Implementing Policies to Promote E-Commerce in the Republic of Korea, 1994-2015

Introduction

The evolution of the internet and the increase in access to computers and broadband networks throughout the 1990s and 2000s changed many aspects of society, including how people around the world do business and participate in the economy. The birth of e-commerce—buying and selling that is carried out in virtual markets via the internet—transformed the ways in which customers and businesses find and interact with each other. E-commerce technology became increasingly widespread in the 1990s in major developed countries.

By reducing constraints on sellers’ sales activities and by removing the need for physical distribution spaces, e-commerce led to lower distribution and advertising costs, thus providing businesses with new opportunities to reach customers. As the use and distribution of smartphones increased in the 2000s and 2010s, people across the world—including those in developing countries, where gaining access to wired high-speed internet networks might be more difficult—were able to benefit from the opportunities offered by e-commerce (Kathuria et al. 2020; Song 2016; World Bank and Alibaba Group 2019).

For a country to develop an e-commerce industry, it must both construct the necessary information and communications technology (ICT) infrastructure and develop effective social and institutional systems to support the use of that infrastructure. The ICT infrastructure includes networks and the technologies that use them, as well as sales and purchasing support systems, electronic payment systems, security and verification software, and logistics systems. The social and institutional systems include an array of laws and legislative provisions, along with measures to prevent leakages of personal information and punishments for deceitful conduct, such as fraud.

In the mid-1990s, the Republic of Korea identified the potential benefits of e-commerce and began laying the foundations for its future. The 1997 Asian Financial Crisis hit the country hard, causing a decline in the economy through 1998, and it demonstrated the need to embrace new technologies that could boost the Korean economy.

Development Challenges

The Korean government wanted to encourage the growth of e-commerce in the country, which could have a number of benefits for the national economy. It could, for example, facilitate buying and selling by reducing the opportunity cost of searching for product and pricing information, and by increasing the supply of goods and services. As e-commerce has become more widespread across the world, including in developing countries, studies have highlighted the potential for e-commerce to make markets more efficient by lowering transaction costs. Studies also have noted the potential for increasing inclusion by allowing new players to enter the market (Baye,

Delivery Challenges
Building and promoting a thriving e-commerce sector would require Korea to overcome several delivery challenges that could impede implementation of this policy.

Information and Communications Technology
Before e-commerce could flourish, Korea needed to build a basic ICT infrastructure to enable broader access to the internet. In 1998, the number of internet users per 100 people was at 7 percent, and the rate of computer ownership among households in the country was at 18 percent, putting the country in 20th place among the 31 Organisation for Economic Co-operation and Development (OECD) member states. In addition to increasing internet and computer usage among the population, Korea needed to develop the capacity for e-authentication—electronic authentication of the identities and actions of parties in e-commerce transactions—and other security measures.

Lack of Regulation or Legislation
Because e-commerce was a new concept for Korea and the rest of the world in the mid-1990s, the government needed to create a body of regulations and laws to support and oversee that emerging sector of the economy. Some of the main issues the government would have to address were how to verify identities; enable the establishment of firms; create regulations for effective electronic contracts; protect consumer privacy; and develop payment systems and electronic currency.

Enabling users to trust the e-commerce system was a particularly salient issue. Because transactions occurred without the buyer and seller meeting in person, e-commerce raised different kinds of accountability and trust issues than those encountered in traditional physical transactions. For example, the buyer and seller had to verify each other’s identities and ensure that the vendor was able to deliver the purchased product. The Korean government had to implement measures that would allow buyers and sellers to trust that e-commerce transactions were safe and reliable with a low risk of fraud.

Addressing Delivery Challenges
Beginning in the mid-1990s, Korea embraced the rise of e-commerce by creating ICT infrastructure and promoting its uptake, drafting new regulations and legislation, and developing new systems to enhance accountability and trust in electronic transactions.

Building ICT Infrastructure and Encouraging Its Usage
In the 1990s, Korea began to formulate and implement development and investment strategies for the ICT sector. Those measures, including initiatives to expand internet penetration throughout the country, would end up facilitating e-commerce by laying the infrastructural foundation for a variety of web-based functions. The first step came in 1994, when the government established the Comprehensive Plan for Establishment of Broadband Information and Communication Infrastructure. The plan signaled the government’s intent to begin building and upgrading high-speed information and communications networks across Korea. In 1995, the government adopted the Basic Law for Promotion of Informatization, which promoted ICT, facilitated cooperation with international networks of governments working on ICT issues, and enabled the building of ICT infrastructure and broadband networks. This law led to the creation of several high-speed networks targeting different groups of users.

With basic infrastructure in place, Korea began encouraging the usage of ICT and developing expertise in these technologies. In 1999, the government created the Comprehensive Plan for National Information Education to promote internet usage. Korea took measures to raise public awareness of the necessity of high-speed information and communication networks, to foster the education and training of experts in the ICT industry, to improve legislation
and institutional systems, and to strengthen international cooperation around ICT. The government designated the Korea Culture Information Service, a pre-existing institution, as the lead agency in publicizing and promoting those efforts. As a result, the number of internet users in Korea grew from 1.9 million in 1997 to 31.6 million in 2004.

