Enhancing Transparency and Quality of Public Services: The Republic of Korea’s Open Data Policy

PROJECT DATA
IMPLEMENTING AGENCIES: Open Data Strategy Council, Ministry of the Interior and Safety
COUNTRY: Republic of Korea
DEVELOPMENT CHALLENGE: Improving Service Delivery
REGION: East Asia and Pacific
DELIVERY CHALLENGES: Lack of Legislation; Opposition or Lack of Consensus
IMPLEMENTATION YEARS: 2013–19
SECTOR: Governance and Public Administration
AUTHOR: M. Jae Moon

Executive Summary

In 2013, the Republic of Korea launched its open data policy as a framework to improve the transparency and quality of public services through the use of open data. The Open Data Strategy Council was responsible for coordinating and monitoring the open data performance of participating government agencies and public organizations. To implement the government’s open data agenda, the council had to overcome barriers to coordination and engagement, such as bureaucratic resistance and interagency disputes. At the time, many government officials had a limited understanding of the open data policy and were not willing to open their agencies’ data to citizens and businesses. To overcome this resistance, the government used annual performance evaluations to motivate government agencies and public institutions to meet open data targets and compete to earn high scores.

Over time, the government made great strides not only to promote transparency and accountability but also to stimulate and support development of open public data–based applications by working in collaboration with citizens and businesses. As the government continued its efforts to promote open data, the number of open data–based apps increased rapidly. Many apps provided important benefits to citizens. For example, two apps were widely used during the COVID-19 pandemic: one helped track the movements of individuals who had COVID-19, and one helped citizens find places to buy face masks.

Introduction

“Open data opens the door to make society transparent, safe, and prosperous,” said Sekyun Chung and Sungjoon Cho, cochairs of the Republic of Korea’s Open
Data Strategy Council, in their welcoming remarks on the council’s website. In 2013, the Korean government launched the council as part of a broader agenda to advance transparent and accountable government. Part of that agenda focused on open data, which referred to the data collected, held, and managed by local and central governments as well as by other public and semipublic institutions.

For its open data push, Korea followed a model initiated by the United States. In 2009, U.S. President Barack Obama issued the Open Government Directive, an initiative to increase the quantity and quality of government data published online. In 2013, the Obama Administration mandated the publication of machine-readable data across government organizations. Similar initiatives spread to many different countries and were often supported by international endeavors such as the Open Government Partnership.

Motivated by the U.S. directive and the international community’s interest in open data, Park Geun-hye, who took office as Korea’s president in 2013, proposed Korea’s open data policy (KODP) as part of her administration’s Government 3.0 Initiative, which was a comprehensive, citizen-centric framework for government reform.

Although Korea made great advances in governance and economic development throughout the 1990s and 2000s, transparency in its government was relatively still lacking. In its 2012–2013 Global Competitiveness Index, the World Economic Forum ranked Korea as 133rd out of 144 countries for transparency of government policy making. In contrast, the forum ranked Korea as 11th for market size, 10th for macroeconomic environment, and 16th for innovation (WEF 2012).

Korea took two related approaches to open government. First, it strengthened the Public Information Disclosure Act, which had been in effect since 1998, by requiring government agencies to preemptively disclose public information and by simplifying administrative procedures for citizens to make public information requests (Korean Government 2016; Moon 2020). (Previously, agencies had to disclose information only if they were requested to do so, and the procedure to make a request was cumbersome.)

Second, the government introduced the KODP to drive innovation in service delivery and administrative processes. The idea for the KODP had been around since 2010, when it had initially been proposed by the Ministry of the Interior and Safety. The idea gradually gained momentum and finally became a central agenda for government innovation in 2013. The policy was based on the Organisation for Economic Cooperation and Development’s Focus on Citizens: Public Engagement for Better Policy and Services (OECD 2009) and aimed to make the government more transparent, interactive, citizen-centric, and public service–oriented. The government also sought to promote entrepreneurship and economic growth by encouraging the development of applications that were based on open public data and by supporting related business opportunities.

