

# 2015 Modularization of Korea's Development Experience: The Evolution of the Resident Registration System in Korea

2015



MINISTRY OF  
STRATEGY  
AND FINANCE



**KYUNG HEE**  
UNIVERSITY



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of the Resident Registration System in Korea**

## 2015 Modularization of Korea's Development Experience

# The Evolution of the Resident Registration System in Korea

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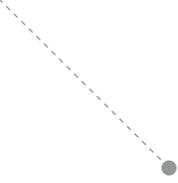
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# Preface

The study of Korea's economic and social transformation offers a unique window of opportunity to better understand the factors that drive development. Within approximately a single generation, Korea transformed itself from an aid-recipient basket-case to a donor country with fast-paced yet sustained economic growth. What makes Korea's experience even more remarkable is that the fruits of Korea's rapid growth were relatively widely shared.

In 2004, the Korean Ministry of Strategy and Finance (MOSF) and the Korea Development Institute (KDI) launched the Knowledge Sharing Program (KSP) to assist partner countries in the developing world by sharing Korea's development experience. To provide a rigorous foundation for knowledge exchange engagements, KDI School has accumulated case studies through the KSP Modularization Program since 2010. During the first five years, the Modularization Program has amassed 138 case studies, carefully documenting noteworthy innovations in policy and implementation in a wide range of areas including economic policy, administration-ICT, agricultural policy, health and medicine, industrial development, human resources, land development, and environment. Individually, the case studies convey practical knowhow and insights in an easily accessible format; collectively, they illustrate how Korea was able to kick-start and sustain economic growth for shared prosperity.

Building on the success during the past five years, we are pleased to present an additional installment of six new case studies and two e-content topics completed through the 2015 Modularization Program. The six reports employ a wide range of examples to better illustrate the continued efforts to improve the effectiveness of managing the incumbent policy and management. The new case studies continue the tradition in the Modularization Program by illustrating how different agents in the Korean society including the government and civil society organizations worked together to find creative solutions to challenges for shared prosperity.

More specifically, these efforts include strengthening social communication between government and the people for sustainable growth through economic education; as well as open-door policies and measures to ensure fiscal stability while achieving sustainable growth in today's globalized world; and painstaking efforts to reform the financial industry

using the real-name financial system for fairness and equity; the informatization of personal information to increase effectiveness of public services; building up a national early warning system for fiscal stability and soundness.

Further contributing to knowledge sharing, the e-contents section features videos delving into Korea's export-oriented growth, often cited as a key government strategy that facilitated Korea's period of rapid development; and the gaming industry, a key success story in the sector for cultural contents. We also proudly note that the World Bank Group's Open Learning Campus (OLC), which will be launching in January 2016, has confirmed that it will feature the fourteen e-content programs built by the modularization program thus far.

I would like to express my gratitude to all those involved in the project this year. First and foremost, I would like to thank the Ministry of Strategy and Finance for the continued support for the Modularization Program. Heartfelt appreciation is due to the contributing researchers and their institutions for their dedication in research, to the former public officials and senior practitioners for their keen insight and wisdom they so graciously shared as advisors and reviewers, and also to the KSP Executive Committee for their expert oversight over the program. Last but not least, I am thankful to each and every member of the Development Research Team for their sincere efforts to bring the research to successful fruition, and to Professor Taejong Kim for his supervision.

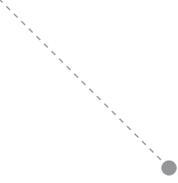
As always, the views and opinions expressed by the authors in the body of work presented here do not necessarily represent those of KDI School of Public Policy and Management.

**December 2015**

**Joon-Kyung Kim**

**President**

**KDI School of Public Policy and Management**



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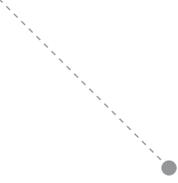
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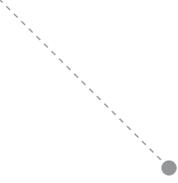
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# Summary

## Value of the Resident Registration System

Numerous states around the world have adopted nationwide personal identification systems that collect and manage personal information on residents for convenient government services and efficient government information management (Article 1, RRA). Biometric information has become vital to welfare and emergency services. For instance, it allows a police officer the ability to quickly collect the biometric information of a suspect who has been detained. National defense services collect biometric information to efficiently administer and mobilize national defense resources. Today's broad array of public welfare services from cradle to grave start with the collection of biometric information. Even after death, biometric information is important for identifying the deceased to ensure the rightful surviving family members receive government benefits and services.

In Korea, the Resident Registration System (RRS) is the national identification system that collects a citizen's biometric data, such as their facial characteristics and fingerprints, to provide a wide range of public services. Data are saved in the RRS with the resident registration numbers (RRNs) assigned to each citizen for identification purposes.

Many countries collect biometric data for convenient public services and security reasons. There was support in the United States, for example, for the US Visitors and Immigration Status Indicator (US-VISIT) Program and the biometric passport in the aftermath of the September 11<sup>th</sup> terrorist attacks of 2001. In Korea, the Korean Biometrics Forum polled 1,500 or so people across Korea, including 500 users of the Incheon International Airport, and received positive feedback on the biometric passport. The majority of respondents said they would willingly provide their biometric information if such passport programs could prevent the forgery of passports, terrorism, and other threats to national security.

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The most pressing obstacle to the gathering and use of biometric information for identification and public services has not been public opposition but the absence of legal and institutional precedents. The Organization for Economic Cooperation and Development (OECD) provides standards and guidelines that are universally accepted, so these form the basis for the Framework Act on the Protection of Privacy that the Korean National Assembly is currently trying to legislate. Despite not having legal precedents, the OECD guidelines are effective references for establishing and developing legal grounds in Korea.

Korea's national identification system of mandatory RRNs is pivotal to the workings of government and its public and administrative services. It also ensures promptness and transparency in conducting these services. In order to provide a wide range of public information to citizens, the Korean government needs to adopt institutional and technical measures for protecting privacy, and RRNs are key in the creation of such measures.

Government services in Korea require access and use of diverse and multiple information databases simultaneously. Minwon24 ([www.minwon.go.kr](http://www.minwon.go.kr)), for example, is a representative government search engine that provides information on all types of inquiries and complaints. Using their RRNs, any Korean citizen can submit inquiries or complaints regarding government services or actions via this portal system from the comfort of their office or home, without ever having to visit an administrative agency. To respond to these electronic submissions efficiently, it is of course crucial for the government to identify the petitioner quickly. Identification RRNs, therefore, are central to ensuring timeliness and transparency across government services. Once the government has a petitioner's RRN, the petitioner does not need to go through separate, additional procedures to identify him/herself. Using RRNs also maximizes the efficiency of administration, as information systems inside administration agencies are also built around them.

The digitalization of public administration in Korea began with the Administrative Network Digitalization Project (ANDP) in 1987, and since then it has extended to encompass a broad array of government database systems, including those for RRNs, real estate transactions, and car transactions. RRNs have been central in the digitalization of government databases, as they eliminate the need for creating new identification systems and enable administrative agencies to access and use existing databases.

The ease of accessing and using existing and common administrative information has led to the merger of major databases across the government and the reform of related services. A nationwide administrative information sharing system has evolved, which incorporates the Public Information Sharing Center (PISC), a center that oversees standards for the use of common administrative information and plans for necessary systemic and institutional

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reforms. The new system has streamlined the administrative information networks at different ministries and departments. While the Center performs the tasks of developing and maintaining common databases, an Inter-Departmental Public Information Sharing Review Committee coordinates opinions among departments and ministries.

The new administrative information sharing system enables civil servants to access and view 42 types of administrative information across 12 categories (i.e., resident registration, real estate, car registers, ships, businesses, taxes, veterans' affairs, awards and decorations, military affairs, legal affairs, patents), which they are required to provide administrative services to residents. The sharing system has radically simplified the paperwork involved in administrative tasks and thus streamlined administrative procedures.

## Global Trend of National Identification System

While there is no resident registration system in the United States akin to the one in Korea, where mandatory ID numbers are issued to all citizens, the social security number and the driver's license are de facto national ID number and card. Social security numbers are issued by the Social Security Administration (SSA), a federal agency, for holders of citizenship rights, permanent residency, and legal (documented) aliens. A driver's license is in the purview of state government and mostly issued for a driver at or above the ages of 16 to 18. All American nationals, permanent residents, and documented immigrants are eligible to apply for social security numbers (SSNs) and cards. Some states also issue identification cards for those residents who lack driver's licenses because of age or other reasons.

A US SSN is a nine-digit number, where the first three numbers indicate the region and the next two indicate a group number between "01" and "99." Social security cards issued in the same region or state may have different group numbers depending on when they were issued. The last four digits are serial numbers ranging from "0001" to "9999." No SSN that has been issued once is reused again, and so far over 450 million SSNs have been issued, with approximately 5.5 million issued yearly.

Initially, the SSNs were used exclusively for social security benefits and services. However, after the Internal Revenue Service (IRS) began to use SSNs as taxpayer ID numbers in 1961, the use of the numbers extended to almost all domains of public and commercial services, including the issuance of driver's licenses, bank transactions, alien registration, and student registration. While government agencies are prohibited by law from disclosing their client's SSNs, no such prohibition exists in the private sector. This has led to a flourishing trade where dealers collect and sell SSN information without effective legal sanctions.

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In response, the US federal and state governments began limiting the use of SSNs in the private sector by introducing legislation or bills that provided more rigorous and strict criteria on SSN use. Before obtaining SSNs from citizens, agencies of the federal and state governments must now inform whether the submission of SSNs is necessary, the legal grounds for the request for SSNs, the specific purposes for which the submitted SSNs will be used, and the actions that will follow in the case of refusal to submit SSNs. By law, these public agencies are forbidden from denying public benefits and services even if citizens refused to disclose their SSNs.

In Japan, there is also no nationwide resident registration system similar to the one in Korea. The Japanese government issues and keeps separate identification numbers for different services, such as resident codes, health insurance IDs, basic pension IDs, driver's license numbers, and taxpayer IDs. There were proposals to introduce nationwide ID numbers, but these ran into strong opposition from the civil society. Japan does have a household registration system and the Basic Resident Registry System for resident registration, which were merged into a nationwide centralized system in August 2002. At that time, the household registration system, which is managed by the central government, and the resident registration system, which is managed by local governments, came under the management of the central government.

The most common means of identification in Japan is the driver's license, but the government also issues Basic Resident Registration Cards for those who lack a driver's license, such as the disabled and the elderly. Issued by municipal or district governments, these integrated circuit (IC) cards increase the convenience and efficiency of administrative services by certifying the cardholders' status and registered addresses. So far, IC cards have provided the necessary identifications in over 534 million cases of local and central administrative services (including passport issuance and pension payouts).

Japan's current social security system was introduced when the national demographic structure was pyramid-shaped, with more people in the lower age groups than in the older ones. However, since the size of the elderly population continues to grow rapidly, the Japanese government has needed to overhaul its social security and tax systems. After the earthquake and tsunami of 2011, disaster security became a new central issue in social security reform debates, leading administrative agencies to consider and discuss important changes. In 2013, the Japanese Diet finally enacted the so-called "My Number (マイナンバー)" bill, thus establishing a nationwide personal ID system.

The My Number system solved a number of chronic tax problems, such as the inability of low-income earners to report the entirety of their income as tax-deductible and the illicit

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receipt of tax benefits, overlapping or otherwise, by individuals who deliberately changed their names. After the national “missing pension records” scandal, the My Number system, along with “My Portal,” significantly tightened public oversight and control over individual pension records by enabling individuals to access and view their records online.

National status systems vary from state to state in Europe. The German resident registration law was historically part of the local land laws, with the federal law serving as only a framework. However, the amendment of Chapter 73, Article 1.3, of the Basic Law in 2006 completely transferred legislative authority over status identification to the federal government. In June 2009, the German federal government enacted a new Federal Resident Registration Act and replaced the existing resident registration law with the Resident Registration Card and Electronic Resident Registration Card Act as of November 1, 2010.<sup>1</sup>

The new resident registration card is an IC card much like a credit card in the sense that it serves not only as proof of nationally ascertained status, but also can be used for other purposes, such as ID checks by state and law enforcement agencies, issuance of status certificates by state agencies, and even for verification of personal signatures. Cardholders are required to produce their cards upon request by investigative authorities. The serial number on a resident registration card, however, does not serve as a personal ID. The German government issues new cards every 10 years, assigning new serial numbers to individual cardholders (Chapter 2, Article 1). In 2009, the government introduced new cards for personal IDs (for people aged 16 and over) and these became effective in November 2010.

For a limited range of government services, such as taxes and pensions, the Netherlands introduced the Burger Service Number (BSN) system in November 2011 to replace its existing Social Fiscal Number (SoFi) system and expanded the range of information shared among public agencies. The scope of services in which BSNs are used has since broadened significantly to include employment-related services, bank accounts, hospitals, and welfare payouts. Non-Dutch residents are also required to obtain BSNs if seeking employment and wanting to receive medical care.

Sweden’s status identification system dates back over three centuries, having originated from the lists of congregants used by churches. The Swedish Tax Agency is responsible for the country’s resident registration system, and it collects and keeps such data as names, personal IDs, sex, locations of birth, dates of birth, and mailing addresses. Swedes are

1. BGBI I, S.1346. [Federal Law on Amendments to Laws on Resident Registration Cards and Electronic Resident Cards, and Other Related Laws.](#)

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required to report any changes made to these data to the state. The Swedish government assigns mandatory personal IDs to all Swedes upon birth. Each personal ID is a serial number consisting of thirteen digits. The first six digits indicate date of birth, the next four digits serve as a validation number (akin to the error correction number used in the Korean RRN), and the last three digits are a specific issue number. A number of administrative agencies have begun using these numbers to facilitate administrative tasks, particularly with respect to taxation, social security, and military administration.

The European Union (EU) has introduced an integrated European electronic pass of sorts, so that citizens of all member states can access and use public and commercial services throughout the Union. It is hoped that the pass will consolidate and expedite the political and economic integration of all of Europe. The new pass, based on biometric data, will not only facilitate border control and protect EU citizens against terrorism and threats from non-EU states, but also enable citizens of member states to obtain unemployment benefits and move freely within the Union in search of jobs.

## Overview of the Korea Residence Registration System

Korea's first Resident Registration Act (RRA) was established in 1962. The RRS thus required all Koreans to register their personal details—name, sex, date of birth, current and permanent addresses—with their local municipal or district-level authorities regardless of whether they continued to live at, or had left, their family hometowns.

Over the decades, the RRS has evolved, and we can understand this change by three evolutionary phases. In the first phase, from the early 1960s to the late 1980s, the system mainly served as a tool for administrative control over the population. Beginning in the 1980s, administrative efficiency came to the fore as the more important objective of the RRS. Bureaucrats and the public alike came to see the system's information gathering as a means of enhancing the convenience and efficiency of administrative services for the public.

The second phase is a phase where the government focused on efficient management of public information. Hence, the development of an efficient resident registration management system was important. In the late 90s, the system, by replacing manual recording, radically streamlined and facilitated administrative tasks at the municipal and metropolitan levels throughout Korea.

The third phase of the RRS's evolution focused on providing convenient service nationwide. The electronic RRS system made it possible for the 23 ministries, as well as the local governments, to access and use eight basic categories of resident registration information.

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This information sharing has eliminated the need for citizens to repeatedly obtain and submit documents and certificates to public authorities and enabled administrative agencies to share documents and data and provide timely services.

The project for implementing and managing the new online RRS was also reformed and tailored to the design and purposes of the online system. The Korean government required that three main categories of services be incorporated into the new system; namely, tasks to be handled immediately online, tasks to be handled in bundles, and other tasks. The immediate online tasks included code management, data management (e.g., printing of registers), resident registration, and other services concerning military affairs, civil defense, public security and order, medical care, veterans' affairs, elections and tax administration. The tasks to be handled in bundles included operations, code management, data management (e.g., duty arrangement), notifications regarding resident registration, statistics, and record browsing and views.

From 1988 to 1992, the Korean government purchased and installed the hardware and facilities necessary for the new online RRS across Korea, thus establishing a nationwide communications network. From January to April in 1989, it installed and upgraded the software programs in 55 dong-level neighborhoods in Seoul. As frequent power failures interrupted the workings of these programs and raised the need for more effective backups, it further installed streaming tape drives (STDs) and uninterruptible power supply (UPS) systems to backup workstations in July and August of that year.

The government also developed and distributed software programs for entering and operating data on a nationwide basis from March 1989 to November 1992. In 1994, the new online system was interfaced with municipal and provincial networks, so that Koreans could obtain copies of their local registers anywhere in Korea and irrespective of their current addresses. The new system also allowed a change of address to be processed with a single report. However, it still took a couple of days for files received by district-level offices to be sorted and uploaded onto the municipal or provincial networks. Koreans who had requested copies of their registers therefore had to wait for at least two to three days until they received them.

Afterward, the Korean government expanded the online network into a centralized management and sharing system, where resident registration information could be created and kept separately by different ministries and departments. The Resident Registration Sharing System eventually came into being in 2001, and it began supporting 106 types of public services in 2002. In 2004, a new digital resident registration software program was

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developed to eliminate all manual records. The emergence of the new software program prompted a nationwide project for creating a digital database of resident registration tables, which took from 2005 to 2009 to complete.

All these efforts culminated into the development of Minwon24, the most comprehensive and advanced of all public information sharing systems in Korea. Thanks to this new system, Koreans can now request and obtain the administrative services they need from anywhere using an Internet connection, without ever having to visit government agencies.

Korea's RRS has three main characteristics. First, it is one of the country's two nationwide status identification systems, along with the family register system. Second, it records the status of citizens as individuals, while the family register system records the status of citizens according to the legal definition of "family." Status identification systems might also group citizens according to lifetime events rather than to their individual status. Germany, the United States and France keep records of birth, death and marriage, but do not divide them citizen by citizen.

Family- and event-based registration systems clarify the rights and duties that define each citizen's relations to others, but they can also make it easy to trace a citizen's blood ties and status relations by recording more information on a single register than is necessary. After the Constitutional Court of Korea ruled that this extended family register was unconstitutional, the Korean government switched to the current, immediate family register system.

Third, the RRS serves the administrative purpose of identifying members of a given local community or region, as opposed to the national registration system's legal purpose of delineating each citizen's rights and duties. By requiring settled residents of each region or community to register themselves with local authorities, the local government operating the RRS can always remain up to date with the migratory status of residents in its territories and use the data to develop and improve policy services.

The Resident Registration Act was introduced for the purpose of identifying and keeping track of the migratory and settlement trends of Korean citizens because the threat of North Korea was a security concern at that time. Hence, the law required all Koreans to register as residents in their respective regions. In 1975, a 13-digit numbering system was introduced to enhance security from the threat of North Korea, which was a significant step in the evolution of digital codification technology in Korea.

RRNs serve the purposes of identification, verification and description. As unique personal IDs, these numbers help government agencies distinguish one citizen from another.

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An RRN, once issued, never changes in Korea and is linked with the same person forever. There may be dozens of Koreans with the same name, with the same date of birth, and even with the same address (due to administrative errors), but RRNs can distinguish such Koreans with otherwise identical data. RRN is the primary key in the national databases, and this identification function makes them pivotal to the construction and maintenance of government information systems.

