reform Can Serve Other Public Priorities

In addition to cost savings and reduced fraud, KONEPS benefited society in many other ways. The legal foundations for KONEPS became the basis for the growth of e-commerce in general, while the technical progress that enabled the digital procurement system provided data security protocols for other sectors. The system’s versatility also made it easy to spotlight products by SMEs, regional businesses, green businesses, and women-owned businesses to level the playing field for these entities.

References


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