Delivery Challenges

Lack of Legislation

Although since 2010 the government had been gradually introducing open government–related programs, weak institutional and legal mechanisms stifled progress. The Open Data Guidelines, published by the Ministry of the Interior and Safety in 2010, were not strong enough to force government agencies to open the data they owned because the ministry did not have specific legal and institutional mechanisms for enforcement.

In 2011, the interior ministry began to prepare legislation and administrative procedures to actively promote open government. Despite the need for a comprehensive legal framework for open data, passing such legislation was not an easy task. “Initially, there was very little support from the National Assembly for open data because [members of the assembly] did not realize its value,” said Kang Dongseok, who led the Supporting Group for Government 3.0 and the E-Government Unit of the National Informatization Society Agency. The latter was a public institution in charge of implementing various national informatization and computerization projects.

The 2013 administration change created a window of opportunity to get new legislation passed, but convincing
members of the National Assembly to support open government was still a major hurdle.

**Opposition or Lack of Consensus**

Government agencies had gradually become accustomed to providing public information to citizens after the Public Information Disclosure Act went into effect in 1998. The act mandated government agencies to disclose public information and data upon the requests of citizens—unless the requested data violated any privacy or security requirements.

The KODP set higher expectations than did the Public Information Disclosure Act because it required government agencies not only to meet citizens’ right-to-know, but also to help them to use the open data by providing machine-readable data rather than aggregate data in cumbersome PDF files. As the Korean government shifted from an old open government model to a new open government model, the KODP began to consider citizens both as recipients and as users of the open data.

However, getting agencies to embrace open data was a challenging task. Government agencies often considered the data they held as a source of authority and power, and they resisted sharing their data with other agencies or the public unless required to do so. This position was taken partially to protect their own interests and to avoid accountability.

The Presidential Office and the Ministry of the Interior and Safety had to find ways to encourage government agencies and other public institutions to share and open high-quality and usable data either by enforcing them through legal mandates or by persuading them through other means.

**Tracing the Implementation Process**

Despite the wide acceptance of the national vision for open government, it took the government a long time to establish a legal foundation for the KODP and to make both quantitative and qualitative progress in open data. To succeed in delivering its open data agenda, the government had to overcome significant bureaucratic resistance and to actively encourage citizens’ participation.

**Establishing a Legal Foundation for Open Data**

Despite the government’s strong interest and the citizens’ support for open government, the legislative progress was much slower than expected, primarily because of a limited understanding of the need for open government data and a lack of interest from the National Assembly. The National Assembly’s legislative support was crucial to fulfilling the KODP because the Ministry of the Interior and Safety could neither force government and public institutions to open their data nor establish institutional arrangements to drive the policy.

Officials from the interior ministry took a lead role in preparing for the KODP and persuading the National Assembly to support it. Ministry officials, supported by the staff from the Presidential Office, initially contacted the ruling party assembly members and requested their support for the policy. “It took a lot of time and effort to persuade National Assembly members to understand the utility of open data not only for government accountability but also for economic potential,” said Kang. “The potential value of open data and applications was not appreciated by many legislators.”

Conversations with the legislators and their staff members—discussions that centered on the potential political and economic benefits of open data—were instrumental to acquiring the legislators’ support. Lobbying efforts eventually led to the National Assembly passing the Open Government Data Act in 2013.

This legal foundation mandated public organizations to appoint chief information officers and staff members to provide and manage public data as well as to register the data in an open public data portal (www.data.go.kr). The act stipulated institutional mechanisms for how government data are managed, registered, and provided on the open public data portal. The act also covered how to assess the quality of open data and how to mediate open data–related conflicts among stakeholders.

**Creating the Open Data Strategy Council and Devising an Action Plan**

Drawing on the act, the Korean government established the Open Data Strategy Council (see figure 1, which shows how the Open Data Strategy Council operated with other

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5 Author interviewed with Kang Dongseok via email, October 31, 2019.
institutions such as the Ministry of the Interior and Safety, the Open Data Center, and the Open Data Mediation Committee. The council’s role was to deliberate, coordinate, monitor, and evaluate the government’s major open data policies and their implementation. The council was also responsible for developing strategies and action plans as well as promoting digital and reusable public open data.