Korea's resident registration card (RRC) not only facilitates administrative activities related to regions of residence, but also supports the verification and certification of the status of citizens. RRCs have thus greatly improved the efficiency of administrative control over the population, enhanced public order and security, made services more convenient for the public, and strengthened the protection of the elderly and the young. They are used in all areas of service in and outside the public sector, and they form the basis for activities of national importance, including elections, tax collection and revenue services, school enrollment and assignment, military conscription and affairs, welfare services, and housing. As RRCs are so widely used and are in the interest of national security, all Koreans are required to carry them at all times under the Resident Registration Act.

## Issues to Consider for the Success of the Civil Registration System

The RRS, centered on unique identification numbers assigned to individual citizens, is crucial to the efficiency and transparency of government services. Like a number of developed countries worldwide with similar systems, certain conditions must be met to ensure the successful and functional operation of a status identification system in this information technology era.

First, extra measures must be taken to prevent ID forgery and protect personal information and privacy. This is pertinent in Korea where the number of crimes involving the use of counterfeit or stolen RRCs is steadily on the rise. Many other developed states worldwide have embarked upon projects of bringing their status identification systems up to date. These states have set out to replace paper IDs with plastic cards, or plastic cards with smart cards, mainly for the purpose of preventing forgery and counterfeiting.

The reason RRCs in Korea are prone to theft and crimes is that they carry more information than needed for identification purposes. Although ID cards today carry much less information than the original cards introduced in 1968, they still provide detailed data on cardholders, including their first and last names, RRNs, permanent addresses (and changes thereof), photos, fingerprints, and the dates and locations of card issuance.

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There is a growing demand in Korea to replace its current plastic RRCs with IC cards. The Korean government has tried on numerous occasions to do so but has failed. To avoid repeating past mistakes, the government needs to benchmark the successful experiences of other countries and establish a strategy that suits the particular conditions and needs of Korea. Policymakers also need to consider additional design solutions for preventing forgery and crimes.

Second, the scope of public and commercial services that require RRCs as the exclusive means of identification needs to be defined, clarified, and narrowed down. At present in Korea, the scope of services utilizing a sole ID is too broad. Koreans wishing to obtain government documents or certificates, or to submit these documents to public authorities, businesses and other social organizations, need only present their RRCs as the first and foremost means of identification (Article 25, RRA). Judicial police officers can also require citizens to produce their RRCs for identification purposes when they suspect that there are reasonable grounds for the citizens' involvement in crime. RRCs are the most popular means of identification in the private sector, too. Private businesses have had no qualms collecting and using Koreans' resident registration information as a condition for providing their services.

With RRNs now serving as the main basis of personal information databases used by innumerable businesses in Korea, the amount of information they can gather on an individual simply with an RRN is substantial. Nevertheless, few legal barriers are in place to regulate and restrict the collection of RRNs and related information by private-sector actors. If anything, Korean law encourages the practice (especially with respect to restricting anonymity on the Internet). Individuals wishing to purchase or benefit from certain services have no recourse but to provide their RRN upon request by corporations and organizations. At present, it is entirely up to the discretion of Korean corporations as to whether or not they collect the resident registration information of clients or customers.

Third, the RRS should be used primarily to improve administrative services, most importantly by facilitating the sharing of information among government agencies to maximize their convenience and efficiency. This requires first establishing a more efficient service process and infrastructure that supports inter-departmental sharing. A good example of this in action is the interface of the Ministry of Interior's (MOI's) Resident Information Network and the Military Manpower Administration's (MMA's) information network. The new MMA information-sharing system has not only solved a variety of chronic issues in military administration, but also has helped reduce the number of military administration employees by over 5,000.

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The military administration network is also connected to the Ministry of Foreign Affairs and Trade's (MOFAT's) e-Consul system, which handles requests and complaints regarding MOFAT offices and agencies abroad. Agencies abroad can now file Korean travelers' applications for extensions on their stay abroad and other permissions directly online with the MMA, using travelers' RRNs.

The instances of information sharing among government agencies based on RRNs continue to multiply in Korea, particularly since the establishment of the Public Information Sharing Center (PISC). PISC is one of the means by which the data in the RRS is shared. The RRS's data are mainly shared via three channels: (1) through electronic document interchange (EDI), (2) via PISC, and (3) via USB memory sticks. Of these, the EDI interfaces have proven to be the best at protecting personal information and privacy. Resident registration data are handled via software programs. PISC, however, also comes in handy when multiple departments are involved in the completion of a given single task. Using PISC, participating agencies and departments upload the lists of data they need in advance, and their requests are directed to the RRS. PISC, therefore, helps to ensure some measure of data protection, while also facilitating the efficiency of government services. Government agencies may also opt to share resident registration data through offline measures, such as USB memory sticks. This method of information sharing carries great risks of information leakage, as the USB memory sticks can be lost, given to unauthorized third parties, or fail to function properly.

The number of instances of inter-system information sharing via EDI has risen continuously over the last four years. The MOI provided over 40 million files of resident registration data to other ministries via EDI in 2011 alone. The number had risen to 58 million by 2014. The number of resident registration files shared among the agencies of the central government via EDI was 22.6 million in 2011, but multiplied to 50 million by 2014. In the meantime, the number of resident registration files submitted to public agencies dropped from 177 million in 2011 to 75 million in 2014.

The number of resident registration files shared among state agencies and public agencies is on the rise, according to the MOI's records. The number of such files that the MOI shared with the state agencies increased from 9.27 million in 2011 to 11.57 million in 2014, while the number of files it shared with public agencies increased from 1 million in 2011 to 1.37 million in 2014. In other words, the growth of the public information sharing system and PISC has increased the interchange of resident registration files between the MOI and other governmental organizations. In contrast, the number of files shared with financial institutions has dropped, which reflects the simplification of administrative processes and the consequent improvement in the protection of personal information and privacy.

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In the meantime, the number of files shared by the MOI with state agencies using offline means (USB memory sticks) decreased from 47 million in 2011 to 38 million in 2014. The number of files provided to public agencies also plummeted, from 20 million in 2011 to 0.28 million in 2014. The number of files provided to private-sector entities using USB sticks has also decreased from 16 million in 2011 to 5.3 million in 2014. In other words, the public information sharing system has drastically reduced the use of USB sticks to share resident registration data. All these are positive improvements from the perspective of privacy and administrative efficiency.

2015 Modularization of Korea's Development Experience  
The Evolution of the Resident Registration System in Korea

# Chapter 1

## Introduction

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# Introduction

Governments worldwide are increasing their efforts to provide more effective and convenient public services by using the latest technology. Developed countries, in particular, are adopting cutting-edge information and communications technologies to develop and improve the efficiency of their administrative systems. Resident registration systems as nationwide personal identification systems are pivotal to these efforts.

Diverse forms of nationwide personal identification systems have emerged worldwide as the basis for effective administrative services. The European states, for example, have not only reformed and updated their domestic identification systems from time to time, but today are also seeking to introduce a Europe-wide eID for all residents. The United States and Japan are considering the introduction of similar electronic resident cards. Korea has not been an exception and has striven to improve its RRS over the last three decades.

Developing countries with aspirations to socioeconomic development are also seeking to introduce and improve their public service delivery systems in terms of e-government by reforming their personal identification systems. The importance of resident registration cannot be overemphasized in such endeavors. One main reason why Korea achieved informatization so effectively and early is that its existing extensive RRS could play a central role in the establishment and advancement of e-government (Song, 2010).

The RRS has served as the foundation for a wide variety of innovative policy solutions that the Korean government has introduced over the past decades. Although the RRS was originally introduced as a means of keeping administrative control over the population (by gathering a broad array of data and information on individuals), few Koreans raised any objections to the introduction of RRNs. The absence of protest is quite remarkable

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by today's standards. When the RRS was first introduced in Korea, the country was still struggling to overcome the aftermath of the Korean War of only a decade before, and Koreans were concerned with threats from the North. The immediacy of threats from North Korea, as illustrated in such events as the Kim Shin-jo incident, greatly contributed to public complicity and the early establishment and success of the RRS.

The Korean government has been investing heavily in digitalizing and improving its RRS, using the latest technological developments. The RRS gathers information in a decentralized manner, with municipal, county and district authorities collecting basic data on local residents and with local governments managing these data to identify and provide services. The Korean government, at both the national and local levels, invested enormous amounts of resources in digitization of this decentralized system from the late 1980s to the early 2000s. Without the central government's decision to invest in the local government level, there could have been a resistance for adopting the digitalization, as the initial RRS was in charge of the local government.

The digitization of administrative systems as part of e-government has always been a top priority on the policy agenda of all government administrations over the past 15 years, irrespective of party and ideological affiliations. Such investment has led to improvements in the quality of service that are recognized and enjoyed by Koreans today, but digitization has also raised public awareness of the importance of privacy protection.

The policy of public information sharing among administrative agencies and public organizations has also helped Korea achieve world-class e-government. The public information sharing policy, launched in 2005, led to the creation of an administrative environment in which government agencies and organizations share resident registration data so that Korean citizens need not obtain and submit ID documents to receive the services they need. The information sharing policy has also streamlined and increased the efficiency of tasks handled by various agencies and organizations and led to the integration of RRS management.

By making it compulsory for all Koreans to register with the RRS, it forms the core basis of the entire range of important public services, including taxation, welfare services and benefits, medical care, insurances, pensions, and elections. Without the RRS, the democracy and the welfare state of Korea would not function. The RRS, in other words, is indispensable to administrative efficiency, public convenience, and social stability and order of the country.

Since its introduction four decades ago, the Korean RRS has evolved continually and has become the core basis for providing efficient and convenient public services. This study

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reviews the introduction and evolution of the RRS in Korea and analyzes the factors that have contributed to its success. The study first examines the value and necessity of the RRS, and then it discusses the process and features of its evolution. In light of the experience in Korea, this study then analyzes the factors that ought to be considered in order for the RRS to succeed.

2015 Modularization of Korea's Development Experience  
The Evolution of the Resident Registration System in Korea

## Chapter 2

### Value of the Civil Registration System

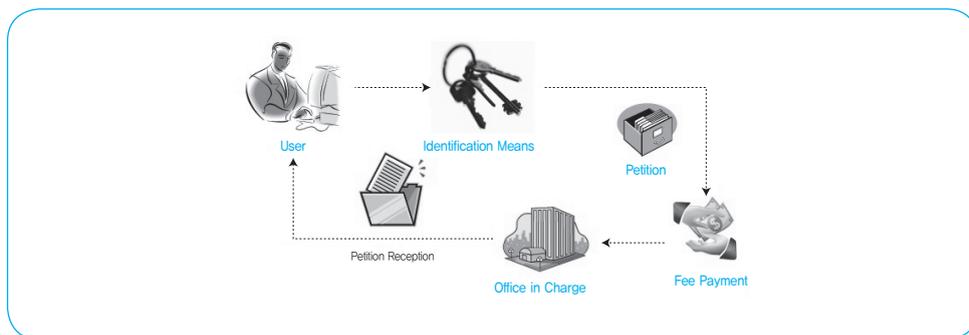
1. Convenient and Transparent Public Services
2. Efficient Management of Public Information

# Value of the Civil Registration System

## 1. Convenient and Transparent Public Services

The astonishing innovation of information and communication technologies toward the end of the 20<sup>th</sup> century has made it imperative for governments worldwide to provide convenient and transparent public services and ensure their competitiveness and sustainability in an increasingly informatized global community. Personal ID numbers mandatorily assigned by the state and the development of numerous administrative systems, their databases and interfaces, have become central to this end. More advanced institutional and technical measures are also necessary to protect an individual's privacy in providing services based on these systems. Primary keys form the most basic and core concept in developing technical systems for protecting privacy. In many countries, government-issued personal ID numbers serve the role of these primary keys.

Figure 2-1 | Electronic Administration Based on Electronic Means of Identification



Source: Eom et al. (2011).

For a government to provide public services, it needs first and foremost to identify the citizens that will benefit from the services. A citizen who makes a request or petition first needs to be identified before their request or petition is delivered to the civil servant in charge. The civil servant in charge then handles the petition based on that identification and notifies the petitioner of the outcome (see [Figure 2-1]) (Eom et al., 2011). Personal ID numbers therefore play a central role in ensuring the prompt and transparent handling of all tasks involved in this process. If a civil servant can identify a petitioner using their personal ID number, there is no need for further proof of identity. As the administrative systems are also based on these numbers, the systems can handle the requests and related tasks with much greater efficiency.

The electronic interface of diverse administrative databases maximizes the timeliness and transparency of public services. The Korean government's interface, for example, is Minwon24 ([www.minwon.go.kr](http://www.minwon.go.kr)), an online public service portal that provides a wide range of online services for the public. Every Korean with a government-assigned RRN can apply for and obtain the public services they need from anywhere with an Internet connection via this portal, without ever having to visit a public agency. The system also allows civil servants and government employees to access and view 71 types of administrative information, thus removing the need for citizens to obtain and submit further government documents and certificates in seeking public services.<sup>2</sup> PISC also enables different agencies and administrative departments to share and access information they need, without citizens needing to make repeated visits, which in turn frees up civil servants' time to more effectively handle services. Minwon24 also allows citizens to view the progress of their requests and petitions online, which significantly enhances the transparency of public services (Cho et al., 2008).

Minwon24 has digitalized almost all categories of public services, including 1,000 types of petitions and 500 types of government certificates and documents. The Korean government regularly updates and renovates the portal, its widget (for one-click services), and help systems (including oral dictations of petitions), based on detailed feedback from all the involved departments and agencies (MOPAS, 2010).

The establishment of Minwon24 has greatly promoted the public's use of digital and online means for requesting public services and drastically reduced the number of citizens visiting state and public agencies. The number of Minwon24 users has been steadily rising, with the number of applications via Minwon24 growing by 1.1 million from 2010 to 2014.

2. For more information, see the Public Information Sharing Center ([www.pisc.go.kr](http://www.pisc.go.kr)).

Over the same period, the number of issuance grew by almost 29 million, which is around 100% increase (see <Table 2-1>).

**Table 2-1 |** Number of Services Requested on Minwon24

(Unit: 1,000 requests)

	2010	2011	2012	2013	2014
# of applications	62,347,405	68,261,760	68,735,863	64,406,624	63,435,386
# of issuance	21,106,234	28,244,922	39,442,594	50,093,278	57,487,498
# of references	5,262,941	5,950,205	7,206,977	10,572,368	10,958,990

Source: www.minwon24.go.kr.

Minwon24 currently identifies users using diverse means, including personal (user-defined) IDs and passwords, Public Certificate Verification IDs, first and last names, and RRNs. Users can browse and access services that are not privacy sensitive using means of identification with relatively low levels of security. To access and receive services that are highly privacy sensitive, however, users must enter their Public Certificate Verification IDs, user-defined IDs and passwords, RRNs and names, or i-PINs (Eom et al., 2011). All of these means of identification, however, are based on RRNs. For example, the creation of a Public Certification Verification ID itself requires the identification of the recipient based on his/her RRN.

## 2. Efficient Management of Public Information

The Korean government collects and manages a vast array of administrative and residential data to provide public services. Collecting, interfacing and managing these diverse data is a costly business. The government has thus commissioned the development of newer and more cost-effective techniques for data collection and management, such as the introduction of relational databases. Of course, government-issued personal IDs play a central role in relational administrative databases, and the RRS has provided the convenient and efficient basis for collecting and managing those IDs.

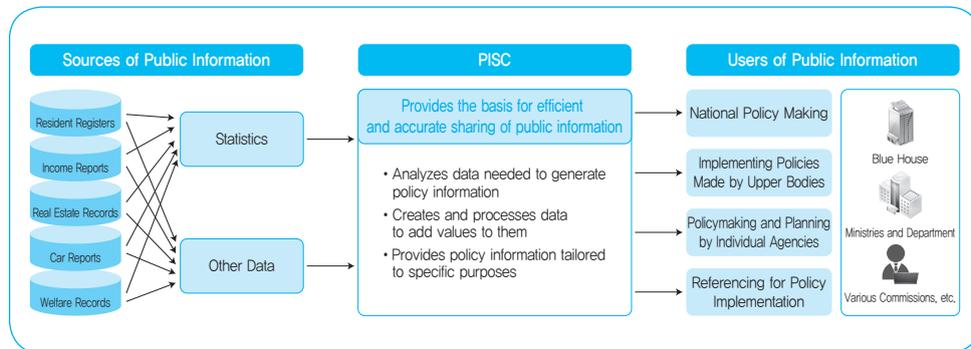
The digitalization of public administration in Korea began with the Administrative Network Computerization Project in 1987, which encompassed the databases on resident registers, real estate transactions and car transactions. The ambition for digitalization was then extended in 1993 onto public procurement, patents, national tax revenue and customs duties through phase-by-phase information system development projects (NCA, 2005). RRNs

played a pivotal role throughout these digitalization projects. As the only official means of identification in Korea, RRNs effectively eliminated the need for creating additional systems of identification, and they also enabled administrative agencies to access and use records that had been created on the basis of RRNs prior to the digitalization projects.

The government next introduced the Public Information Sharing Rules in 1998 and the concept of “e-government” in 2001, prompting the development of pan-governmental information systems, including the G4C System, the National Electronic Procurement System, the National Fiscal Information System, and others that have since revolutionized the ways in which public services are provided (Kim et al., 2007). RRNs as Korea’s only official means of identification have been crucial to the emergence and success of these systems.

The public information sharing projects launched since 2005 have featured the integration and interfacing of major administrative databases across government, together with reforms of related laws and institutions, have established an effective nationwide public information sharing system. The new system has transformed the way the government works, innovating public services and information resource management (Kim et al., 2006). Public information sharing thus underlies all e-government projects.

**Figure 2-2 |** Trajectory of Government Service Digitalization and Informatization



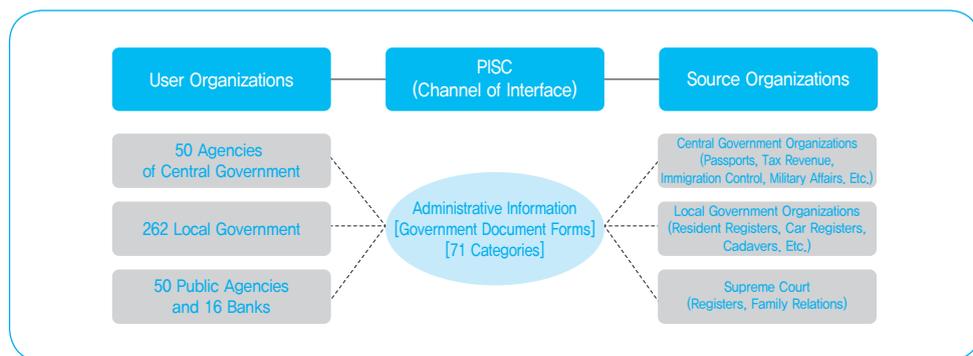
Source: Kim et al. (2007).