The country also needed greater human resource capacity and know-how in the ICT sector. To develop national expertise in electronic communication, the government improved facilities and subsidized research studies at universities. It also supplied computers for elementary, middle, and high schools. The government supported experts with experience in the ICT industry, raised the quality of education to a level on par with international standards, cultivated ICT researchers by providing subsidies, and increased access to market information by promoting and strengthening relevant policies.

The government of Korea actively participated in international cooperation activities, in which member states of international organizations—such as the OECD and the G7—shared relevant information and their prior experience in promoting ICT.

**Drafting the Initial Regulations and Legislation**

As Korea developed the regulations and laws needed to foster e-commerce, it learned from the experiences of other countries and the international standards that were evolving throughout the 1990s and 2000s. A key source of guidance was the United Nations Commission on International Trade Law (UNCITRAL). One of UNCITRAL’s areas of focus was the establishment of international e-commerce policy guidelines. UNCITRAL adopted the Model Law on Electronic Commerce in 1996 and the Model Law on Electronic Signatures in 2001, which were useful touchstones for the Korean government.

The first Korean laws related to e-commerce were the Digital Signature Act and the Basic Electronic Transaction Law, both of which were enacted and implemented in 1999. The Digital Signature Act provided for the security and credibility of electronic documents, promoted the use of electronic documents, and defined the basic policy regarding digital signatures for electronic transactions. The Basic Electronic Transaction Law granted electronic documents legal force equal to that of paper documents and defined basic terms regarding credibility, consumer protection, and promotion of e-commerce. The law also stated the basic policy principles and obligations of the government regarding electronic documents and e-commerce: to ensure a citizen-driven market, minimize regulation, ensure the security and credibility of electronic documents and e-commerce, and reinforce international cooperation.

In 2002, Korea further enhanced the legal framework overseeing e-commerce by enacting the Consumer Protection Act in Industries Including E-Commerce, which safeguarded the interests of consumers and specified further rules for the fair trade of goods and services through e-commerce. This law also enabled the adoption of an escrow system, in which payments made by consumers were deposited into an account with a third party to prevent potential consumer harm in non–face-to-face transactions.

**Enhancing Accountability through Digital Signatures**

Beginning in the late 1990s, Korea developed an authentication regime for e-commerce transactions that used a digital signature certified by the government. The digital signature acted like an electronic seal and verified a buyer or seller’s identity using cryptographic technology. The 1999 Digital Signature Act was the basis for Korea’s authentication system, which the country established in the early 2000s. The Ministry of Information and Communication had the power to approve various certification authorities to implement the system. In 2002 and 2003, the government mandated the use of e-authentication for e-commerce and internet banking, thereby accelerating the expansion of e-authentication nationwide. In January 2003, the system’s coordination improved as six major certification authorities came to an agreement that enabled all digital signatures to be validated under a single authentication system.

Discussions about which transactions would be subject to this authentication system were ongoing and resulted in several policy changes. In April 2004, the government made e-authentication obligatory for credit card transactions exceeding 300,000 Korean won (around US$260), with that limit then reduced to 100,000 Korean won (around US$90) in October 2004. There was resistance to this policy, however, and the government backtracked in November 2005,
changing the rule to allow companies the freedom to decide whether or not to use e-authentication for credit card purchases. The government still mandated the use of e-authentication for bank wire transfers exceeding 300,000 Korean won. However, in 2006, Korea moved again toward stricter regulations with an act specifying that electronic authentication should be used in every electronic financial transaction, except where there were technological or institutional reasons that made it difficult to do so.

The policy mandating the use of accredited digital certificates in electronic financial transactions was controversial because of perceptions that it was burdensome and because there were security issues with the authentication system. Notably, the certification technology mandated by the government relied heavily on ActiveX, a software framework that was vulnerable to security threats and that suffered from compatibility issues that prevented the technology from working correctly on some platforms.

In 2010, the government again responded to criticism by loosening regulations. That year, the Korea Chamber of Industry and Commerce, under the Office of the Prime Minister, finalized new guidelines that relaxed the standards for using accredited certificates. The new regulations stipulated that e-authentication would not be obligatory for financial transactions that had difficulty applying e-authentication.

In May 2013, the National Assembly began revising the Electronic Financial Transactions Act (originally passed in 2007) and the Digital Signature Act to abolish the certificate regulations and to introduce other authentication methods. In 2014, the government stopped requiring e-authentication for all credit and debit card payments and for wire transfers of less than 300,000 Korean won. E-authentication was then necessary only for wire transfers involving 300,000 Korean won or greater. In 2015, the government took a step further and completely abolished the controversial regulatory framework that had enforced the use of e-authentication in electronic financial transactions.