The council, which was cochaired by the prime minister (the second highest government official nominated by the president and confirmed by the National Assembly) and a civilian representative (often a leading expert) appointed by the president, was composed of (a) eight ministers of various ministries,\(^6\) (b) eight appointed members from local governments and public institutions, and (c) 17 members from the private sector and academic communities.\(^7\)

To support the council, the Open Data Strategy Working Committee and the Open Data Strategy Specialist Committee were formed. The working committee was cochaired by a civilian expert and the vice minister of the Ministry of the Interior and Safety, whereas the special committee was composed of various practical experts representing various fields.

The Ministry of the Interior and Safety was in charge of implementing the national open data policy, which in turn was based on the vision and strategies developed by the council. For the practical implementation of the KODP, the Open Data Center was also established under the National Informatization Society Agency for technical support (National Informatization Society Agency 2010). The center’s main responsibilities were to research laws and policies about open data, to analyze open data performance, to support open data management for government agencies, to promote international collaboration and public relations, to maintain and upgrade the open data portal, to offer training programs, to evaluate the quality of open data, and to promote the use of open data.

Under the Open Data Strategy Council, both the Open Data Mediation Committee and the Open Data Forum were also formed. The Open Data Mediation Committee was cochaired by a civilian expert and the vice minister of the Ministry of the Interior and Safety, whereas the special committee was composed of various practical experts representing various fields.
Committee was established to resolve any possible open data–related disputes, whereas the Open Data Forum was formed to build public-private networks and to facilitate the use of open public data by app developers and businesses (Moon 2020).

The council’s first major task was to review and approve the Five-Year Basic Plan for Open Data. The plan was designed to boost quantitative growth of open public data as well as to enhance citizens’ understanding of data openness and to encourage citizens to use government data. The Ministry of the Interior and Safety, the Open Data Center, and the Open Data Strategy Specialist Committee played critical administrative and professional roles in conducting analyses and in developing alternative strategic plans before the Open Data Strategy Working Committee and, eventually, the Open Data Strategy Council reviewed and approved the final plan.

The First Five-Year Basic Plan for Open Data envisioned the future of open data and its policy implications as well as the potential administrative, economic, and social benefits that the KODP would bring to the country. It also required the government to meet bold open data goals and to set specific action plans.

In particular, the act made the government prepare performance targets for the KODP and develop detailed action plans through which various government agencies and public institutions were expected to open the data they owned. After investigating and reviewing the inventory of data held by the central government agencies, local governments, education district offices, and public institutions, the council set specific open data targets for those entities.

During the first year after the Open Government Data Act was enacted, the amount of open public data (including open data files and application programming interfaces [APIs]) increased from 5,272 in 2013 to 13,120 in 2014, thereby beating the targets proposed in the Five-Year Basic Plan for Open Data by 5,467 (see figure 2).

**Strengthening Institutional Mechanisms and Actions to Scale-Up Open Data**

After the government enacted a comprehensive and rigorous legal foundation, it built institutional mechanisms and administrative procedures to identify data inventories of government organizations. It also encouraged and often put pressure on agencies and public institutions to open data by setting open data targets and by monitoring annual performance.

In scaling up the KODP, the government specified target areas where policy attention was needed and allocated financial resources to drive open data in the selected target areas. The Ministry of the Interior and Safety and the Open Data Center worked together under the guidance of the Open Data Strategy Council to encourage and persuade government agencies and public institutions to open quality data to citizens and businesses. They also encouraged and incentivized businesses and groups of technology-savvy citizens to take advantage of open data for app developments and other business opportunities through the Open Data Forum.