The Korean government established PISC for the purpose of overseeing strategies on public information sharing and improving and reforming related institutions and policies (see [Figure 2-2]). The government also identified and prioritized the categories of public information to be shared, integrated the information sharing functions of ministries and departments, and launched the Inter-Departmental Public Information Sharing Review

Committee to resolve conflicts that might arise among different departments. PISC was charged with the practical tasks of interfacing databases and developing new integrative systems (Public Information Sharing Steering Committee, 2007). Having ordered the reform and streamlining of all the organizations involved in the new information sharing system, the government enacted new laws and rules in relation to the categories of public information to be shared. Organizations providing and using shared public information were also required to establish specific policies on the terms and conditions of information sharing (Kim et al., 2007).

For the interfacing of major administrative databases, the government first developed an online sharing system and then had administrative databases incorporated into it phase by phase. The online sharing system first included core categories of information in demand across government organizations for handling their tasks and services. A summary database was thus created, based on the identification and analysis of the types of information that were most in demand. This allowed administrative organizations to begin accessing the most relevant shared information on a real-time basis (Public Information Sharing Steering Committee, 2007). The system originally included all agencies of the central government, all local governments, 50 public agencies, and 16 banks. It interfaced administrative information kept by central administrative organizations, local governments, and the Supreme Court of Korea with PISC, so that government agencies could access and share that information, too (see [Figure 2-3]).

Figure 2-3 | PISC Structure (2014)



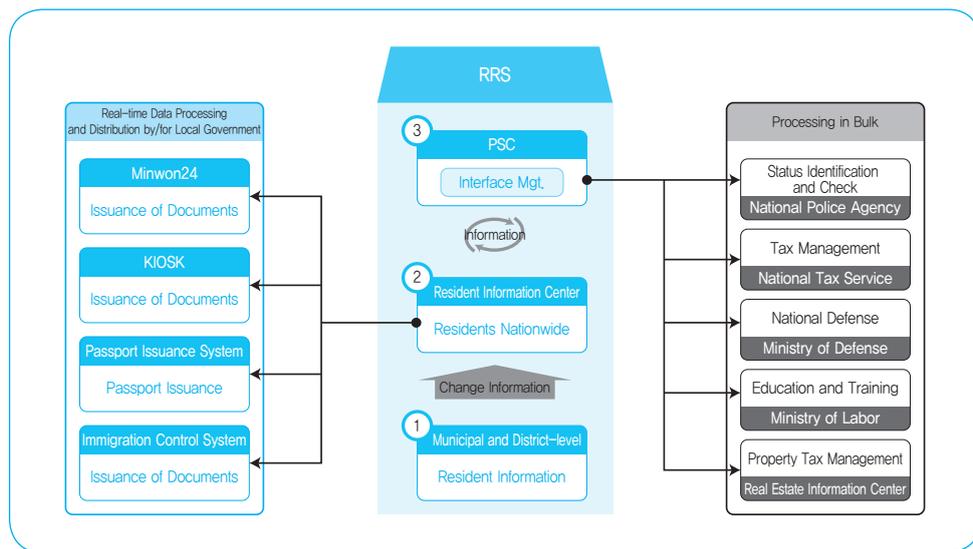
Source: PISC (2014).

The unique personal IDs distributed to citizens by the RRS provided the foundation upon which central and local government organizations could establish a public information

sharing system with PISC at its center. As [Figure 2-4] shows, the RRS forms the bases of local government databases on resident registers, car records, and cadastral records, as well as the bases of central government databases on passports, tax revenue, military affairs and others. The RRS, in other words, ensures the timeliness and transparency of public services in Korea.

As of February 2007, the new public information sharing system enabled civil servants nationwide to access, browse, and view 42 types of information across 12 categories—resident registers, real estate, cars, ships, businesses, tax revenue, veterans’ affairs, prizes and decorations, military affairs, legal affairs and patents—thus significantly streamlining and simplifying their tasks.

Figure 2-4 | How the PISC Uses the RRS



Source: PISC (2014).

The most prominent and welcomed outcome of public information sharing is the decrease in the number of government documents required and issued. As various government and public agencies can now browse and view important public records online, citizens are no longer required to obtain and file paperwork in a majority of cases. As <Table 2-3> shows, the number of certificates and documents issued has been reduced significantly. In issuing passports, for example, authorities can now view applicants’ resident registers, military records, driver’s licenses and other such forms of information directly online, thus reducing the number of

resident registration copies required by over 3.5 million copies each year. In identifying and selecting recipients of the National Basic Livelihood Security Program (NBLSP) benefits, authorities can view the 14 categories of records on income, properties and other such matters kept by the MOI, the National Tax Service (NTS) and providers of the four mandatory public insurances, thus eliminating the need for over 17 million documents a year. The 10 public organizations handling the four mandatory insurances—the National Health Insurance, the National Pension, the workers’ compensation insurance, and the Unemployment Insurance—now share 53 categories of public information, thus reducing the number of certificates and documents required by 82 million copies a year (Kim et al., 2007).

**Table 2-2 |** Examples of Public Information Sharing

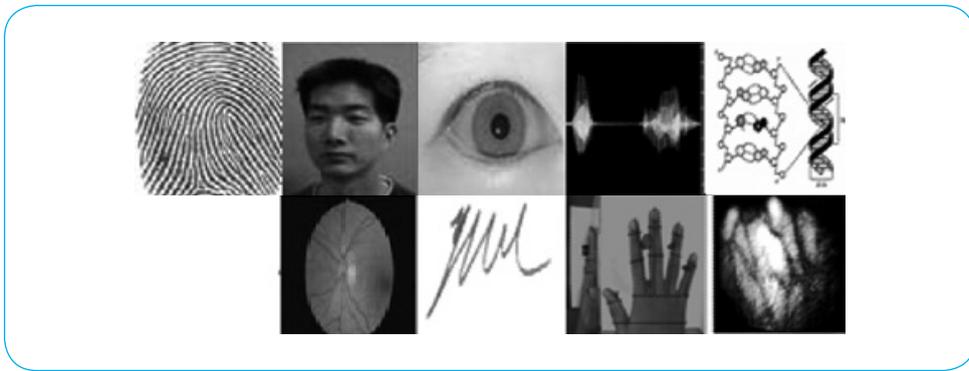
Service Category	Effect (numbers of required documents reduced)	Description
Passport Issuance	3.5 million copies saved each year, including resident registration copies.	Issuing authorities can view applicants’ resident registrations, military records, driver’s licenses and other such forms of information directly online.
Social Welfare	17 million copies saved each year, including income and property records.	Authorities involved can view 14 categories of records on income, properties and other such matters kept by MOI, NTS and providers of four mandatory public insurances.
Four Mandatory Insurances	82 million copies saved each year.	10 public organizations handling four mandatory insurances—National Health Insurance, National Pension, workers’ compensation insurance, and Unemployment Insurance—share 53 categories of public information.

Source: Kim et al. (2007).

Also, the majority of these systems involve gathering and keeping records of biometric information on citizens. Good examples of the usefulness of doing this are for public security and national defense. When a crime occurs, the first thing police can do is gather biometric information and clues on suspects. The existence of an extensive and well-kept biometric database of criminal records is crucial to modern-day crime investigation. In countries with universal military conscription, governments collect biometric information on all citizens to facilitate conscription and other matters of national security. Biometric information is also indispensable in identifying war casualties.

Biometric-based identification systems are also indispensable to welfare services and emergency relief. Welfare states provide public services for all citizens from cradle to grave, and these services start with collecting biometric information on citizens. Biometrics is particularly important in deciding the post-mortem welfare services and benefits related to the deceased and what their surviving family members receive.

**Figure 2-5 |** Examples of Biometric Information



Source: Jeon and Moon (2005).

Research on biometrics is thriving in many countries, especially for the purposes of security, healthcare, and other services. We can largely divide biometrics between static information and dynamic information. Static biometrics include such data as fingerprints, irises, facial features, blood vessels on the backs of hands and in the retinae, palm lines, ear shapes, and DNA structures (see [Figure 2-5]). Dynamic biometrics includes voices, online signatures, gaits, and keystrokes (KIPO, 2001).

Biometrics broadly refers to automated technologies for identifying individuals and their statuses based on their particular biological and physical features and characteristics (Jeon, 2002). The progress of information and communication technologies has led to a global network that enables individuals and organizations alike to share massive amounts of information and conduct businesses online. As the demand for electronic commerce continues to rise, so too does the demand for techniques of recognizing, identifying, and verifying identities and of preventing identity theft and privacy leakage. These are the driving forces in the growth of biometrics research worldwide today (Jeon et al., 2005).

Korea's RRS is a biometric-based status identification system used in a wide variety of public and commercial services. Under the current RRA, the RRS is required to collect

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biometric data on citizens' facial features and fingerprints. These biometric data are stored in the RRS, along with the unique RRNs of all citizens, and used as candidate keys for identifying individuals. The RRS' biometric database, in turn, is interfaced with numerous administrative systems for the browsing and sharing of public information. Pursuant to Article 24.1 of the RRA, Koreans are required to apply for and obtain resident registration cards (RRCs) at the age of 17 by submitting biometric data, including their photographs and fingerprints. Under Article 36.1 of the same Act, public authorities are required to collect the fingerprints of all the 10 fingers of each citizen, along with other required items of information.

Activist groups in Korea protested the alleged unconstitutionality of the RRA's requirements on collecting biometric information. A constitutional petition was filed in 1999 with respect to the police's decision to use a citizen's fingerprints—obtained upon issuing the RRCs—in criminal investigations without the consent of the citizen involved (Case No. 99-Heonma-513). Activist groups argued in this case that the current practice of collecting fingerprints from all 10 fingers has no legal grounds but is rather based solely upon a presidential decree, and that infringing upon basic civil rights pursuant to such a decree, without proper legislative grounds, violates the constitutional principle of statutory reserve. In March 2004, three teenagers aged 17 filed a constitutional petition against obligatory fingerprinting (Case No. 2004-Heonma-190). The Constitutional Court of Korea merged the two cases and handed down its ruling in May 2005. The Court decided that, while the obligatory fingerprinting of citizens at the age of 17 and over and using fingerprints collected in criminal investigations might have the appearance of excessive collection and use of personal information, it would be impossible to ensure the same level of identification if the authorities only kept fingerprints of certain individuals, such as criminals, and not of all citizens at the age of 17 and over as they do now. The Court thus ruled in favor of retaining the practice as constitutional (Case No. 99-Heonma-513, review of the unconstitutionality of Article 17.8 of the RRA, etc.).

Korea is not the only country in the world to collect and make use of a citizen's biometric information to provide public services. In the aftermath of the September 11, 2001 terrorist attacks, the United States federal government adopted the US Visitors and Immigration Status Indicator (US-VISIT) program and the biometric passport system. As of January 5, 2004, under the US-VISIT program, travelers from countries not included in the visa waiver program that enter the United States through one of its 115 American airports or 14 ports are required to submit their fingerprints and photographs to immigration control authorities.

Along with activists in Korea, groups worldwide have been raising issues with biometric programs and passports, arguing that the collection of individual biometric data, particularly

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fingerprints, amounts to a violation of privacy. These groups demanded that clear rules and standards be established with respect to what purposes and for how long such biometric data can be used and kept by governments.<sup>3</sup> However, people who travel abroad frequently enjoy the greater convenience of biometric passports, as their use significantly simplifies the immigration process.

The Biometrics Forum in Korea recently conducted a poll on approximately 1,500 people, including 500 people traveling via the Incheon International Airport, regarding their perception of biometric passports. When asked whether they would be willing to use biometric passports to minimize immigration-related hassles at airports, to prevent forgery and theft of passports, and to prevent terrorism and ensure national security, 83.8 percent of the polltakers answered yes. When asked whether they would be willing to provide their biometric information if the Korean state introduces a mandatory biometric passport system irrespective of popular opinion, 71.4 percent of the polltakers also answered yes (Biometrics Forum, 2003).

Before introducing serious biometric systems, however, the Korean government first and foremost needs to reform and expand the legal and institutional grounds supporting such systems. This is central to the demands of activist groups who oppose the installation of surveillance cameras, fingerprinting, and other such measures. The OECD's guidelines provide universally accepted standards on policy measures regarding privacy (Marcella, 2003). The eight principles in the guidelines have influenced the privacy laws of numerous countries worldwide, and they have provided the basic frame for the Framework Act on the Protection of Privacy that the National Assembly of Korea is trying to enact (NIA, 2013).

Biometric information may indeed form a crucial part of privacy. However, it is also essential to the provision of a wide range of public services. The Korean Ministry of Information and Communication (MIC) and the Korea Information Security Agency (KISA) have thus released biometric information security guidelines, laying out important matters of concern in collecting and using biometric data, and requiring public authorities to protect an individual's rights and interests in using such information (Jeon et al., 2005).

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3. For more information, see the Office of Biometric Identity Management of the US Department of Home Security ([www.dhs.gov](http://www.dhs.gov)).



2015 Modularization of Korea's Development Experience  
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## Chapter 3

### Global Trend of National Identification System

1. United States
2. Japan
3. Europe

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# Global Trend of National Identification System

## 1. United States<sup>4</sup>

### 1.1. National Identification System

The United States does not have a nationwide status identification system that assigns mandatory unique IDs to citizens, but the country's social security numbers (SSNs) and driver's licenses serve as the common means of personal identification. The Social Security Administration (SSA), a federal agency, issues SSNs and social security cards (SSCs) for nationals, permanent residents, and documented aliens. The state government issues driver's licenses, the majority starting at the age of 16 to 18.

An SSC lists only the first and last name and the SSN of the cardholder, and it cannot be used for ID purposes because it lacks a photograph of the cardholder. In most cases, the state government driver's licenses and other state-issued identification cards for people who lack driver's licenses (because they are under-age or for other reasons) serve as proper pieces of ID. Although both SSCs and driver's licenses are just issued to willing applicants, they are desirable as a universal means of identification, as United States residents need them on a daily basis.

In 2005, Congress enacted the Real ID Act, setting the standards for what items of information can be detailed on state-issued driver's licenses and other identification cards. While the Act still respects the authority of state governments to issue driver's licenses, it also allows federal agencies to refuse to recognize as valid state-issued driver's licenses

4. Part of this section is a summary of the information available on the US federal websites on social security [See [www.socialsecurity.gov](http://www.socialsecurity.gov) and [www.ssa.gov](http://www.ssa.gov)].

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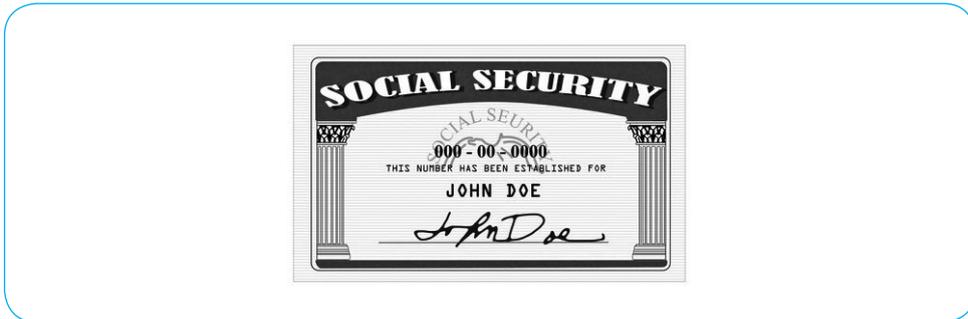
or other such forms of ID that do not comply with the standards defined by the Act. Accordingly, all forms of state-issued ID must now indicate information required by federal agencies so that ID-bearers can travel interstate or abroad and receive federal services. Initially, the implementation of the Real ID Act was postponed for a long period of time due to objections from numerous state legislatures, allegations of unconstitutionality (as violating Constitutional Amendments I and X), and activist groups increasingly concerned over its implications for privacy. The Obama administration itself took a negative stance toward the legislation. Finally, the Department of Homeland Security (DHS) launched a four-phase trial implementation project in December 2013 (Geum et al., 2014).

## 1.2. Social Security Numbers

The US SSN is akin to Korea's RRN, and was first introduced in November 1935 as part of the New Deal social security programs. The initial purpose of the SSNs was to trace income records, and individuals under the age of 14 were for decades ineligible to apply for SSNs. However, the Tax Reform Act of 1986 demanded that all dependent family members of persons on a welfare payroll also receive an SSN regardless of their age. The reach of the law has since been extended to dependent family members of all ages of persons on welfare payroll and not on welfare payroll alike. It is therefore common for Americans today to apply for SSNs for their children upon reporting their birth.

There are three types of SSCs in the United States. The first type, issued for nationals and permanent residents alike, features the cardholders' SSNs, first and last names, and signatures without any written inscriptions. The second type, issued for documented aliens who are permitted to work in the United States, features the cardholders' SSNs, first and last names, signatures, and the phrase, "VALID FOR WORK ONLY WITH DAS AUTHORIZATION." The third and last type, issued for documented aliens who are not authorized to work in the United States, features the cardholders' SSNs, first and last names, signatures, and the phrase, "NOT VALID FOR EMPLOYMENT."

Figure 3-1 | An Example of a US SSC



Source: [www.racocard.com](http://www.racocard.com).

A person can apply for a SSN in any of the following three cases: 1) if one is a documented alien who enters the United States either as an immigrant applying for permanent residency, or searching for or working in a job that has been authorized; 2) if one is applying for welfare or becomes a recipient thereof under the rules and laws of the federal social security programs; and 3), if one has been confirmed by the SSA as eligible for applying for a SSN. Here a person might be an under-aged minor or a parent or a custodian of an under-aged minor who is about to enter school.

A person can apply for the issuance or re-issuance of an SSC at the SSA. It is possible to apply for re-issuance if one's SSC has been stolen or otherwise misused or abused by third parties. However, the 9/11 Commission Implementation Act of 2004 limits re-issuance to three times a year and up to 10 times in total, as part of the measures to protect privacy in the aftermath of the 9/11 terrorist attacks. In a credit-centered society such as the United States, where SSNs are used for credit confirmation, opening bank accounts, and a host of other credit-related services, it is extremely burdensome for individuals to have their SSNs changed. It is therefore quite rare for people in the United States to apply for the re-issuance of their SSNs and SSCs.

A SSN is a series of nine numbers. The first three indicate the region or the state of the cardholder. The following two form a group number, ranging from "01" to "99," and indicate the period (month and year) in which the card was issued. The last four form a serial number, ranging from "0001" to "9999." As of June 2011, the SSA switched to the current random numbering system. The SSA refuses to re-use any SSNs that have already been issued. Over 450 million SSNs have thus been issued so far, with 5.5 million new ones issued yearly.

### 1.3. Restricting the Wide Usage in the Public and Private Sectors

SSNs were originally introduced for the purpose of identifying recipients of social security benefits. Since the Internal Revenue Service (IRS) began to use SSNs as taxpayer ID numbers in 1962, more and more public and commercial services have begun requiring SSNs—such as for driver’s licenses, banking transactions, alien registrations, and student registrations.

The Privacy Act of 1975 (5 USC 532a) states that all data and records collected in association with SSNs are to be kept strictly confidential, and that keepers of such records are not authorized to disclose them to third parties. Unauthorized disclosures of tax lists, as used in the Internal Revenue Code, and related records, are subject to the same level of penalization as unauthorized disclosures of SSNs and related records.