**Building Accountability and Trust through Consumer Protection**

E-commerce created the potential for new types of consumer damages related to signing electronic contracts when purchasing goods or services. For example, there were possible issues involving e-document preservation, consumer misunderstanding regarding the use of e-documents, display of unwanted advertisements, accidents in the delivery process, and problems with prepaid transactions. When consumers had bad experiences or were harmed by electronic transactions, this could reduce the credibility of e-commerce and hamper the development of the e-commerce sector. Korea recognized this potential problem and took steps to protect consumers.

In 2002, the government put in place the Act on Consumer Protection in Electronic Commerce, which aimed to protect consumers in areas such as e-commerce and mail order transactions. The act instructed business operators to confirm the contents of orders and to correct errors (such as accidental duplicate orders or payments) before receiving payment. In addition, the act required that the business operator and e-payment provider (the organization that processed the payment for the vendor) put in place a process through which the consumer could confirm the price of the goods, period of the service, and other relevant details. The act also defined the legal obligations of online shopping vendors. Those vendors were required to clearly indicate on their websites information about themselves, their products, and the terms and conditions of transactions. This information included the company’s owner, office location, telephone number, email address, company registration number, and contract terms and conditions.

Another measure, the Act on the Regulation of Terms and Conditions, aimed to establish a fair environment for trade and protect consumers. This act reduced legal uncertainty by clearly outlining consumer and producer liability in e-commerce transactions. Business operators had to ask for agreement from consumers in advance concerning electronic documents that might affect consumer rights or obligations. The same law required business operators to preserve the original form of all documents and to ensure that consumers had easy access to those documents.

**Outcomes**

From 1995 to 2002, the government invested approximately 680 billion Korean won (US$568 million) in the construction of broadband networks. The benefits of this investment far outweighed the costs, including an estimated 230,000 jobs created and a 0.45 percent increase in GDP.
The e-commerce sector in Korea expanded rapidly in the 2000s. In 2015, online shopping transactions amounted to 53.8 trillion Korean won (US$47.8 billion), an increase of 19 percent from the previous year. The increase in online sales helped the Korean retail industry grow at an average annual rate of 3.8 percent between 2010 and 2015, reaching 369 trillion Korean won (US$328 billion) in 2015. The average annual growth rate of the online shopping sector was 16.4 percent over the same period, far exceeding the 4.63 percent increase in the offline shopping sector.

The growth of Korea’s e-commerce industry since 2000 was closely related to the rapidly increasing rate of internet usage in the country. By 2015, 94 percent of Koreans reported having access to the internet (Poushter 2016). Likewise, 53.6 percent of Koreans above the age of 12 had shopped online.

Certified authentication contributed to the growth and development of e-commerce in Korea. However, the government’s enforcement of the use of specific authentication technologies had several negative impacts, such as discouraging the development of new technologies and creating a weak security environment by relying heavily on ActiveX, a technology with security issues.

Lessons Learned

Prioritizing Trust-Building Institutional Systems

For developing countries, the wired infrastructure that Korea built became somewhat less important through the 2010s because of the growing distribution of smartphones, which substantially reduced the need to build new infrastructure for e-commerce. Widespread use of smartphones offered greater opportunities for countries to enjoy the benefits of e-commerce, but embracing e-commerce technology required governments to ensure that basic policies were in place to allow buyers and sellers to feel comfortable using online platforms. Korea’s experience demonstrated the importance of prioritizing the establishment of institutional systems that foster trust between buyers and sellers. The laws and regulations developed by Korea ensured the credibility of electronic documents, created electronic signatures, and protected consumers, which helped the e-commerce sector thrive.

Adapting the Authentication System in Response to Criticism and Concerns

After constituents complained about an e-authentication system that they saw as overly burdensome and subject to security and compatibility issues, the government responded by loosening its regulations and providing vendors more freedom in how they could authenticate transactions. A major focus of the original policy was the mandatory use of specific technologies, which hindered the development of new technologies and the growth of e-commerce in general. The government implemented reforms that ultimately addressed those issues, including the eventual abolition of the electronic certification system that had helped in the sector’s initial development. The government’s flexibility and adaptability toward its policies constitute a helpful lesson for other countries that are considering developing their e-commerce sector.

Balancing the Role of the State and the Private Sector

Korea was successful early on in building a trustworthy e-commerce sector by mandating the use of a specific authentication technology and standardizing that technology throughout the country. As time went on, however, the government allowed vendors more freedom in choosing different authentication technologies. Other countries seeking to develop their e-commerce should consider how best to balance the need for broadly adopting authentication measures, on the one hand, with the advantages of giving the private sector a role in developing the institutional foundations of e-commerce on the other hand.

Korea’s mandate that all vendors use a specific authentication technology helped standardize transactions, which was useful in developing the sector. However, the technology the government chose eventually proved to be inferior to other available options, which hindered economic development and technological advancement. Korea abandoned this system in 2015; by 2016, very few developed countries were using a government-led electronic certification system.
References