Drawing on the Open Data Strategy Council’s assessments of the demands of citizens and businesses for various data held by government agencies and public institutions, the government designated 11 target areas in 2015 (for example, one of the target areas was building permissions and approvals issued by local governments). In 2016, the council increased the number of target areas to 33. The new target areas included data about national disaster management, about national geographical information, and about real estate transactions. Realtors, businesses, and residents were interested in

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8 APIs refer to a software technology that enables users and systems to interact with various applications and to obtain data from one another.

9 The numbers of target areas increased to 48 and 77 in 2017 and 2018, respectively. See Open Data Strategy Council 2020.
By focusing on data for which there was high demand, the council was able to mobilize support from citizens and businesses, who then put pressure on resistant government agencies and public institutions to comply. The designation of the target policy areas drew attention from citizens and businesses because the open data was used much more than other public data. Open data use (that is, downloads) increased by 120 times, from 13,923 in 2013 to 1,663,390 by the end of 2016 (see figure 3), whereas the amount of public open data was 5,272 in 2013 and increased by about 4 times to 21,359 in 2016.

The shift toward targeting the most valuable data for citizens and businesses helped build momentum for the KODP. “In the early stage, the open data initiative was less effective and less successful than expected because the quality of open data was not good [and] citizens and businesses [did not pay] much attention to the data opened and shared,” said Park Donghoon, who was a secretary to President Park Geun-hye and who worked on the Government 3.0 Initiative in the Presidential Office. “Much of the data was neither ready for utilization nor [ready] for value creation. The designation of target policy areas for open data was effective, which helped to drive both quantitative and qualitative growth of open data.”

Kang Dongseok, the former head of the E-Government Team at the National Informatization Society Agency, said the designation of target policy areas was an effective tool to upgrade the quality of open data and to increase its utility to citizens and businesses: “There was a practical debate on the utility of open data in that there was no useful open data available...the government decided to designate policy areas of public interest as a way to promote [more useful] open data.”

To pressure government agencies and public institutions to embrace open data, the government added open data performance scores to annual performance evaluations (Open Data Strategy Council 2013). This change drove government agencies, local governments, and public institutions to open their data because the evaluations affected their institutional reputation as well as their annual performance incentives. The evaluations “put direct and indirect pressure on the organizations to open data,” according to Park Donghoon, the president’s secretary. “Public organizations competed in open data performance.”

In addition to increasing the quantity of open data, the government improved the quality of the data by increasing the proportion of data published in open format from 38.9 percent in 2015 to 70 percent in 2017 (Korean Government 2016). To achieve this goal, the government encouraged government agencies and public institutions by evaluating their performance in terms of registered open data in machine-readable format rather than in PDF files. The government also provided automatic data conversion tools in its official open data portal to help public organizations disclose their data in open format (Korean Government 2016; Moon 2020).

**Encouraging Citizens’ Participation for Developing Open Data–Based Apps**

Despite the government’s efforts to open public data that was relevant to businesses and to tap into the potential market value for app development by designating target

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10 Author interviewed with Park Donghoon via phone November 11, 2019.
11 Author interviewed with Kang Dongseok via email, October 31, 2019.
12 Annual performance evaluations for central government agencies, local governments, and public institutions (that is, public corporations) are conducted by the Prime Minister’s Office, the Ministry of the Interior and Safety, and the Ministry of Economy and Finance, respectively.
13 Author interviewed with Park Donghoon via phone, November 11, 2019.
policy areas, it still found difficulty in engaging and encouraging citizens and businesses to use open data for app development. Many citizens doubted the quality and utility of open data. "The government lacked good quality data, which hampered wide utilization of the data," said Kang. "It was partially because the Korean informatization was conducted with an emphasis on computerization, not on the management of data quality."

The interior ministry worked with government agencies that had financial tools to support businesses to provide small grants and subsidies to individuals and businesses who were interested in developing apps. Agencies the interior ministry worked with to provide those incentives included the Ministry of SMEs and Startups, the Financial Services Commission, the Ministry of Science and ICT, the Ministry of Trade, Industry, and Energy, and the Korean Intellectual Property Office.