Yet although the Privacy Act restricts government agencies from obtaining SSNs from individuals, it does not extend the same restrictions to the private sector. So while government agencies are not allowed to require citizens to disclose their SSNs without proper legal grounds, there are information brokers across the United States who actively collect and distribute individuals’ SSNs. Commercial enterprises can even refuse to provide services to customers who do not present their SSNs (Seo, 1998).

## 2. Japan<sup>5</sup>

### 2.1. National Identification System

As in the United States, there is no mandatory nationwide identification system in Japan. Instead, the Japanese government uses Resident Card Codes, health insurance numbers, basic pension numbers, driver’s license numbers, and taxpayer’s numbers. The Japanese government has attempted to introduce a single identification system, but it ran into strong objections from activist groups.

In the past, the status registration systems used in Japan were the family registers and the Basic Resident Registers. The two were merged in August 2002 for the creation of a nationwide digital network. Accordingly, the resident register-related tasks of local governments were transferred to the central government, which had formerly only handled

5. Part of this section is a summary of the information available on the Japanese websites on resident registration [See <http://law.e-gov.go.jp/htmldata/S42/S42H0081.html>, <http://juki-card.com>, and [http://www.soumu.go.jp/main\\_sosiki/jichi\\_gyousei/c-gyousei/daityo/index.html](http://www.soumu.go.jp/main_sosiki/jichi_gyousei/c-gyousei/daityo/index.html)].

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family registers. This allowed the central government to manage the resident registration data of all Japanese citizens using a centralized online system.

The Basic Resident Register Cards (BRRCs) and System (BRRS) were then merged with the social security number (SSN) and pension number (PN) systems in March 2013, under the second Abe government of the Liberal Democratic Party. The aim was to streamline public services and enhance privacy protection. A new “My Number” system was introduced and began to assign unique ID numbers to all individuals in 2015, with the assignment of IC cards slated to follow in January 2016. All 1,800 or so local government organizations are required to reform their public service systems in accord with the new system by July 2017.

## 2.2. History of Individual Identification Systems in Japan

In 1968, the Japanese government organized the Seven Ministries Committee to kick-start the computerization of its government services. The Committee established the Advanced Information Processing Guidelines in 1970. The five steps listed in the Guidelines included the creation of the Integrated Individual Code Relations Research Committee to develop and implement personal ID codes that would be used in future government services. The integrated ID codes were introduced and became known as the National Registration Numbers.

However, activist groups joined forces to launch the Central Committee of Groups and Individuals Against the National Registration Numbers and for Protecting Privacy (led by the National Electric Communications Labor Union), which soon organized campaigns opposing the government’s plans. In 1973, the government officially retracted its plan, with the Minister of Administrative Management Agency publicly stating that integrated personal ID numbers would be introduced only in conformity to trends worldwide and according to popular consensus.

Nevertheless, the Japanese government continued to promote the idea of integrated personal ID numbers, citing their importance to the efficiency and convenience of government services and the increasing use of computing in government tasks. The Committee on the Development of Resident Registration System Networks came into being in 1994 to research the required network system. In its final report released in 1996, the Committee argued that new Basic Resident Register Codes should be introduced. It recommended that four basic data points be kept on individuals (name, address, gender, and date of birth) and that resident information should be sharable along nationwide networks beyond municipalities and prefectures.

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Thanks to a growing social consensus and the determination of the government, the Basic Resident Register Law was finally introduced in August 1999, and unique personal ID numbers and cards were issued to citizens. The government also began digitalizing resident information networks in August 2002, issuing 11-digit personal ID numbers and Basic Resident Register Cards (BRRCs).

### 2.3. BRRCs

Driver's licenses are the most common means of identification in Japan. BRRCs, however, are also issued, particularly for the disabled, the elderly and others who cannot obtain driver's licenses. Municipal authorities issue these IC cards for the purpose of enhancing the efficiency and convenience of administrative services. With these cards and the Basic Resident Register Network (BRRN), the Japanese can apply for copies of their register records and report home relocations with ease.

Resident registration data shared on the digital network include such basic items of information as name, address, date of birth and gender. The Resident Codes (personal ID numbers) consist of 10 randomly drawn numerals and one numeral designed to prevent errors. The Basic Resident Register also has four types of alien classifications, i.e., mid- to long-term visitors, special residents, temporarily permitted residents, and visitors who have extended their stays due to birth or loss of nationality. These aliens can also apply for and obtain BRRCs.

A BRRC may or may not contain the photograph of the cardholder. It does have the first and last names (and the appellations for non-Japanese cardholders as indicated in the Basic Resident Registers), address, date of birth (with the year indicated in the heisei calendar for Japanese and in the normal calendar for non-Japanese), gender, the names and logos of the issuing municipality and other items (varying from municipality to municipality and possibly including issuing booth codes and warnings). The IC card contains an electronic certificate with the ID number and a password so that it can be used for verification when someone files requests with government authorities online. These cards are not mandatory for every citizen.

Central and local government agencies together handle over 534 million cases of identification based on BRRCs each year. These cards have become a central feature of public services, as local governments require them for public ID verification and electronic signatures and they can also be used in machines that issue government documents. Residents were initially required to return their BRRCs upon leaving one area to move to another and then obtain re-issued cards upon relocation. As of July 2012, however, residents

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can retain and use the same BRRCs at their new locations for 190 days, as long as they apply for that extension directly with local authorities.

## 2.4. My Number System: Social Security and Taxpayer Numbers<sup>6</sup>

The current Japanese social security system was introduced when the national demographic structure was pyramid-shaped, with more people in the lower age groups than in the older ones. But as the size of the elderly population continues to grow rapidly, it has become necessary for the Japanese government to overhaul its social security and tax systems. After the earthquake and tsunami of 2011, disaster security became a new central issue of social security reform debates, with various administrative agencies debating possible changes. In 2013, the Japanese Diet finally enacted the so-called “My Number” bill, establishing a nationwide status ID system.

The new law supports the integration of different ID numbers used in various government services (SNs, taxpayer’s numbers, PNs, healthcare numbers, welfare payroll numbers, etc.) into a single numbering system to ensure greater efficiency in public information management, promote timely and effective sharing of information, simplify administrative procedures for citizens, and ensure the transparency and protection of privacy.

The introduction of the My Number system has solved a number of chronic tax problems, such as the inability of low-income earners to report the entirety of their income as tax deductible and the illicit receipt of tax benefits, overlapping or otherwise, by individuals who have deliberately changed their names. After the national scandal of the “missing pension records,” the My Number system, along with “My Portal,” tightened public oversight and control of individual pension records by enabling individuals to access and view their records online.

My Number Cards (MNCs) show a 12-digit number, which includes the 11-digit BRRC number and an additional number for error prevention. The cards feature the names, dates of birth, genders, photographs, addresses, and “My Numbers” of cardholders. Cardholders must keep their unique My Numbers permanently, although in the case of identity theft and abuse, cardholders may apply for new My Numbers, or the heads of municipal authorities may order My Number changes. While My Numbers are issued to all Japanese citizens, MNCs are issued by municipal authorities only to those who apply for them. Due to aging cardholders, those who applied for cards at the age of 20 or older are required to update

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6. This is a summary of the Japanese government’s guide on My Number cards (See [www.cas.go.jp/jp/seisaku/bangoseido/](http://www.cas.go.jp/jp/seisaku/bangoseido/)).

their photographs every 10 years, while those aged 19 or younger only need to update their photographs every five years.

MNCs are used in a wide variety of public services and serve as forms of ID in general, pensioners' notes, and health insurance cards. Medical institutions share medical records on patients using MNCs, thus minimizing the need for overlapping checks and preventing patients from being overcharged. MNCs are also used to check a health insurance holder's payment records and to link citizens to available local resources when they move into new areas or get married.

**Figure 3-2 |** An Example of a Japanese MNC



Source: <http://www.city.hiroshima.lg.jp/www/contents/1423819568545/index.html>.

## 3. Europe

### 3.1. Germany

Resident registration in Germany has historically been a matter of state or land legislation, with federal law providing only a framework upon which to base the land laws. However, the amendment of Section 73, Article 1.3 of the Basic Law transferred legislative authority over identification to the federal government in 2006.<sup>7</sup>

The German government subsequently introduced the new Federal Resident Registration Act (FRRA) in June 2009,<sup>8</sup> replacing the existing land-by-land resident registration statutes

7. Art. 1 Nr. 6a aa des Gesetzes zur Änderung des Grundgesetzes v. 28. 8. 2006, BGBl I, 2034.

8. BGBl I, S.1346. Law on the Resident Registration Cards, Electronic Identity Cards and Changes in Other Related Rules.

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with the Law on Resident Registration Cards and Electronic Resident Cards (hereinafter the FRRRA), effective as of November 1, 2010 (Park, 2013). The new resident registration card (RRC) resembles plastic IC credit cards and can serve not only as nationally ascertained IDs, but also as signature verifications for various documents and services provided by the government.

At the core of the new federal legislation is the introduction of an electronic identification system. Electronic IDs (eIDs) are now used as a universal means of identity verification on the Internet so that citizens need not visit government offices with their IDs to receive services.

### **3.1.1. National Status ID Cards**

Along with the cardholder's unique serial number, an ID card features their first and last names, academic degree or background, nickname, date and location of birth, height, eye color, address and nationality. The names, academic degree, date of birth, serial number, and validity date on these cards can be automatically scanned by optical character readers (OCRs). The card's serial numbers, however, are not for identifying the card bearer, as the cards are re-issued every 10 years with new numbers (Section 2, Article 1, FRRRA). The numbers do not contain any information on the card bearers (Section 3, Article 1, FRRRA). The German government has been issuing electronic ID cards in addition to the plastic IC cards since 2010.

### **3.1.2. Usage of Personal Data, Including Serial Numbers, and Restrictions**

Government agencies can keep records of all matters relating to ID cards, including the serial numbers, in "printed" form only. Printed records can be used exclusively for the purpose of verifying that ID cards have been issued (Section 3, Article 3, FRRRA). Public and private sector entities are prohibited from extracting (abruf) personal data from databases (dateien) or merging (verknüpfung) those databases by using the serial numbers. ID authorities and police, however, are allowed to use these numbers (Section 3, Article 4, and Section 4, and Article 2, FRRRA). The serial numbers are also never to be entered into the ID register (melderegister) (Section 3, Article 4, FRRRA).

Aside from the serial numbers indicated on ID cards, government agencies across Germany issue their own ID numbers and cards to process their services and duties. No attempt has been made so far to bring all these different ID systems together into a single integrated ID system. The pension insurance number, for example, includes the insurance beneficiary's date of birth and other personal data, but it can only be used for old-age pension payouts.

### 3.1.3. Introduction of the eID

The German government amended the FRRA in 2009 to introduce a new eID system, which has been effective as of November 2010. The new eIDs are issued for adults at the age of 16 and over and renewed every 10 years. The front of an eID carries the ID-holder's photograph, first and last names, serial number, access number, ID expiry date, date of birth, nationality, location of birth, and signature. On the back is the name of the issuing authority, the ID-holder's address, baptismal name or nickname, and a logo for mechanical recognition. The chip inside the card carries the information on the ID-holder's fingerprints, photograph, and six-digit personal identification number (Section 5, FRRA). The fingerprints are taken and included only upon a ID-holder's request and never used for purposes other than issuing the ID card. Fingerprints can only be taken at police stations, the customs office and other ID-related authorities (Section 6, FRRA).

## 3.2. The Netherlands<sup>9</sup>

### 3.2.1. Burger Service Numbers

The Netherlands introduced Burger Service Numbers (BSNs) in November 2007 to replace the existing Social Fiscal Numbers (SoFis), which had been used in a limited range of government services (taxes and pensions), and to facilitate the sharing of public information among public agencies.

Like the SoFis, BSNs are nine-digit numerals. While these numerals carry no particular information on the number-bearers, siblings who were born in the same region share the first four digits. Citizens already in possession of SoFis need not apply for BSNs and can continue to use their SoFis as BSNs instead.

The range of services in which BSNs are used continues to widen to include not only taxation and welfare benefits, but also employment support, bank transactions and accounts, medical care from hospitals, and other services crucial to daily life. Aliens are also required to obtain BSNs from the authorities in their respective regions so they can work and receive healthcare benefits.

### 3.2.2. Usage in Public and Commercial Services

The Personal Data Protection Act strictly limits the scope of information that public authorities can access and obtain from an individual's BSNs. Commercial enterprises need

9. This section is a summary of the information available on the Dutch website on resident registration (See <https://www.government.nl/topics/identification-documents>).

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additional and prior permissions, as well as comprehensive security systems, to collect and use BSNs in providing their services.

### 3.3. Sweden

#### 3.3.1. Personal Identity Number System<sup>10</sup>

The identification system in Sweden dates back over three centuries and originates from the lists of congregants used by churches. In Sweden today, the Swedish Tax Agency is responsible for resident registration. The resident registration system collects and keeps such data as a person's name, personal ID, gender, location of birth, date of birth, and mailing address. Swedes are required to report any changes made to these data to the state (Nilsson, 1980).

The Swedish government assigns mandatory personal IDs to all Swedes upon birth. Each personal ID is a serial number consisting of six digits and then four digits. The first six digits indicate the date of birth, and the first of the latter four digits serves as the check digit (like the error correction number used in the Korean RRN), while the last three digits are a specific issue number.

An increasing number of administrative agencies now use these numbers to facilitate administrative tasks, particularly with respect to taxation, social security, and military administration.

#### 3.3.2. Usage in Public and Commercial Services and Its Restrictions

The Data Act of 1973 defined the terms and conditions of the collection and usage of all forms of digital personal data until its replacement by the Personal Data Act (PDA) of 1998. The new legislation divides resident registration data into two types and permits digitalization to varying extents. Data needed for enhancing the efficiency and transparency of public services can be digitalized actively, while data whose disclosure might compromise privacy should be kept strictly off the digitalization list (Kim, 2006).

Moreover, the PDA explicitly details the types of “sensitive personal data” and bans the digitalization and unauthorized disclosure of an individual's racial/ethnic backgrounds, political affiliations, religious/philosophical convictions, affiliations with labor unions, health status, and other sensitive matters (Article 13, PDA). Article 22 of the Act restricts

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10. For more information on the subject, see Swedish Tax Agency (2014), *Population registration in Sweden*.

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the use of PINs without the number-bearer's consent except for clear and important reasons, such as the protection of physical security. The Act also defines the extent to which the Swedish government and its agencies may use PINs (Article 50).

### **3.3.3. Opposition to the PIN System and Reality**

The Parliamentary Commission on Revision of the Data Act acknowledged in its report of 1978 that PINs may have implications for violating an individual's privacy, but concluded that the system needed to be retained and used, given the difficulties and costs that its elimination could raise (Kim, 2006).

The PIN system has proved successful in Sweden without attracting much social controversy, mainly thanks to strong popular consensus. Swedes acknowledge that PINs are crucial for the state to provide efficient, transparent, and convenient public services, including social security benefits.

## **3.4. European Union**

### **3.4.1. EU eID**

The European Union (EU) has sought to introduce an integrated European biometric pass so that citizens of all the member states can access and use public and commercial services throughout the Union. It is believed that the pass will help consolidate the political and economic integration of Europe. The new biometric pass would not only facilitate border control, but also prevent citizens of the EU against terrorism and threats from non-EU states. In addition, it would enable citizens of member states to apply for and receive unemployment benefits and move freely within the Union in search for jobs.

The origins of a European eID can be found in the Community Framework for Electronic Signature Directive (CFESD) proposed in 1999. The Framework proposed that a legally valid eID service for all member states of the EU be introduced to ensure the secure and stable exchange of information across national borders and increase opportunities for consumers and businesses, thereby enhancing the market economy and competitiveness of the EU as a whole.

The European Council then released its Thessaloniki Declaration on June 20, 2003, outlining a unique approach to collecting, using, and securing biometric information for the creation of a common passport information system for all residents within the European Economic Area (EEA).

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Council Regulation (EC) 2252/2004 of December 13, 2004, thus laid down the “Roadmap for a pan-European eIDM Framework” for the development of an eID system for all Europeans, including the residents of the non-EU states. The Roadmap envisions establishing an electronic system that would identify residents using secure IC cards. The European Commission encouraged the member states to join the trans-border eID initiative, and the then 23 EU member states agreed to accept and implement the Roadmap.

Council Regulation (EC) 910/2014 of July 23, 2014, which set out the rules of eIDAS, electronic identification, and trust services, sought to pave the way for a predictable regulatory environment that would allow companies, citizens, and public agencies that have chosen to provide and use trust services for electronic commerce to make secure and effective use of eID data.

### 3.4.2. eID Cards

Various states across Europe have introduced their eID systems for different motives and with different backgrounds. The level of technological refinement thus varies from state to state, and different factors and restrictions are in place regarding the access and use of eID data by commercial and public entities depending on the state. The European states, however, expect that the interoperability of their eID systems will increase over time as they are increasingly used in public and commercial services across borders (Naumann and Hogben, 2009).

An eID is an electronic means of personal identification and is used to ensure the security and reliability of the user’s personal data in both online and offline environments (EUROSMART, 2008). Belgium, for example, used to provide ID cards that showed a cardholder’s address prior to 2005, but has since switched to an eID system that carries a cardholder’s address and other such data concealed in IC chips.

In an effort to enhance the public’s trust in eIDs and increase the interoperability of different eID systems, the European Council has launched a major pilot project named STORK (Secure Identity across Borders Linked). The project aspires to create an eID system that can be used across the entire European Union by overcoming the technical and organizational differences among the eID systems of different member states.<sup>11</sup>

The EU continues to make active efforts to develop a region-wide eID system and a host of technologies that ensure the security of personal data and privacy. Germany and Estonia have adopted leading eID systems, and the European eID is officially recognized by all

11. For more information on the pilot project, see <https://www.eid-stork2.eu/>.

member states in the Union. Estonia's eID system is now a central feature of the country's online voting system. The parliamentary elections held in Estonia in February 2007 was the first instance of online voting in the world, with over 30,000 voters casting their ballots on i-Voting.<sup>12</sup>

### **3.4.3. European Citizen Card**

Despite the EU's efforts to achieve a completely integrated single market, currency system, and broader economic and social development across the region, numerous barriers remain to the free migration of workers across national borders. Citizens of one member state often find it difficult to seek and obtain public services they need if opening a new business or relocating to live in another member state.

The EU's STORK project will ensure a single and regionally accepted system of identification for all citizens of the region. With such a system, businesses and citizens will be able to access and benefit from public and administrative services with ease anywhere in the Union, without discrimination as they move or travel.<sup>13</sup>

The European Network and Information Security Agency (ENISA) revealed the EU's intentions in its report of February 2009, Privacy-Protecting Function of the European eID Card Standard. The report states that numerous member states have already begun to issue eID cards or established plans to that end, and there is ongoing research on technologies for improving privacy protection under the existing or planned eID card systems. The report also notes that the introduction of a single integrated eID card that can be used across Europe can expedite efforts towards launching initiatives for new technological infrastructure (Naumann and Hogben, 2009).

### **3.4.4. European Commission's Policy on Privacy Protection**

The emergence of a Europe-wide eID system will necessarily entail the development of new and better technologies for codifying and protecting personal data. The European Commission regards privacy protection as a core issue that must be solved before it will introduce eID cards for use in taxation, other government services, and commercial enterprises.<sup>14</sup>

12. For more information on online voting, see <https://e-estonia.com/component/i-voting/>.

13. "REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the protection of individuals with regard to the processing of personal data and on the free movement of such data [General Data Protection Regulation]" COM (2012) 11 final.

14. Council Framework Decision 2008/977/JHA.

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The EU provides a framework for privacy protection policies via the declarations, conventions, and guidelines of the European Commission and Council, which encourages member states to enact and implement privacy protection laws based on its standards. Two main examples are the Data Protection Directive of 1995 and the Privacy and Electronic Communications Directive of 2002. On March 12, 2014, the plenary voting of the European Council led to the passage of the European Commission's EU Data Protection Reform plan. Designed to guide and restrict the use of personal data by public and private entities, the plan requires these entities to report the purposes for collecting personal data in advance, to notify individuals of the collection and use of their personal data, to hire officers in charge of personal data management and security, and to refrain from transferring the personal data of EU citizens to non-EU states.<sup>15</sup>

15. [http://europa.eu/rapid/press-release\\_MEMO-14-186\\_en.htm](http://europa.eu/rapid/press-release_MEMO-14-186_en.htm).

2015 Modularization of Korea's Development Experience  
The Evolution of the Resident Registration System in Korea

## Chapter 4

### Overview of the Korean Residence Registration System

1. Evolution of the Korean Residence Registration System
2. Establishing the Electronic Residence Registration System
3. Features of the Korean Residence Registration System
4. Factors for Success

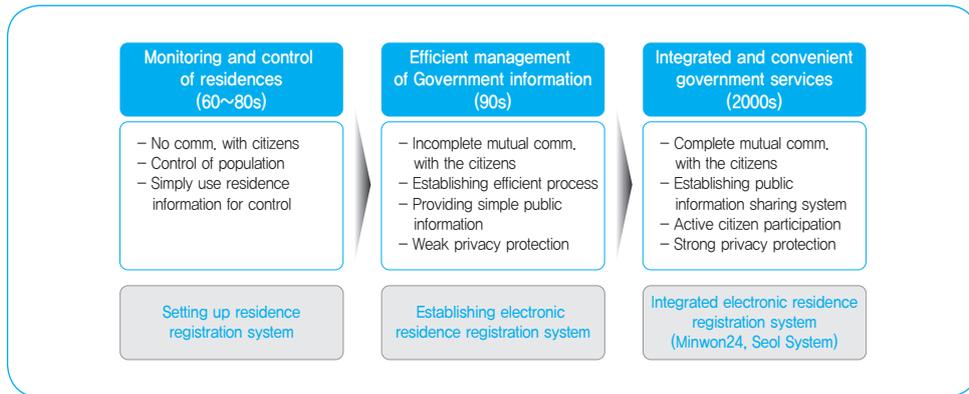
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# Overview of the Korean Residence Registration System

## 1. Evolution of the Korean Residence Registration System

The history of the Korean RRS can be roughly divided into three phases. The first phase, encompassing the 1960s and the 1970s, was when the RRS was first introduced as a means of administrative control over the population. The main purpose of the RRS during this era was to monitor the population and support the military administration in the face of escalating tensions between the two Koreas. The second phase, from the 1980s to the 1990s, was when the emphasis gradually shifted from administrative control to administrative efficiency. The government during this phase enhanced the efficiency of administrative systems and services by computerizing resident registration information. The third phase, which began with the new millennium and is ongoing, is centered on the development of integrated administrative services. During this phase, Korea has completed the digital RRS and implemented online and interactive government services. The advancement of mobile technology has also ushered in an era of smart-device government services, which people access on smart devices at any time and from any location.

Figure 4-1 | Development Stages of Korea Residence Registration System



Source: by the Author.

### 1.1. Introducing the RRS as a Means of Administrative Control

The RRA was enacted for the first time in 1962. The legislation was designed to ensure administrative control and surveillance over the population, requiring all citizens to register with the authorities in their respective regions to keep the government up to date with the residential relations and migratory trends. All individuals had to register their name, gender, date of birth, current address and place of family registration with the municipal authorities of their current address, irrespective of whether they continued to reside at or had left the place of family registration. The law also required households to report moving-in or moving-out of their respective regions, whether it concerned entire households or just individual members (Articles 2, 6 and 10, RRA). In this way, the RRS served the administrative purpose of identifying and keeping track of community populations and migratory trends, and then using the information to decide on what administrative actions to perform.

The RRS, however, evolved over time towards improving the convenience and efficiency of public services. (see <Table 4-1>) The modern-day RRS has its origin in the first amendment of the RRA in 1968. This amendment introduced the RRCs and RRNs, which replaced the “citizen cards” and “provincial resident cards” that had been in use until then. In 1970, the second amendment of the RRA introduced the 12-digit RRN and made RRCs compulsory for all residents aged 18 and over. The RRA’s third amendment in 1975 lowered the age requirement for RRCs to 17 years old and introduced reinforced penalties for failure to issue and carry RRCs. The amendment also introduced a whole new design for RRCs and

switched the 12-digit RRNs to 13-digit ones. Another new RRC model was introduced in 1983 so that changes of address could be recorded on the backs of cards. It was also in 1983 that the current horizontal-text cards came to be used.

**Table 4-1 | Evolution of the Korean RRS**

Date	Legal Ground	Description
May 10, 1962 (effective as of June 25, 1962)	Statute No. 1067	- New RRA enacted - Citizen/provincial resident registration systems still retained
RRA amended (1), May 29, 1968 (effective as of August 29, 1968)	Statute No. 2016	- 12-digit RRNs for individual residents - RRCs for residents 18 years old and over (citizen/provincial resident cards abolished)
RRA amended (2), January 1, 1970 (effective as of February 1, 1970)	Statute No. 2150	- RRC issuance now made mandatory
RRA amended (3), July 25, 1975 (effective as of August 26, 1975)	Statute No. 2777	- RRC age requirement lowered to 17 years old - New RRC design introduced - 13-digit RRNs introduced
RRA amended (9), December 17, 1997 (effective as of December 1, 1998)	Statute No. 5459	- Plastic "Resident Cards" introduced, along with Resident Card Issuing Centers
RRA amended (12), January 26, 2001 (effective as of April 27, 2001)	Statute No. 6385	- New legal grounds for assigning RRNs established. - New legal grounds for issuing copies of resident registers via automatic document printers established - Online RRS reference system developed (on 8 items of resident registration information, accessible from 23 central government departments, provinces, cities and districts nationwide)
RRA amended (13), March 22, 2004 (effective as of March 22, 2004)	Statute No. 7201	- Legal grounds for Electronic Resident Registration Information Backup System established - Copies of resident registers now available for view and issuance at eup, myeon, and dong offices - Legal grounds for resident registration-related reports and requests filed online established - Legal grounds for electronic verification of RRCs established
RRA amended (14), March 24, 2006 (effective as of September 25, 2006)	Statute No. 7900	- Reform for centralization of electronic management of resident registration tables - Spouses and other direct family members of household heads now able to file required reports with household heads' authorization

Source: Public Service Handbook (2014).

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## 1.2. Stage of Ensuring Administrative Efficiency

The amended RRS of 1975 remained in place throughout the 1980s. As the age of informatization began to dawn upon Korea in the late 1980s, however, the government was prompted to informatize and computerize much of the RRS, beginning in the mid-1980s, for the purpose of enhancing administrative efficiency. The digitalization of resident registration information, for effective and convenient public services, began in the late 1980s.

Starting with the Project for the Computerization of Six Administrative Networks in 1987, as part of the National Basic Network Digitalization Project, the Korean government went on to launch a number of important digitalization projects. By January 1991, when its main implementation project finally came to an end, the 3,700 eup, myeon, and dong offices across Korea were connected to the central Resident Registration Management System. The project had involved the digitalization of 70 million manually recorded Resident Registration Tables, consisting of 19 million on households and 51 million on individuals (NIA, 1992).

The Resident Registration Management System computerized a whole range of tasks involving the issuance of resident register copies and related certificates, as well as the compiling of various statistics (on new migrants, births, expiries, the Civil Defense Corps, etc.) (Song, 2007). Officials could now handle resident registration tasks using electronic and automated means on networks connecting all metropolises and provinces.

In an attempt to further update the system in line with the worldwide demand for digitalization and informatization, the Korean government also sought to introduce electronic RRCs in 1997. The plan, however, ran into strong opposition from activist groups concerned with privacy violations. Later in September 1999, with the 10<sup>th</sup> amendment of the RRA, the current plastic RRCs containing holograms were introduced.

## 1.3. Stage of Providing Integrated Public Services

The advancement of e-government and digital technology has led to an astounding transformation of the Korean RRS since the dawn of the new millennium. A major example is the Roh Moo-hyun administration's Public Service Innovation Project, which sought to digitalize and streamline over 4,000 types of administrative services, including the online processing of 400 types of civil complaints and the sharing of 20 types of public information among ministries and departments.

The 12<sup>th</sup> amendment of the RRA in 2001 led to the establishment of an online system for viewing resident registration information, which provided eight basic items of resident

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registration data for 23 departments and ministries of the central government, as well as for provincial and municipal authorities nationwide. The public information sharing project helped minimize inefficiencies by reducing the need for repeatedly obtaining and exchanging commonly required government documents. The project meant that government services became more integrated. In March 2002, a new plastic RRC model was introduced, featuring high-molecular coating technology for preventing forgery and falsification.

With the legal grounds for the Electronic Resident Registration Information Backup System established in 2004, copies and certificates of resident registers began to be issued electronically. In November 2006, another new RRC model was introduced, featuring fluorescent publishing technology for preventing forgery and falsification.

## 2. Establishing the Electronic Residence Registration System<sup>16</sup>

### 2.1. Overview

The RRS, indispensable to the entire range of public services in Korea, was chosen as one of the first administrative network systems to be digitized via the Electronic RRS Management Project. The project was one of six for digitizing six major administrative networks to enhance the efficiency and timeliness of government functions. The project involved digitizing administrative systems that were pivotal to other electronic networks, including those for finance and security.

The digitization of the RRS aimed to create workstations at eup, myeon, and dong offices for managing household and individual Resident Registration Tables and also to automate many related tasks. Upon its completion, civil servants and citizens could process the registration, correction, expiration, and transfer of resident registration records, and it also allowed them to issue and obtain copies of resident registers, statistical reports, various civil complaints, Confirmations of Factual Investigations and other announcements.

In a way, the Korean RRS is decentralized, as local government organizations can directly handle and manage local residents' registration records. Enabling this involved digitizing the RRSs at all of the nation's local government organizations. The digitalization and management of resident information spanned across eup, myeon, and dong-level administrative networks, and local offices were interfaced with the regional informatization headquarters at the level of metropolises and provinces (NIA, 1992). The data entered at

16. Part of this section is a summary of the National Information Agency (NIA)'s final report on the Prioritized Administrative Network Digitalization Projects. For more information, see NIA (1992).

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the level of local offices are directly saved in the regional informatization headquarters for immediate backup.

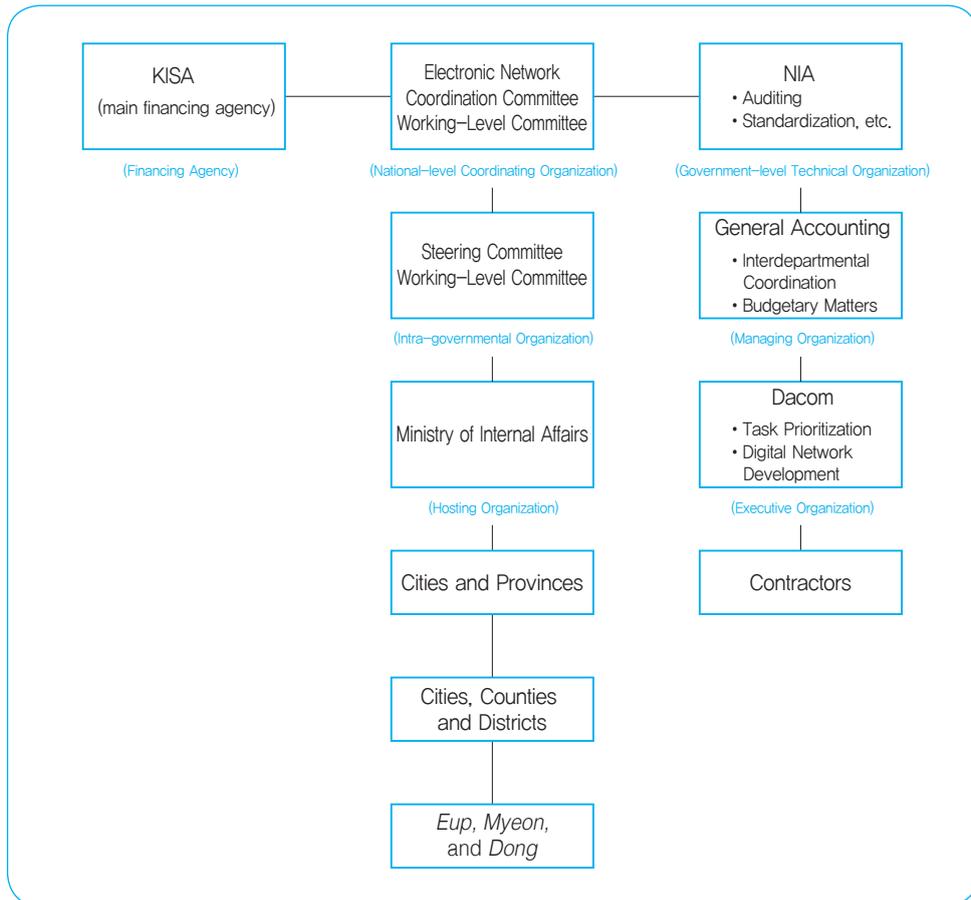
The RRS digitalization project was launched in 1988, and all manually recorded Resident Registration Tables nationwide were entered into the new digital system by 1989. By 1991, six main public services involving the RRS—including the issuance of copies of resident registers, resident tax billing and receipts, school enrollment notifications and voter registrations—were handled electronically. The scope of the system was significantly expanded in 1993, and today the system can even serve citizens through mobile devices.

## 2.2. System and Scope of the Electronic RRS

### 2.2.1. System Implementation and Scope

[Figure 4-1] shows the organization and system for implementing the RRS digitalization project. At the head of the organization was the MOI (then known as the Ministry of Interior Affairs), and LG U+ (then known as Dacom) was the main executor. The participation of Korean software companies was crucial to the development of the electronic RRS system. Samsung SDS worked on developing the host software program, and Byeoksan Information Industries worked on expanding the network nationwide.

Figure 4-2 | RRS Digitalization Project Implementing System



Source: NIA (1992).

The Korean government’s initial scope of development was for three main categories of services to be included into the new system; namely, tasks to be handled immediately online, tasks to be handled in batches, and other tasks. The first, immediate online tasks included code management, data management (e.g., printing of registers), resident registration, and other services concerning military affairs, civil defense, public security and order, medical care, veterans’ affairs, elections and tax administration. The second tasks to be handled in bundles included operation, code management, data management (e.g., duty arrangement), notifications regarding resident registration, statistics, and record browsing and views (see <Table 4-2>).

**Table 4-2 | Types of Required Entries into the Electronic RRS**

	Entry Items
11	78 Items
Basic (23)	(1) RRNs; (2) Names; (3) Blood Types; (4) Marital Status; (5) Occupations; (6) Resident Registrations; (7) Places of Family Registration; (8) Reasons and Dates of Changes Made to Family Registrations/Family Heads; (9) Changes of Family Heads; (10) RRNs of Family Heads; (11) Relations to Family Heads; (12) Addresses; (13) Special Addresses; (14) Move-in Dates; (15) Reasons and Dates for Changes of Address; (16) Administrative District Names; (17) Household Head Names; (18) RRNs of Household Heads; (19) Relations to Household Head; (20) Telephone Numbers; (21) Dates when RRCs were Issued; (22) Reasons for Essuing RRCs; (23) Education
Military Records (16)	(1) Military Status; (2) Dates Decided; (3) Physical Exam Level; (4) Actions Taken; (5) Groupings; (6) Ranks; (7) Military Service Numbers; (8) Service Branches; (9) Specialties; (10) Date of Military Enlistment; (11) Dates of Discharge; (12) Causes of Discharge; (13) Grounds for Discharge; (14) Status Classifications; (15) Commission Dates; (16) Causes for Changes of Status Classifications
Reserve Forces (5)	(1) Formations; (2) Affiliations; (3) Formation Dates; (4) Reasons for Formation/Postponement; (5) Reasons for Disqualification
Civil Defense (8)	(1) Formation Dates; (2) Formations; (3) Reasons for Exemption/Postponement; (4) Dates of Changes of Affiliation; (5) Affiliations; (6) Duties; (7) Drill Hours Served; (8) Attendance Hours
Manpower Mobilization (12)	(1) Mobilization Type; (2) Occupation Code; (3) Reasons for Exemption/Postponement; (4) Reasons for Disqualifications; (5) Whether Designated for Lntensive Scientist and Engineer Management; (6) Mobilization Agencies; (7) Mobilization Years; (8) Number of Training Days; (9) Training Agencies; (10) Dates when Wartime Warrant were Issued; (11) Reported Matters; (12) Dis-mobilization Dates
Licenses (4)	(1) License Types; (2) Registration Numbers; (3) Issuing Authorities; (4) Specialties
Living Security (4)	(1) Beneficiary Types; (2) Health Status; (3) Average Monthly Income; (4) Effective Years
Medical Care (2)	(1) Medical Care Status; (2) Medical Insurance Numbers
Veterans (2)	(1) Veteran Status; (2) Veteran ID Numbers
School-age Children	(1) Reasons for Postponing Enrollment
Other (1)	(1) Resident Registration Table Registers

Source: NIA (1992).

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## 2.3. Development Stages of the Electronic RRS

With the goal of enhancing the efficiency, timeliness and effectiveness of administrative services, the Korean government developed an electronic RRS in three phases. We can understand these phases in terms preparations, development and stabilization, centralization and integration (see <Table 4-3>).

### 2.3.1. Phase 1: Preparations (1978~1988)

#### a. Trial Projects

Historically, the Korean government's efforts to digitalize its RRS date back to the late 1970s when it decided to launch a series of trial projects for digitalizing administrative networks phase by phase. These trial projects lasted for a decade, from 1978 to 1988, and took place in Cheongu in Chungcheongbuk-do and in Jongno 1-gadong, Hyoja-dong, Gangnam-gu, and Nonhyeon-dong in Seoul. The Economic Planning Board (now the Ministry of Strategy and Finance) and the Korea Electronic Communications Institute (KECI, now the Electronics and Telecommunications Research Institute, ETRI) and local government organizations worked together to develop and run the trial systems.