The interior ministry and the Open Data Strategy Council stimulated development of open data-based apps through various competition mechanisms. "The Ministry of the Interior and Safety attempted to collaborate with these agencies and jointly developed promotion programs to facilitate development of applications based on available open data," said Kang. "These were done often through Hackathon Competition, Start-ups Competition, Data Start-ups Promotion Programs, etc. The Open Data Strategy Council along with the Open Data Forum played a critical role in promoting open data and enhancing its utilization for economic potentials."

**Outcomes**

The volume of available open data increased in tandem with the number of target policy areas, with data increasing from 5,272 in 2013 to 32,743 in 2019 and with target policy areas increasing from 11 in 2015 to 96 in 2019 (see figure 4).

The Moon Jae-in administration, which took office in 2017, largely continued the KODP, and Korea continued to make fast progress in open data in comparison to other countries. Korea placed first in the Organisation for Economic Cooperation and Development’s OUR Data Index (Open, Useful, and Re-Usable Government Data) ranking in 2017, 2018, and 2019, and it also improved its Open Data Barometer ranking from 17th in 2015 to 4th in 2018 (World Wide Web Foundation 2016; 2017; 2018).

As of May 9, 2020, the Korean government had made 34,376 open data files, 5,631 open APIs, and 120 standard

14 Author interviewed with Kang Dongseok via email, October 31, 2019.
data files\textsuperscript{15} available to the public through its official portal (www.data.go.kr). The available open data reflected the data of greatest interest to citizens and businesses. The most common functional area of the open data files available was culture and tourism, followed by land management and general administration, and then industry and labor (see Appendix for breakdown of open data).

The number of public open data–based apps increased from 147 in 2013 to 1,056 in 2016, and then grew to 1,318 as of August 2017 (Moon 2020). Several of those were public service apps developed by citizen groups. For example, CodeNamu (codenamu.org), an open data–focused civic group, developed several apps including Anshimi (translated as “safety”) through which citizens could check the quality of medical services at nearby clinics and hospitals, particularly in terms of over-prescription of antibiotics (Moon 2020).

Citizens and entrepreneurs developed apps in various functional areas. More than 300 apps were developed in the area of culture and tourism, which was the functional area with the largest volume of open data, and APIs (Moon 2020). The second most-common area for app development was transportation and distribution, whereas the third was environment and weather, followed by public health and medicine (see Appendix).

In 2020 when the government confronted the global COVID-19 pandemic, developers created several apps to track infections. The first app for tracking patients who had COVID-19 (coronamap.site) was developed by a group of college students at the end of January 2020. They used information provided by the Korea Centers for Disease Control and Prevention about COVID-19 patients’ paths (DongA Newspaper, February 2, 2020). Another app helped citizens locate drugstores that had face masks in stock. This citizen-developed app helped mitigate uncertainty and fear among citizens who were concerned about a shortage of face masks. Those apps are good examples of the coproduction of the public services that resulted from collaboration among governments (as open data providers), as well as between citizens and businesses (app developers).

Despite the quantitative progress in open data, the qualitative advancement in terms of its economic effects remained an ongoing challenge. As of 2020, the Korean government continued to drive public organizations to open their data and encouraged citizens and businesses to use open data. Considerable bureaucratic resistance remained, however, and open data training programs for public officials and other initiatives were necessary to ensure the continued progress of the open data agenda.

Lessons Learned

A Strong Legal Foundation Was Crucial to Get the Initiative Moving

Bureaucratic resistance to opening data meant the KODP was doomed to fail unless it was backed by legislation that covered institutional mechanisms for promoting and supporting open data, as well as resolving potential conflicts among participating organizations. It takes time and political capital to persuade legislators to establish a legal basis for a new government innovation initiative, and it was not easy to acquire legislative support for the KODP. Officials from the Ministry of the Interior and Safety contacted key lawmakers and persuaded them to understand the significance of legal support for the KODP, and those sustained efforts helped the government to enact a comprehensive legal basis in collaboration with the legislative body. After the Open Government Data Act passed, government agencies, local governments, and public institutions were mandated to open their data.