The first part of the trial involved integrating the six main long Resident Registration Tables with personal Resident Registration Tables and also introducing a new national RRC model in 1983. In 1986, the government expanded the scope of the trial to include eight local jurisdictions outside Seoul. The working-level group for the trials consisted of five members from the Ministry of Interior Affairs; five from Dacom; one from the System Engineering Institute (merged with the ETRI), and employees from nine hardware suppliers.

Trial operations using the new digital systems at eight locations nationwide ran from January to September, 1986. The trial software program was the main subject of the test, so the government could determine conditions for the digitalization and localization of workstations in various local jurisdictions and identify issues that needed solving. From 1987 to 1988, the Korean government ran more trial operations in the 55 dong offices of the three main districts of Seoul, i.e., Jung-gu, Gangnam-gu and Seocho-gu. These trials, run by the Seoul Metropolitan Government and Dacom, revealed what improvements needed to be made to the trial software program.

#### b. Project Planning

The full-scale project for the development of an electronic RRS began with the Administrative Network Digitalization Plan in 1984, created by the General Accounting

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Board (GAB, now merged with the MOI) and reviewed by the Semiconductor and Information Industries Committee (SIIC). The SIIC had chosen RRS digitalization as a central candidate for the Administrative Network Digitalization Project (ANDP) in February 1984 and produced a draft plan to that end in August.

Then, in November of the same year, the Computer Network Coordination Committee chose the RRS digitalization project as a core part of the ANDP. Another draft plan for RRS digitalization was produced in March 1985 and the project was given the go ahead with presidential approval weeks later in May. Detailed plans on budgets, works and trial operations were then released from June to December 1985, and polls were launched in December 1985 to survey and gather opinions in the field.

In May 1987, a meeting was held among executives from GAB, the Ministry of Interior Affairs, the NIA (now the National Information Society Agency, NISA), and Dacom to discuss plans on practical tasks (GAB), trial operations in Seoul (Seoul Metropolitan Government), system reforms (NIA), polls on existing systems (Dacom) and other such matters. In September 1987, the executives produced a draft plan for the review of tasks to be digitalized, which included 78 items of information to be entered (including RRNs) and 111 forms of documents to be printed (including the RRN Assignment Registers). The plan was circulated across the government for review and feedback before the specific scope of tasks that were to be included in the RRS digitalization project was finally decided on in March 1988.

### **c. Development of the Pilot Electronic RRS (July 1986~December 1988)**

The electronic RRS was analyzed and designed according to the results of trial projects, before the development of the pilot system finally began. The pilot program for local government organizations was based on a comparative review of the standard program for IBM's PC/XT environment and the trial program for three local jurisdictions suited to IBM's PC/AT environment. The participating companies then developed the host program.

The analysis and design of the pilot system lasted from July 1986 to March 1987. The process involved finding solutions for the issues that were raised during trial operations. This, in turn, required the analysis of local government organization settings and users, identification of data codes needed, and changing the logical and physical designs of documents and ledger forms. The standard pilot program for local government organizations was then developed in the months of April through June in 1987 for a PC/XT environment. The standard program was equipped with communications functions in July 1987 for the review of its compatibility for interfacing with the main computer programs and systems.

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### 2.3.2. Phase 2: Construction of the Electronic RRS

The second phase involved developing a nationwide electronic RRS based on the results of decade-long preparations and trial operations, followed by improving and optimizing that system through additional test runs and stabilization measures.

This phase lasted for four years from 1988 to 1992. Although the government originally intended to complete the development of a full-scale electronic RRS in two years and four months—by December 1990, the development process had to be extended twice. After the establishment of the original plan for digitalizing the RRS in the mid-1980s, further software and hardware development and improvements were necessary through sub-unit projects along the way.

The resulting nationwide electronic RRS involved the digitalization of 243 tasks across 78 items and 11 categories of services handled by the MOI and local governments. The new system encompassed 4,098 organizations in total, including the MOI, provinces, municipalities, counties, districts and smaller neighborhood offices. It ended up digitalizing 57.267 million Resident Registration Tables, 1.296 million of which were for households and 44.307 million for individuals. Dacom was again chosen as the main executive organization for undertaking the project, first making investments and later being reimbursed by the government. The project cost a total of KRW 189.3 billion, comprising 58.5 billion in prior investments from the national treasury and KRW 130.8 billion from local governments.

From 1987 to 1988, the involved parties defined roles and responsibilities in developing the host program and workstations, and they developed a pilot system encompassing 46 tasks across 10 categories of government services. The project team also completed the development of a pilot program for Seoul and completed the software program for local governments by 1988.

#### a. System Development

From 1988 to 1992, the Korean government purchased and installed the equipment needed for a nationwide electronic RRS and communications network. From January to April, 1989, the 55 dong offices of Seoul on the trial project upgraded their software.

As frequent power failures interrupted these projects and raised the need for more effective backup, the government installed streaming tape drives (STDs) and uninterruptible power supply (UPS) systems for backup in workstations in July and August of 1989.

The Korean government then developed and distributed software programs for entering and operating data across the nation from March 1989 to November 1992. Having begun

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to distribute data-input programs for multipurpose equipment of office automation, the government also distributed evolving versions of the software program (versions 1.0 through 8.0) until late 1992, when the electronic RRS project was officially completed.

#### **b. Test Operations and Stabilization**

In 1989, having finished testing the new system in three Seoul districts, the government expanded the scope of its testing to the entire province of Gyeonggi-do, expanding network communications and building and testing a database. Testing was essential to the review and improvement of the overarching system.

Testing proceeded in phases from January 1991 to March 1992. In January 1991, six electronic tasks at the level of local neighborhoods were tested nationwide and each added task was subjected to testing that lasted for at least a year.

For 10 days from September 11~20, 1991, the Ministry of Interior Affairs performed an inspection of the entire electronic RRS at the metropolitan and provincial level. The inspection group consisted of 14 members drawn from GAB, the Ministry of Information and Communications (then the Ministry of Postal Service), the Finance and Economics Board (then the EPB), the Ministry of Internal Affairs, the NIA, and Dacom. The inspectors concluded that things were not ready for a proper inspection due to the delays in program development and distribution and the brevity of the test periods. They decided to delegate the technical review to the NIA.

Next, a stabilization team was formed, with members drawn from the Ministry of Internal Affairs, Dacom, the NIA, and Korea Telecommunications, to stabilize the new system for four months from September through December, 1992. The main objectives were to expand the main networks connecting the Ministry of Internal Affairs and metropolitan and provincial governments, and to upgrade and stabilize the software components. The team hoped to ensure the system could provide services and policy data on demand at any location.

Although the stabilization program helped improve the overall status of the electronic RRS, it failed to solve all outstanding problems, such as the mismatch of data exchanged between local and metropolitan governments and the failure of the system to complete data transfers.

The MOI completed the acquisition of the system hardware from Dacom by October 1992, but on the condition that Dacom would provide free updates and maintenance for the system from July 1993 to December 1994, which was when software improvement and stabilization would be needed.

### c. Electronic Issuance of Resident Registration Copies

Beginning in 1994, Koreans could request and obtain copies of their resident registrations from anywhere in Korea, regardless of their current addresses, using metropolitan and provincial information systems. They could also complete the migration report process by simply reporting their moves to new locations. However, as local authorities were still required to transfer and exchange their records via metropolitan and provincial information systems, it took at least two to three days for each report to be processed.

The Korean government thus launched the Move-in and Move-Out Integration System Project in 1995, replacing certain sections of communications networks with public data networks to expand channels and speed up data transfers, thereby enabling the systems to process multiple files at once. Beginning in May 1995, Koreans could simultaneously file their move-in and move-out reports through local databases, without having to go through the metropolitan and provincial systems.

Pursuant to Article 28 of the RRA and Article 46 of the Enforcement Ordinance for the RRA, the ERRIC then came into being to back up and ensure efficient management of resident registration data. The Center, created in 1997, was launched into full-time operation in 1998 and merged the 16 metropolitan and provincial digitalization networks into one. A new RRC design was introduced in 1999~2000.

Table 4-3 | ERRIC Chronology

No.	Date	Project/Description
1	Apr. 1986~Mar. 1987	Trial Project for RRS Digitalization (8 <i>eup</i> , <i>myeon</i> and <i>dong</i> offices nationwide)
2	Feb. 1987	1 <sup>st</sup> General Plan for ANDP Finalized (1987~1991)
3	Jan.-Dec. 1988	Trial Project for Digitalizing Resident Registration Tables (Jung-gu, Gangnam-gu and Seocho-gu, Seoul)
4	Mar.-Sep. 1988	Electronic Resident Registration Management System Plan Established
5	Apr.-May 1988	10,920 Workstations Set Up at <i>Eup</i> , <i>Myeon</i> and <i>Dong</i> Offices Nationwide
6	May-Sep. 1988	52.15 million Records Digitalized (10.9 million for households, 41.25 million for individuals)
7	Jan. 1991	Electronic Issuance of Resident Register Copies at <i>Eup</i> , <i>Myeon</i> and <i>Dong</i> Offices
8	Nov. 1991	Nationwide Online Networks Connected

No.	Date	Project/Description
9	Oct. 1992	Digital RRS Hardware Acquired
11	Jul. 1993	Digital RRS Software Acquired
12	Jul. 1994	Resident Register Copies and Move-in Reports Now Handled Online Nationwide
13	Feb.–Dec. 1994	Move-in and Move-out Report Integration System Developed
14	May 1995	Integrated Move-in Reports and Resident Register Copies Now Issued at any Location in Korea Irrespective of Current Address
15	1997–Nov. 1998	RRC Issuing Center Established (launched into operation in Dec. 1998)
18	Sep. 1999–May 2000	Plastic RRCs Introduced
19	Dec. 2000	Resident Databases of Municipal Administrative Information Systems Developed
21	Jan.–Jun. 2002	Resident Registration Information Backup Center Established
23	Jan.–Sep. 2003	Pilot Local Electronic RRS Now Expanded Nationwide
24	Feb.–Oct. 2003	Re-development of Resident Registration Center (with new DBs and APs) Communications Network Reform (x.25 socket to TCP/IP/LAN)
25	Feb. 2003–May 2004	RRC Verification System Developed
26	Mar. 2004	RRC Issuing Center Now Renamed “ERRIC”
27	Apr. 2004	Copies of Resident Registers Now Issued Nationwide on the Internet
28	Jul.–Oct. 2004	Scope of ERRIC’s Functions Expanded
30	Aug.–Dec. 2004	Software Program for Eliminating Manual Resident Records Developed
32	Jun.–Sep. 2005	Hardware Upgrade Project (KRW 7.29 million × 6, on lease)
33	May 2005–Sep. 2012	Database on Original Resident Registration Table Images Completed
35	Mar. 2006	RRC Verification Service Now Available at <i>Eup</i> , <i>Myeon</i> and <i>Dong</i> Offices
36	Jun.–Oct. 2007	Web-based RRC Verification Service Now Extended to Financial Institutions
39	May 2009	Scope of Plan for Extending RRC Verification Service to Financial Institutions Expanded; Web-based Service Launched

No.	Date	Project/Description
42	Nov. 2011	Supreme Court's Family Relations System Now Interfaced with ESB
43	Oct. 2012	Fingerprint Codification
44	Jul.-Nov. 2013	Signature and Electronic Signature Verification System Developed
45	Jul.-Nov. 2013	Voice-Based RRC Confirmation (ARS 1382) Project Expansion
46	Nov.-Dec. 2013	RRC Verification Service Launched in Primary Financial Sector
47	Aug. 2014~Present	Resident Registration and Seal Affixation System Improvements for Koreans Living Abroad

Source: Internal documents at MGAHA (2015).

### 2.3.3. Development of an Integrated Resident Registration System

Throughout the 1980s and 1990s, the Korean government developed, upgraded and expanded the electronic RRS. Despite the time and effort invested, the new system offered little tangible or immediate benefits for the public at large. An electronic system was in place, but bureaucratic conventions and inertia persisted, with civil servants using the old system alongside the new. This multiplied confusion and inconvenience for citizens and also burdened civil servants with mounting and overlapping workloads.

In acknowledgment of this inefficiency, the Korean government set out in the new millennium to establish an integrated and nationwide resident registration system, attempting to achieve major reforms in administrative procedures and to encourage sharing of public information among state and public agencies. By establishing information-sharing databases, the government provided a common pool of electronic resident registration records for all departments and ministries to use.

Having implemented the Shared Resident Registration System in 2001, the government surveyed users' experiences and launched new electronic services across 106 categories in 2002. The government also created the Common Backup Center for Major National Information Systems (encompassing resident registration, national tax and customs records) in 2001 and 2002. In 2002, the PC-server-based RRS at the level of eup, myeon and dong offices was abolished and replaced with a municipal RRS that went into operation in 2003.

The issuance of resident registration copies via automated machines continued to expand nationwide, with 1,853 machines installed across Korea as of January 2009. A new Internet-

based resident registration copy issuance system was developed in 2003 and after being successfully tested was launched nationwide in 2004.

However, there was still a dearth of effective sharing of information among different government organizations, which made manual recordkeeping seem almost more efficient than using electronic systems. The problem lay with persistent bureaucratic resistance and old conventions rather than with the new systems (Kim et al., 2007). The Korean government thus launched its Public Information Sharing Project in 2005 (see <Table 4-4>).

In 2004, before launching the new project, the government had completed the development of a new software program for eliminating all manual Resident Registration Table records, and it used this program to enter electronic records into a centralized database from 2005 to 2009 (Gam, 2006).

**Table 4-4 | PISC Chronology**

Date	Description
Nov. 2005	Public Information Sharing Steering Committee and Public Information Sharing Steering Group Organized
Aug. 2008	Three Phases of PISC Development (concerning 71 types of information, catering to all administrative agencies, 50 public agencies and 16 banks)
Dec. 2009	Phase 1 of Demand-centered PISC Development Completed (concerning 82 types of information, catering to all administrative agencies, 57 public agencies, 16 banks and 1 educational institution and featuring pilot One Screen and Electronic Government Document Management Systems and information distribution services of an expanded scope)
May 2010	Public Information Sharing Steering Group changed and Renamed to "PISC"
May 2010	Prior Consent from Information Providers Now Required; "View request" Now Formalized
Nov. 2010	Phase 2 of Demand-centered PISC Development Completed
Nov. 2011	Phase 3 of Demand-centered PISC Development Completed
Jul. 2012	Organizational Reform of PISC
Nov. 2012	PISC Upgraded

Source: <http://www.pisc.go.kr/fa/fa010/introduction/history.jsp>.

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## 3. Features of the Korean Residence Registration System

### 3.1. RRS as a National Identification System

#### 3.1.1. Managing Resident Information

Managing the status of residents through identification systems is crucial to the workings of the modern state. An identification system allows the state to define the rights and obligations of individuals and manage services and regulations, including taxation and conscription. Central and local government organizations worldwide today therefore register their state's residents, including foreign visitors.

National identification systems can be divided into two categories. One is the household registration system that is being managed by the level of family. The other is the residence registration system that keeps records of individuals based on their living locations. There are other administrative ways of categorizing and identifying individuals, such as according to their license records or for other special purposes (see <Table 4-5>). Germany, the United States and France, for instance, have opted to categorize individuals according to major lifetime events, such as birth, death and marriage.

The Korean government operates both family register and resident registration systems. These national identification systems are crucial to the definition and clarification of the rights and obligations that each individual bears. However, they tend to accumulate excessive details and amounts of information about individuals, thus facilitating the government's often comprehensive and even totalitarian-like control of the population.

While a household register system records the family relations of individuals' for legal purposes, a resident registration system keeps track of an individual's addresses and migratory trends so that administrations can decide what services to perform. Different states adopt and manage resident registration systems in different ways. In some cases, local governments rather than central ones are in charge of keeping resident registers. In other cases, such as in the United States, Ireland, Australia and Canada, residents are required to register themselves for specific and limited purposes only, such as council tax registrations (United Kingdom) and voter registration (United States).

In the case of Korea, the military authoritarian government that came to power in the early 1960s was responsible for introducing a compulsory nationwide resident registration system, requiring all citizens to register themselves with their respective local authorities, so that the government could keep track of migratory movements nationwide. By 1968, the

Korean government began to assign mandatory 12-digit personal identification numbers to all citizens and switched to a 13-digit numbering system in 1975.

**Table 4-5 |** Types of Status Registration Systems

Type	Purpose	Characteristics	Korea's case
Status Registration System	To clarify one's relations to others.	<ul style="list-style-type: none"> <li>- Managed by the state/courts</li> <li>- Sorts data by event/time</li> <li>- Sorts data by individual/family/ household</li> </ul>	Family registers that define individual's relations to family members
Resident Registration System	To serve administrative functions.	<ul style="list-style-type: none"> <li>- Managed by central and/or local governments</li> <li>- Sorts data either for general purposes or by event (e.g., voter, taxpayer, social security recipient registrations)</li> <li>- May be compulsory or voluntary</li> </ul>	A compulsory registration system managed by the state and required of all citizens
Special-purpose System	To serve administrative functions (that require data identification).	<ul style="list-style-type: none"> <li>- Sorts data either for general purposes or special purposes</li> <li>- Managed by central and/or local governments</li> <li>- May be compulsory or voluntary</li> </ul>	RRNs are compulsory IDs issued by the state, but taxpayer codes and passport numbers are issued to willing applicants for special purposes only
License Certification System	To serve administrative functions (i.e., verify qualifications).	<ul style="list-style-type: none"> <li>- Managed by central and/or local governments</li> <li>- May serve either general purposes or special purposes</li> <li>- May serve a single purpose at a time or multiple purposes at once</li> </ul>	<ul style="list-style-type: none"> <li>- Special-purpose IDs: passports, driver's licenses, government employee cards, etc.</li> <li>- General-purpose IDs: RRCs</li> </ul>

Source: Lee (2003).

According to the law, the head of the local government is in charge of the residence registration task, and the head of the local government can partly delegate the tasks or rights to the low level local government (Article 2, RRA). The Minister of the Ministry of Public Affairs and Administration has to guide and monitor the tasks (Article 3, RRA). The Minister of the Ministry of Public Affairs and Administration can also delegate the authority to management and use the electronic residence registration system (see <Table 4-6>).

**Table 4-6 | Residence Registration Task by Organizations**

Major	Head of Eup, Myeon, and Dong at the Place of the Residence Registration	Head of Eup, Myeon, and Dong at the Place of the Residence Registration
Collect the RRC by mistake	Accept all the claims related with residence registration	Check and announce the residence registration tasks
Pay the managing residence registration cost	Keep the original Residence Registration Application documents	Send the issues associated with family-relationship registration items related with residence registration
Managing and maintaining the information system	Manage household residence registration list Manage residence moving in and out	Put the residence registration number into the family-relation book
Right to consent the electronic data	Accept and manage family-relationship registration items related with residence registration Issue residence registration number Collect fines for delayed residence registration	

### 3.1.2. Residence Registration Card as an personal ID card

A national identification system like Korea’s RRS often issues ID cards to certify that the cardholders have completed their registration as required. Similarly, a passport certifies that the passport holder is a national of the country that has issued it. All travelers traveling abroad are required to carry their passports with them. Whether it is compulsory for all citizens to obtain passports, even if not intending to travel, differs from country to country.

Some states issue special-purpose IDs, such as driver’s licenses and Residence Registration Cards (SSC), to willing applicants rather than requiring all citizens to obtain them. For example, in the US, there is no national ID card, but the driver’s license is a de facto ID card, while the birth certificate works as a civil registration system. The Korean case is unique in the sense of its compulsory residence registration system as well as the residence registration card with its unique identification number (see <Table 4-7>).

The general consensus is that RRCs as IDs in Korea provide more benefits and save costs by facilitating administrative management, upholding national security and social order, enhancing the convenience of public and commercial services, and ensuring the protection of the elderly and the young (Kim, 2011).

**Table 4-7 | CRS, RRS, ID Comparison of Major Countries**

Country	Civil Registration System	Residence Registration System	National ID card
US	Birth Certificate	Principally not required	No, but SSN, Driver's license
Japan	Household Registration	Compulsory	No – but by services And now My Number
Germany	Household Registration	Compulsory	No – but by services And now eID
France	Household Registration	Not compulsory	National ID Card
Korea	Family-relation Book	Compulsory	Residence Registration Card

Source: Based on the author's collected data.

## 3.2. Issuance and Control of RRNs

### 3.2.1. RRNs as Unique Personal Identification Numbers

RRNs are personal identification numbers (PINs) that serve as data identifiers to help government organizations determine and provide services for different classes of citizens. RRNs are unique, non-redundant, permanent, and exclusive to individual holders (Kim, 1999). Once issued as a unique identifier, a RRN represents the number-bearer for the entirety of his or her lifetime. In other words, RRNs form a crucial part of personal data bestowed by the state on behalf of individuals—assigned according to specific criteria for specific state purposes. With unique RRNs, government agencies differentiate between individuals that might have the same names, dates of birth and even addresses (due to some technical errors). RRNs, therefore, serve as important and indispensable identification keys in databases on personal data.

Governmental authorities and businesses are able to verify the status, qualifications and eligibility of number-bearers through RRNs displayed on RRCs and resident registrations. Individuals also use RRNs to identify and verify themselves in seeking and obtaining government services and documents. According to a recent survey by the Korea Information Security Agency (KISA), 65.6 percent of businesses that request RRNs on their websites answered that the main purpose was for verifying users (KISA, 2006). However, this wide and extensive use of RRNs by government agencies and commercial entities for verification also motivates illegal activities and crimes involving theft, misuse/abuse, and/or illicit collection of RRNs.

Because RRNs have a descriptive function, detailing birth information, it is at least easy to determine an individual's age and sex using only his or her RRN. The RRN is a 13-digit

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number containing the number-bearer's date of birth, sex and location of birth. In a poll, businesses with membership-based websites that collect RRNs stated that the second most important reason for collecting RRNs, after identification, is to check a member's age (Jeong et al., 2004). The revealing descriptive function of the RRNs can also render them a means of discrimination or control over number-bearers, and so they might be seen as supporting the violation of privacy and discrimination.

### 3.2.2. Assignment of RRNs

All residents residing in Korea are subject to resident registration. Accordingly, RRNs are assigned to all residents within the jurisdictions of Korea, except for aliens.

#### **Article 6.1, Resident Registration Act (RRA):**

"A mayor, a magistrate of a county, or the head of a district office must register each Korean-national individual (hereinafter "resident"), who intends to stay in that jurisdiction for at least 30 days, in his/her respective jurisdiction according to the terms and conditions of this Act. Aliens are exempted."

Article 7.3 of the RRA states that mayors, county magistrates, heads of district offices and the heads of other local government organizations have the authority to assign RRNs. Other matters of RRN assignment, such as the general matters of the RRN system and local numbering, are decided by the MOI.

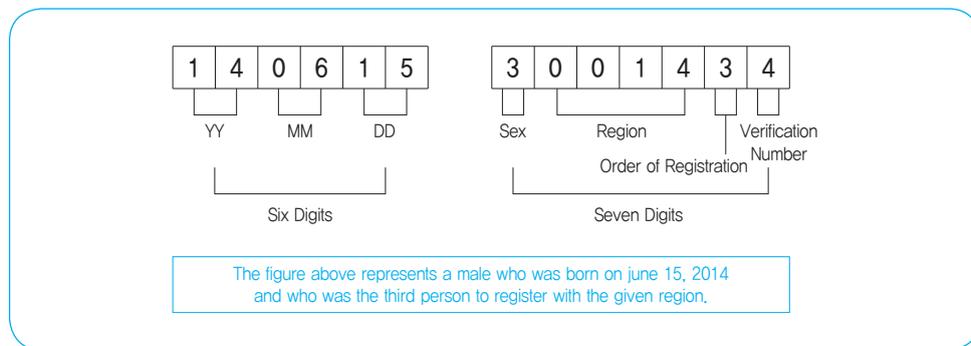
Designed to facilitate a resident's identification and enhance the efficiency and convenience of public services, RRNs are unique, never overlap, and are never re-issued once used. Originally introduced as 12-digit numbers on August 27, 1968, the RRNs became 13-digit numbers as of August 25, 1975 ([Figure 4-2]).

While it is impossible for two or more RRNs to share all 13 digits and their placements, two or more RRNs might have the last seven digits and their placements in common. Individuals with these digits as "1000000," as also shown on their passports, are those that emigrated overseas prior to 1975 before the new 13-digit number system came into effect. The gender numbers for individuals who were born in the 19th century used to be nine (9) for men and zero (0) for women. For individuals who were born after 1900, the gender numbers are one (1) for men and two (2) for women. For people who were born in the new millennium, the gender numbers are three (3) for men and four (4) for women. If there are more than nine individuals in a given jurisdiction that share the same gender and date-of-birth numbers, the

authority responsible for that jurisdiction is to request additional region numbers from the MOI to give these individuals separate RRNs (Public Service Handbook, 2014).

If an individual’s RRN has to be changed, the responsible authority collects a series of required documents, including public register copies, from the individual and files an official request for the RRN change with involved authorities and agencies, such as banks, health insurance providers, credit card companies, and schools. The authority then issues a new RRC, with the change indicated on the back of it, for the individual.

**Figure 4-3 | 13-Digit RRN**



Source: Public Service Handbook (2015).

### 3.2.3. Introduction and evolution of the RRS in Korea

The Korean government first introduced the RRS in Korea with the enactment of the RRA (Statute No. 1067) on May 10, 1962. The RRA was one of the first statutes introduced by the military government led by President Park Chung-hee. The legislation was originally intended for administrative control and surveillance over the population, as the first article clearly states: “This Act aims to facilitate administrative tasks of the government by requiring residents of cities and counties to register with the authorities in their respective regions so as to keep the government up to date with the residence relations and migratory trends among residents.” Intended more to facilitate the government’s control, it had little to do with providing public benefits and welfare services, as the concepts of public assistance and welfare policy were still foreign to Korea at the time (Jang, 2005). The RRA required all individuals to register their names, gender, date of birth, current address, and place of family registration with the municipal authorities of their current address—irrespective of whether they continued to reside at or had left their place of family registration. The law

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also required households to report moving-in or moving-out of regions, whether it involved entire households or just individual family members (Articles 2, 6 and 10).

The RRS in Korea today not only keeps government authorities up-to-date with migratory and residential trends among individuals, but also aims to ensure the efficiency and convenience of administrative tasks and public services. The current RRA states that its purpose is “to increase convenience for the public and facilitate administrative tasks and services by requiring individuals to register themselves with municipal, county or district authorities and thereby keeping government agencies always informed of, and up-to-date with, migratory and residential trends among Koreans.” The tasks of resident registration fall within the purview of mayors, county magistrates and heads of district offices (Article 2). Residents required to register are those who have obtained addresses in given regions with the intention of staying for at least 30 days (Article 6).

RRCs and RRNs were introduced with the first amendment of the RRA in 1968. With this first amendment, “citizen cards” or “provincial resident cards” that until then were issued by mayors of cities or governors of provinces were abolished. Instead, local authorities were to assign 12-digit RRNs to all residents and issue RRCs for individuals 18 years old and over. The invasion by armed North Korean guerillas on January 21, 1969, led to a further amendment of the RRA in January 1970, which required RRCs to be compulsory for all residents aged 18 and over so that authorities could check RRCs when necessary to identify and round up North Korean spies (Kim, 1999).

The third amendment to the RRA made in July 1975, after the Yusin Constitution had been declared in 1972 and the Emergency State declared in 1974, required local authorities to issue RRCs for all residents aged 17 and over, “to bring resident registrations up to date and ensure the efficient management of all human resources for the Civil Defense Corps and the reserve forces and thereby reinforce national security.” The RRS was introduced in response to the heightened sense of alarm at the possibility of another North Korean attack in the aftermath of the so-called Kim Shin-jo Incident (Geum et al., 2014).

The introduction of the Enforcement Ordinance to the RRA on August 26, 1975, and the amendment of the Enforcement Rules for the RRA in November of the same year, upgraded RRNs to the current 13-digit format, indicating residents’ date of birth, gender, and location of birth. While the change reflected the Korean government’s adaptation to the growing trend of digitalization and codification, it also meant that the 13-digit numbers, detailing information on associated individuals, were vulnerable to various forms of privacy violation (Song, 2007).

The RRS remained the same from 1975 to 1983, until the new RRC model was introduced. Since 1991, when the Korean government launched an electronic RRS, constant efforts have been made to improve and update the system. Local authorities began to issue copies of resident registers in 1995, and in 1997, they began to handle resident registration information in a centralized manner with the establishment of the Electronic Resident Registration Information Center (ERRIC) (see <Table 4-7>).

**Table 4-8 | Evolution of the RRS**

Date	Description
May 1968	RRNs assigned (12-digit) and RRCs issued (for people aged 18 and over)
Jul. 1975	RRCs issued (for people aged 17 and over) and RRNs changed to 13-digit numbers
Oct. 1983	RRC model changed (from vertical to horizontal) and renewed for a second time
Jun. 1994	70 million resident registration records now entered into the computer system
Dec. 1997	ERRIC now established, providing a centralized platform for managing resident registration information (providing basic and online data for national policymaking)
Sep. 1999	RRC model changed and renewed for a third time (from paper to plastic)
Dec. 2001	Online RRS View System established, providing online access to eight main categories of resident registration information for 23 departments of the central government and for provinces, municipalities, counties, and districts nationwide
Mar. 2004	Copies of resident registration now issued and submitted electronically

Source: Song (2007).

## 4. Factors for Success

The Korean government has been running the RRS for over five decades now. There are a number of factors that have led to the successful establishment of this system as the core basis for a wide range of public services.

First, the Korean government has been heavily investing in adopting and making use of the latest developments in information and communications technology over the last three decades. E-government and digitization of the RRS have been an important part of the national policy agenda during this time. The continuing government investment in technology has led to the evolution of public services from desktop computers to the web and finally to the mobile platforms of today. In recognition that the continued improvement and evolution of administrative services are key to national competitiveness, the Korean

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government has been continuing this investment notwithstanding changes of administrations over the last few decades. As a result, Korea is now recognized as one of the most advanced e-governments in the world and is praised for providing the most accessible and quality administrative services possible.

It is possible that the Korean government has invested excessively or incurred overlapping costs by introducing new technologies into its administration to renew or update systems. Thus, the details of the costs of new technology should be analyzed carefully before making government investment decisions.

Second, public consensus on the introduction and operation of a compulsory RRN system was crucial to its success. As the RRS was originally introduced when a threat of hostility from North Korea was a part of daily life in South Korea, few Koreans objected to the introduction of the system. As Koreans are accustomed to the RRS and having almost all public services linked to it, there are few objections today about the continued use and operation of RRNs. Rather, people tend to resist changing the RRNs to a new system, such as iPIN.

However, the progress of informatization has raised public awareness of privacy protection, and there is a growing criticism of how easy it is to access important personal information using RRNs alone. Recognizing this, the Korean government has introduced various measures to strengthen security and privacy, such as the iPINs. Nevertheless, Koreans are so used to using their RRNs to access services they need that to date few have switched to iPINs.

Third, the Korean government has worked hard to create an electronic system of administration based on RRNs so that ordinary Koreans can easily access and receive the public services they need. In the public perception, the benefits of the RRS simply outweigh the costs. Of course, it is important to determine the exact benefits and costs of the RRS, but no statistics or data are being gathered to that end. In any case, because RRNs are used in almost all public and commercial services that individuals receive, it is near impossible to estimate such costs and benefits.

The technological efficiency and convenience of administrative services in Korea have almost eliminated public resistance to the continued use of RRNs by government. Nonetheless, it will be important for the Korean government to analyze and adopt measures to both prevent privacy leakages and handle privacy leakages effectively after they occur.

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## Chapter 5

### Issues to Consider for the Success of CRS

1. Technical Aspects: Privacy Protection
2. Institutional Aspects: Scope of Information being Collected & Used
3. Organizational Aspects: Convenient Government Services

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## Issues to Consider for the Success of CRS

Our review of the evolution and features of the Korean RRS reveals that, in order for such a system to function properly, it is crucial for the government to prove to the public that the benefits of keeping such a system are greater than the costs.

Thanks to the Korean government's active and continued investment in e-government and public services based on RRNs, Koreans have become familiar with the convenience and effectiveness of public services. This, of course, does not eliminate growing concerns with and demands for greater privacy protection. For a nationwide status identification system like the RRS to continue to function and succeed into the future, it will not only need to provide efficient and convenient services, but also ensure privacy protection.

In this chapter, we will explore what additional factors the Korean government ought to consider and satisfy to ensure the success of its nationwide status identification system, the RRS.

### 1. Technical Aspects: Privacy Protection

The government needs to be more proactive in preventing the forgery and falsification of RRNs and RRCs to gain public confidence in the use of the RRS. First, a strong policy guideline has to be carried out to ensure a complete system of protecting privacy against forgery and falsification. This can start by reducing the scope of personal details and data that the government collects. RRNs are used commonly across public and commercial services—in all public and financial services, such as credit rating agencies that keep databases of RRNs for identification purposes, and private entities collect RRNs via websites and other means—it is extremely easy for public agencies and private entities

alike to access and use databases based around personal RRNs. This greatly increases the worry and likelihood of privacy violations when using these databases, whether on purpose or by mistake, for illicit purposes (Ha, 2014).

The number of complaints regarding privacy violations has been steadily rising year after year. KISA, for example, received 166,000 privacy violation complaints in 2012, 139,000 of which involved the falsification and abuse of RRNs and other forms of ID. Of these cases of identity theft, 3,855 were attributed to the absence or inadequacy of technical privacy protection measures, and 3,507 had to do with the nonconsensual collection and use of personal data. There were also complaints involving the use or disclosure of personal data for purposes other than had been originally stated and the refusal on the part of public agencies or private entities to comply with RRN-providers' request to view or have their records deleted, corrected, or suspended (see <Table5-1>) (KISA, 2013).

**Table 5-1 | The Number of Claims for Invasion of Privacy**

Year	2010	2011	2012	2013	2014
Total	54,832	122,215	166,801	177,736	158,900
Nonconsensual collection of personal data	1,267	1,623	3,507	2,634	3,923
Use/disclosure of personal data for other purposes	1,202	1,499	2,196	1,988	2,242
Theft and falsification of RRNs and other personal data	10,137	67,094	139,724	129,103	83,126
Refusal of requests to view or have records deleted, corrected, suspended	826	662	717	674	792
Personal data leakage due to absence /insufficiency status	38,414	38,172	12,915	35,284	57,705
Others	2,986	13,165	7,742	8,053	11,112

Sources: KISA, 2015.

There should be a policy that clarifies the scope of collecting personal information. Of course, names and photographs are considered crucial. A survey by Song (2007), for instance, confirms their central importance and both items are included in identity systems around the world. Names and photographs are the most basic items of information with which individuals can be identified, but IDs in other countries usually add date of birth. Song's survey confirms the importance of this information in the public's perception, too. We therefore need to research how to present date of birth, along with ID numbers, on identity cards in a manner that is secure and safe.

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Song's survey also confirms the importance of certain biometric data, such as fingerprints, in the public's perception. Of the identification systems worldwide, about 20 percent include compulsory fingerprint information, along with other biometric details such as height, hair color, eye color, race or ethnicity, and other details (Hwang, 2004). The RRC Application Form used in Korea collects a range of biometric information beyond fingerprints. However, in-depth research is needed on measures to ensure the secure handling of these biometric data.

The dates and authorities of identity card issuance are found in the majority of national status identification systems worldwide, although they are relatively less important in the public perception (Song, 2007). Numerous countries issue cards with card-specific serial numbers instead of personal identification numbers. However, given the multiple functions of RRNs in Korea, it would be better to find ways of indicating both RRNs and card-specific serial numbers on RRCs.

As for certification, identity cards in numerous countries carry cardholders' signatures, electronic signatures and certification codes to provide additional means of identification. RRCs in Korea, however, do not provide this kind of additional information and have been criticized for not doing so (Song, 2007). Incorporating electronic signatures and/or certification codes into RRCs can significantly increase their role and function in today's informatized society.

The RRA requires the presence of six types of information on RRCs in Korea. This is far less than was the case when the first RRCs were introduced in 1968, reflecting the growing public sensitivity to privacy (see <Table 5-2>). The number and types of information indicated on RRCs have frequently changed over the last five decades. The original RRCs of 1968 even included such details as military records and occupational status. The second and third amendments of the RRA, however, removed much of the unnecessary information from RRCs. Korean RRCs today feature a cardholder's name, RRN, address (and changes thereof), fingerprints, photograph, and location of issuance.

**Table 5-2 | Featured on Korean RRCs**

RRC	Original	Renewal 1	Renewal 2	Renewal 3
Year	1968	1975	1983	1999
Front	Name (last and first) Photograph RRN (12-digit) Date of Birth Place of Family Register Address Military Record Military Specialty Number Date of Issuance Authority of Issuance Warning Against Failure to Carry Lost-and-found Guide	Name (last and first) Photograph RRN (13-digit) Date of Birth Place of Family Register Address Military Record Military Specialty Number Date of Issuance Authority of Issuance Warning Against Failure to Carry Lost-and-found Guide	Name (last and first) Photograph RRN (13-digit) Place of Family Register Address Military Record Date of Issuance Authority of Issuance Name of Household Head	Name (last and first, in Korean and Chinese) Photograph RRN (13-digit) Place of Family Register Date of Issuance Authority of Issuance
Back	Changes of Address Occupation Fingerprints (both thumbs)	Changes of Address Occupation Fingerprints (both thumbs)	Changes of Details Military Specialty Number Fingerprints (one thumb) Lost-and-found Guide	Changes of Address Fingerprints (one thumb) Lost-and-found Guide

Source: Song (2010).

Second, more effective technical measures are needed to prevent forgery and falsification. Both developed and developing countries are striving to find new technological solutions for making their identification systems safer and securer. It has been common for governments to switch from paper IDs to plastic cards, and again from plastic cards to smart cards, mainly for the purpose of preventing forgery and falsification. There is a growing consensus in Korea that an IC-chip smart RRCs should be the next version of the RRS (Song, 2010). Smart cards emerged as the most popular option in a poll, and the trend worldwide supports this popularity (Hwang, 2004).