A New Administration Created a Window of Opportunity for Reform

The government officially announced the KODP as a central part of the Government 3.0 Initiative at the beginning of the Park Geun-hye administration. In the early political cycle of a new administration, it was easier for the Korean government to mobilize not only external political support from the legislative body but also internal political support from government agencies and public institutions. The legislation passed in 2013 after the new administration announced the KODP as a key policy agenda, even though the concept of open public data had been introduced and discussed since 2010.

\textsuperscript{15} The term standardized data refers to the open public data that are selected and standardized by the Korean government in terms of data format and classification codes. The standardized data are often the data shared by multiple organizations so that the open data cannot be merged together unless they are standardized. The Korean government has been selecting the data (that is, public toilets, parking facilities, earthquake shelters) that have high potential effects and are shared by multiple organizations.
Publishing Open Data Performance Pressureed Agencies to Embrace Open Data

Though the Open Government Data Act was effective in making initial progress with the KODP, the government continued to experience bureaucratic resistance because of various agencies’ unwillingness to share data and their lack of understanding of the policy. Incorporating annual open data performance of government agencies, local governments, and public institutions into the annual evaluations conducted by the Prime Minister’s Office, the Ministry of the Interior and Safety, and the Ministry of Finance motivated government agencies to begin opening their data.

Targeting Useful Data Increased the Quantity and Quality of Open Data

The government identified target policy areas for open data based on a comprehensive assessment of demands and high market opportunities of various open data. This strategic step helped the government to enhance not only the quantitative volume but also the quality and utility of open data.

Holding Competitions Stimulated Citizen Engagement

After initially receiving complaints that open data had little utility for citizens, the government held app development contests such as hackathons and start-up competitions. Showcases of open data–based apps on open data platforms (such as the government’s open data website, www.data.go.kr) were vital in disseminating app development activities and in stimulating participation of citizens and businesses in app development.
References


16 Parts of this case study are based on the author’s previous work on public sector innovation, including the following: (a) Moon (2017) and (b) Moon (2020).
## Appendix: Number of Open Data Files, Open APIs, and Standard Data (as of May 9, 2020)

<table>
<thead>
<tr>
<th>Functional Area</th>
<th>Open Data Files</th>
<th>Open APIs</th>
<th>Standard Data</th>
</tr>
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<tbody>
<tr>
<td>Culture and Tourism</td>
<td>6,817</td>
<td>831</td>
<td>20</td>
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<tr>
<td>Land Management General Administration</td>
<td>5,189</td>
<td>551</td>
<td>9</td>
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<tr>
<td>Industry and Labor</td>
<td>3,463</td>
<td>454</td>
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<tr>
<td>Transportation and Distribution</td>
<td>2,638</td>
<td>666</td>
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<td>Social Welfare</td>
<td>2,298</td>
<td>393</td>
<td>8</td>
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<td>National Land Management</td>
<td>1,837</td>
<td>446</td>
<td>10</td>
</tr>
<tr>
<td>Agriculture, Livestock, Fishery</td>
<td>1,770</td>
<td>494</td>
<td>4</td>
</tr>
<tr>
<td>Environment and Weather</td>
<td>1,884</td>
<td>320</td>
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<tr>
<td>Education</td>
<td>1,721</td>
<td>297</td>
<td>9</td>
</tr>
<tr>
<td>Public Health</td>
<td>1,733</td>
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<tr>
<td>Disaster and Safety</td>
<td>1,597</td>
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<td>Science and Technology</td>
<td>1,235</td>
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<td>Food and Health</td>
<td>863</td>
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<tr>
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<td>847</td>
<td>183</td>
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<tr>
<td>Law</td>
<td>128</td>
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<tr>
<td>Total</td>
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<td>5,631</td>
<td>120</td>
</tr>
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</table>

*Source: Data compiled on the basis of information found in the official open data portal of the Korean Government (www.data.go.kr).*

*Note: APIs = application programming interfaces.*