The numerous plans of the Korean government to introduce smart or electronic RRCs, however, have all been thwarted. According to MOI (2011), the Korean government sought to

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introduce electronic RRCs containing IC chips in the late 1990s. These cards were to include 47 items of information across seven categories and to serve as all-in-one RRCs, valid as certified resident registrations, driver's licenses, health insurance cards, National Pension cards, and personal seals. The goal was to apply these new cards to all areas of government services and reports. Activist groups and popular opinion at the time, however, were against the plan, concerned that the cards would lead to the government's monopoly of information and consolidate its control over the population. The plan was put on indefinite hold in 1999.

Another attempt was made in 2006 to introduce an upgraded electronic RRC based on future-oriented resident registration research. The new model, also featuring IC chips, was to include resident registration information along with key values that linked to other types of information, such as driver's licenses and other qualifications. Yet activist groups and policy experts opposed the plan, concerned that the new model was not free of risks of privacy violations, such as unauthorized leaks forgery, and falsification of personal data (MOI, 2011).

The government yet again proposed a new electronic RRC that would carry less information than the model proposed in 2006. The new model was to feature only the information necessary for identification purposes, such as the details featured on current RRCs, and new technical solutions for privacy protection and the prevention of forgery and falsification. Activist groups and policy experts, however, were once again opposed to the plan due to a lingering fear of possible privacy violations. The series of identity theft and privacy violation crises that have ensued since then have made it all but impossible to introduce new electronic RRCs.

The government needs to earn and maintain the public's trust first and foremost before introducing any new technical solutions. The dearth of mutual rapport between the civil society represented by activist groups and the government has been the main obstacle to upgrading RRCs in Korea. Massive scandals involving leakages of millions of Koreans' personal details on various websites and at financial institutions have far from helped the situation.

## **2. Institutional Aspects: Scope of Information being Collected & Used**

One important way to enhance the public's confidence and trust in the RRS is to clarify and define the scope of personal data collected and used. Now that RRNs are almost universally required not only in public services and activities, but also in commercial services and private businesses, it is important to limit the use of RRNs within legal boundaries. RRNs

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are especially prone to unauthorized leakages via online financial and other transactions operated by the private sector, so it is crucial to regulate the collection and distribution of RRNs in private services. The use of RRNs, however, is central to the efficiency and convenience of government services. It is therefore also important to construct a new personal identification system that is safe in that context.

The Korean RRS has a long way to go in this regard. RRNs, as unique numbers, are a very useful system of individual identification, providing important information about individuals and their identities. However, RRNs are also extremely easy to decode, with the general public able to infer a number-bearer's date of birth, place of origin and biological sex just by glancing at their RRNs. This leaves the RRS open to various forms of privacy and human rights violations. RRNs remain primal keys of almost all databases on personal information in Korea as well. The amount of personal information that can be accessed and exchanged using RRNs is incomparably and unprecedentedly immense (Lee, 2003), which is not surprising with Koreans today using RRNs when submitting required reports to public authorities, applying for jobs at private companies, opening new bank accounts, or becoming new members of websites.

A survey by the National Human Rights Commission of Korea (NHRCK) shows that, of the surveyed 62 websites based in Korea, 92.5 percent collected RRNs as part of their membership subscription process (Kim et al., 2003). Another survey showed that, as of 2005, 7,648 or 47.1 percent of all legally required documents required the display of RRNs, and almost 80 percent of all personal information files kept by state and public agencies also showed RRNs (DELSA, 2012). The survey revealed that on the 3,303 civil complaint forms, 2,706 or 82 percent required the display of RRNs. In the private sector, 2,266 or 79.3 percent of electronic and internet operations collected RRNs and other related personal data. Of the 22,872 documents used in the private sector, almost half required RRNs.

A wide and varying range of public and private entities collect RRNs and use them for centralized and systematic management of personal data. With RRNs alone, one can trace almost all other personal details and important pieces of information on number-bearers, having the ability to ascertain their thoughts, behavior, lifestyles, transactions and economic activities, military service, and attitudes toward or actions aimed at the government (as indicated in civil complaints filed).

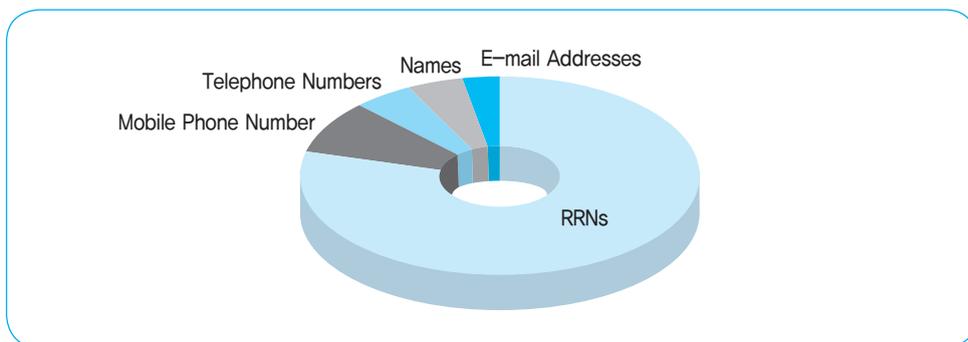
The risk of RRNs betraying confidential and important personal information to unauthorized third parties is all the more serious because RRNs, once issued for individuals, can never change. You may fall victim to a crime involving identity theft and all the severe

losses associated with the forgery and falsification of your identity, yet there is no recourse to changing or deleting your RRN.

The NHRCK conducted a survey on 1,042 internet users in 2003 regarding the collection and sharing of personal details among financial and internet-based companies. An astounding 26.6 percent of the polltakers answered that they were rejected from joining these companies' websites as members due to the unauthorized leakage and falsification of their RRNs (NHRCK, 2005).

In another survey by KISA, 61.7 percent of identity theft incidents involved RRNs of offenders' acquaintances and friends; 26.7 percent involved RRNs generated by special RRN-generating programs; another 26.7 percent involved RRNs of strangers; and 20.0 percent involved RRNs of family members (with overlapping choices allowed). Identity thieves answered that they stole and forged RRNs because they feared that their own RRNs would get leaked (38.3 percent) or because they did not want to leave traces of themselves on the internet (36.7 percent) (Lee, 2004). When asked to name the personal information they most disliked providing upon becoming members of websites, 75.0 percent of polltakers said RRNs; 8.2 percent said mobile phone numbers; 4.5 percent said land-line telephone numbers; and 2.8 percent said e-mail addresses (see [Figure 5-1]) (DELSA, 2012).

**Figure 5-1** | Items of Personal Information Internet Users Most Dislike to Provide



Source: DELSA (2012).

Despite the critical and growing risks of identity theft, the Korean government failed to regulate the collection and use of RRNs on the Internet until 2014. Before then, Korean law required internet users to provide their RRNs, as a means of preventing cyber-crimes based on anonymity, and individuals could not turn down corporations' requests for RRNs and other important items of personal data. Korean law left it almost completely up to private and

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commercial entities to decide whether to collect and use clients' RRNs. Although there was the Use and Protection of Credit Information Act, the statute did not effectively protect RRNs and rather supported the continued collection and use of RRNs by private entities (Kim, 2011).

The amended Privacy Protection Act (PPA) of 2014, however, strictly prohibits internet portals and social media from collecting RRNs. The new law states that processors of personal data must not access and process an individual's RRNs. Only when required by the law, in the case of an emergency, or under MOI decrees can information gatherers access and process RRNs (Article 24.2).

Sweden operates a PIN system that is similar to the RRS in Korea in form and structure. The 10-digit PINs used in Sweden, however, are almost exclusively used in the delivery of social security benefits and services that promote the convenience and well-being of citizens, which is in keeping with the country's strong social democratic tradition. The Swedish PIN system thus significantly differs from its Korean counterpart in terms of purpose and usage (Kim, 2006).

In the United States, state and public agencies are strictly forbidden to disclose the SSNs of citizens and cannot collect SSNs except in very limited circumstances authorized by law. Also, these agencies cannot refuse to provide services and benefits for individuals who refuse to provide their SSNs. The nine-digit American SSNs and their related records are treated as confidential matters by public authorities and are not disclosed to unauthorized third parties (Seo, 1998). Most importantly, SSNs are issued only to those who apply, fundamentally differing from the universally and compulsorily assigned RRNs of Korea (Kim, 2011).

Only a small number of states worldwide reveal PINs on their resident registration records or cards. Serial numbers or registration numbers are usually specific to identity cards only. Korea's RRNs are important according to public perception, so the more important debate for Korean policymakers today is not about whether to include RRNs in important records and documents, but about how to reduce the amount of personal information that can be accessed and abused via RRNs (Song, 2007).

Although the amended PPA restricts the handling and processing of RRNs to authorized personnel, many still complain that RRCs are required in more services than necessary. For instance, Koreans who wish to obtain government or public documents or records or who otherwise need to verify their identities are required to produce their RRCs before the authorities or organizations (Article 25, RRA). The Korean police can always require individuals to produce their RRCs at random, if needing to ascertain the individual's identity or residential relations. As for individuals who refuse or fail to produce their RRCs and who

are suspected for their possible involvement in crimes, the police can require them to appear at nearby police stations and reveal their identities and residential relations (Article 27.1, RRA). Some criticize that the RRA assigns excessive and overly comprehensive powers to public authorities (DELSA, 2012).

Polltakers in recent surveys also think that the range of services in which RRCs are used and required is excessive. But RRCs are so required because they are the predominate form of national and officially accepted identification in Korea (Song, 2007).

### 3. Organizational Aspects: Convenient Government Services

Government agencies can enhance the timeliness and effectiveness of government services through an integrated public information system based on RRNs. To this end, policymakers need to make organizations share public information on the basis of the RRS and reform related business processes. One of the success points of the Korean RRS is increasing the convenience of government services through more efficient public information sharing.

As explained in Chapter II, Korea already has an integrated government information sharing system for almost all administrative services based on RRNs. Examples include the interface for the MOI’s Resident Information Network and the MMA’s information network (see <Table 5-2>). This interface allows the MMA to receive updates on the available military manpower on a daily basis, enabling local offices of the MMA to streamline and handle all tasks related to military records and affairs. The system has improved the quality of administrative services and reduced the number of staffers in the MMA organization by 5,000 (Kim et al., 2007).

**Table 5-3 | MGAHA-MMA Interface**

Data Exchanged	Description
Data Received	All data, from the time they are received by MGAHA until the time they are transferred to military records archives of local MMA offices, are processed automatically. These data are sorted at local MMA offices into catalogues on available military resources
Data Transmitted	Changes on military records can be extracted using logging information Extraction and transmission of changes are processed automatically
Online Views	Online access to Resident Information Network and MMA’s information network
Address Codes	Match address system

Source: Kim et al., 2007.

The MMA’s information network is also interfaced with the Ministry of Foreign Affairs (MOFA) e-Consul system so that Koreans traveling or living abroad can file requests with Korean consulates for trip extensions or special permits to postpone military enlistment. Such requests are then directed to the MMA’s network based on RRNs. This interface allows people to check the progresses and status of their requests themselves, and it also enables civil servants at MOFA and passport divisions of local governments to search the military records of Koreans before issuing passports (Kim et al., 1997).

The amount of public information shared using RRNs continues to multiply, particularly since the creation of PISC. RRN-based online data are handled and exchanged via one of the three means: (1) direct systemic exchange, (2) via PISC, and (3) using USB memory sticks and other such offline means.

Of these, the EDI interfaces have proven to be the best at protecting personal information and privacy, with resident registration data handled via coded software programs. PISC, however, also comes in handy when multiple departments are involved in the processing of a given task. Here the participating agencies and departments upload the lists of data they need in advance and PISC then directs requests to the RRS. PISC therefore helps to ensure some measure of protection for privacy, while also facilitating the efficiency of government services. Government agencies, however, may also opt to share resident registration data through offline measures, such as USB memory sticks. This method of information sharing carries great risks of information leakage, as the USB memory sticks can be leaked to unauthorized third parties or may fail to function properly.

The number of instances of inter-system information sharing via EDI has steadily risen over the last four years. The MOI provided over 40 million files of resident registration data to other ministries via EDI in 2011 alone; the number rose to 58 million by 2014 (see <Table 5-3>).

**Table 5-4 | Electronic Transfers of Resident Registration Data**

(Unit: number of files, %)

Year	Total	Via EDI	Via PISC	Offline Means (USB sticks)
2014	1,016,145,383	583,076,959	13,432,978	419,635,446
2013	979,760,868	549,517,356	16,468,374	413,775,138
2012	1,130,119,858	580,256,082	13,174,090	536,689,686
2011	1,104,145,997	404,416,227	11,041,266	688,688,504

Source: Internal documents at MGAHA (2015).

The number of resident registration files shared among central government agencies via EDI was 40 million in 2011, but multiplied to 50 million by 2014. In the meantime, the number of resident registration files submitted to public agencies dropped from 177 million in 2011 to 75 million in 2014 (see <Table 5-4>).

The main reason for this phenomenon can be found in the increased sharing of administrative information among government agencies via EDI. The decrease in the number of resident registration files submitted to public agencies can be interpreted in two ways: either that the sharing of public information among government agencies increased, or that the number of instances in which public agencies demands such files decreased. Either way, it shows that the administrative processes improved and became more streamlined.

**Table 5-5 | EDI of Resident Registration Data by Institution Type**

(Unit: number of files, %)

Institution type	2011	2012	2013	2014
Total	404,416,227	580,256,082	549,517,356	583,076,959
State Agencies (23, including NTS)	226,615,628	518,043,350	486,468,419	507,933,375
Public Agencies (7, including NPS)	177,800,599	62,212,732	63,048,937	75,143,584

Source: Internal documents at MGAHA (2015).

The number of resident registration files submitted to both state agencies and public agencies is on the rise, according to the MOI's records. The number of such files the MOI provided to state agencies increased from 9.27 million in 2011 to 11.57 million in 2014, while the number of files provided to public agencies increased from 1 million in 2011 to 1.37 million in 2014 (see <Table 5-5>). This is because the growth of the public information sharing system and PISC has increased the interchange of resident registration files between the MOI and other governmental organizations. In contrast, the number of files provided to financial institutions has decreased, which reflects the simplification of administrative processes and the consequent improvement in the protection of personal information and privacy.

**Table 5-6 | Electronic Transfers of Resident Registration Data via PISC by Institution Type**

(Unit: number of files, %)

Institution type	2011	2012	2013	2014
Total	11,041,266	13,174,090	16,468,374	13,432,978
State Agencies	9,274,693	11,281,273	14,160,511	11,579,025
Public Agencies	1,039,497	1,221,958	1,567,704	1,377,914
Financial Institutions	727,076	670,859	740,159	476,039

Source: Internal documents at the MGAHA (2015).

Meanwhile, the number of files the MOI provided to state agencies using offline means (USB memory sticks) decreased from 47 million in 2011 to 38 million in 2014. The number of files provided to public agencies using USB sticks also plummeted, from 20 million in 2011 to 0.28 million in 2014, and the number of files provided to private-sector entities decreased from 16 million in 2011 to 5.3 million in 2014 (see <Table 5-6>). In other words, the public information sharing system drastically reduced the number of instances in which USB sticks were used to share resident registration data. All these are positive improvements from the perspectives of privacy and administrative efficiency.

**Table 5-7 | Electronic Transfers of Resident Registration Data Using Offline Means (USB Sticks) by Institution Type**

(Unit: number of files, %)

Institution type	2011	2012	2013	2014
Total	688,688,504	536,689,686	413,775,138	419,635,446
State Agencies (27, including NTS)	474,464,477	488,221,674	369,425,838	386,113,118
Public Agencies (18, including NPS)	198,285,649	39,342,125	39,045,676	28,150,789
Private-sector Entities (14, including NFFC)	15,938,378	9,125,887	5,303,624	5,371,539

Source: Internal documents at MGAHA (2015).



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## Chapter 6

### Policy Implications

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## Policy Implications

The RRS was introduced in Korea under a military government when the ideological and military tensions between the two Koreas were escalating. Because the system was conceived and designed when the public had little awareness of the importance of privacy and national security trumped all other policy objectives, it served administrative efficiency above all else. Over time, however, as public awareness of privacy grew, the demand for transparent and convenient government services also grew, prompting and shaping various reforms to the RRS.

Based on Korea's experience and the factors to consider in ensuring the success of the RRS, this study makes three policy implications. First, policymakers need to determine the optimal range of personal data to be collected and find appropriate policy measures to prevent forgery and falsification. Personal details include biometric information, addresses, occupations and many other details. So it is important to examine what kind of administrative services are to be provided, and after that determine what kind of personal details such services would require. The ideal solution would be to conduct this process on a case by case basis.

Technical and institutional measures are needed to prevent forgery and falsification of personal information. New technological solutions are constantly being researched and developed. However, it is critical for policymakers to build and garner wide societal consensus before adopting any new solution. It is no use proclaiming that the latest solutions are secure, if the public lacks the confidence and trust in the government to accept those solutions. The Korean government has repeatedly attempted to introduce more technologically advanced RRCs since the 1990s, but failed to do so because of strong objections from the public and civil groups.

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This is where institutional measures become necessary. Policymakers need to find legal and political ways to build the public's trust in the government and to ensure new solutions are implemented in ways that retain trust. The current Korean government has proposed a new smart RRC model, which would include an IC chip to facilitate public and commercial services. Civil and activist groups continue to oppose this plan, however, precisely because they lack trust in the government. The series of massive scandals involving the unauthorized leakages of personal information by financial institutions and other businesses over the last decade have left the public traumatized and deeply suspicious. Therefore, the government needs to address and solve public distrust before introducing new RRCs.

Second, RRNs used as personal identification numbers in Korea should be designed so that it is difficult for anyone to decode important personal details from the numbers alone. Easily decipherable government-issued RRNs are at the root of the scandals involving personal information leakages and seriously damaging people's lives.

The current RRN system, introduced in the 1970s, has been criticized constantly for the amount of personal information it betrays. The first six digits of a 13-digit RRN show the date of birth of the number-bearer, while the last seven digits indicate the number-bearer's gender. Although the Korean government has proposed replacing the RRNs with new PINs, it was much too ambitious, as all administrative systems and databases have been built around RRNs. It is nearly impossible even to begin to estimate the cost of switching to a new PIN system. Developing countries that contemplate adopting similar status identification systems need to find better PIN systems that both identify and protect the privacy of individuals.

Third, it is important to improve the practices and routines of administrative services for the public that are linked by PINs. Government-issued PINs form the primary keys of all administrative service databases, thereby facilitating the application of personal data to multiple services. Indeed, the e-government service structure in Korea allows Koreans to apply for driver's licenses, passports, changes of mailing addresses and a whole host of other public services on the internet, thus saving them enormous amounts of time and money. However, with the integration of smartphones into our daily lives, the government can still improve on the convenience of its services by developing mobile and smart solutions.

Developing countries can learn from Korea's example and significantly improve the efficiency and effectiveness of their government services by adopting PIN systems akin to Korea's RRS. This will dramatically improve the quality of government services experienced by ordinary citizens.

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The key to the successful introduction and consolidation of a status identification system is designing a system that strikes a balance between privacy and administrative efficiency. PIN systems promise such balanced solutions, but governments need to garner wide social consensus before introducing these systems.

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