

디지털플랫폼 정부 구현을 위한 국가데이터관리체계 구현 방안

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Building the Data Governance System for Digital Platform Government

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Abstract

A digital platform government without boundaries between the public and private sectors and between government ministries is impossible without national data management. Logical verification was carried out in this study following the definition of the national data management system's purpose, elements, and mode of implementation. Specifically, it was broken down into three dimensions in an effort to review different aspects: the management subject, the management method, and the designation target of national data. Finally, a description of the national master data management system and organization was given. The direction for the implementation of the digital platform government will be presented by this study.

1. INTRODUCTION

New technologies that are reshaping the economy and society at large include cloud computing, data, and artificial intelligence. We are approaching the era of digital deepening, which will cause a destructive alteration to the national social system's structure beyond its digitization. Full-scale innovation at the national level is required to guarantee an uninterrupted flow of data, which is essential for leading the global artificial intelligence competition, where data is the key.

On the other hand, the quantity of data that the state must manage is growing, and the public and private sectors handle it differently for each institution. As a result, there are many instances of poor use, rising costs, and deteriorating quality because of data duplication, inconsistency, and inconsistency. At the national level, a National data Management System (Picture 1) is required to address this issue. The idea behind the national data management system is to manage

inconsistent data that is separately managed by both public and private organizations from a single viewpoint on the main organization. The foundation for the national data management system's ability to perform as a data infrastructure for the realization of a digital platform government will be its implementation.

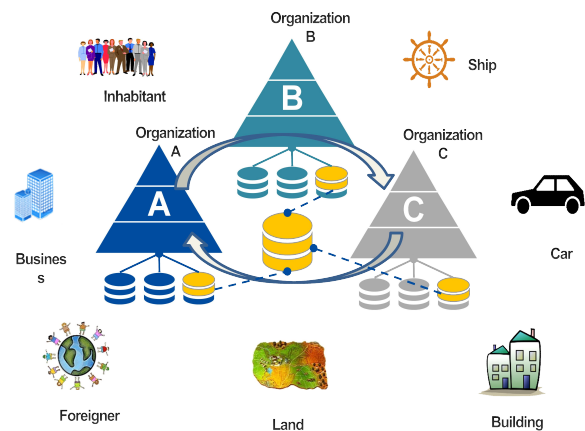


Figure 1. Components of National Data Governance

2. Digital Platform Government and National Data Management System

2.1. Digital Platform Government

According to the Digital Platform Government Committee (2022), the digital platform government is ‘a government in which people, businesses, and governments work together to solve social problems and create new values on a digital platform where all data is connected’. Despite being the first country in the world to adopt e-Government, Korea’s system was limited to suppliers under government supervision. Even though we already regularly use cutting-edge services from a variety of private platforms, like Naver, Coupang, and Kakao, there is currently no integrated public and private service, nor this degree of government service.

In response to the era of digital transformation, digital platform government can be viewed as a new paradigm for government operations. The government extends and applies the successful innovation platform model from the private sector to the public sector. Put another way, it’s a novel idea for an ecosystem in which the people easily access a range of government services via the digital platform that the government creates to deliver first-rate public and private services.

To implement digital platform government, the Presidential Digital Platform Government Committee was established. Four major initiatives are being promoted by the Digital Platform Committee: ① Implementing an innovative infrastructure for digital platforms; ② Promoting full opening and utilization of data; ③ Bringing innovation to government operations; and ④ Ensuring a safe and reliable environment of use. Additionally, the committee is promoting various activities aimed at enhancing the quality of life of the populace in line with the national philosophy.

2.2. National Data Management System

The national data management system consists of defining integrated master data used in various business processes and defining management systems for them. It also includes relationship information, attribute information, classification and layer information, and identification information about key entities of private and public affairs. At the corporate and overall organizational levels, integrated master data management ought to be handled holistically, and the digital platform government ought to establish guidelines, procedures, instruments, and fixes for

reliably and consistently producing and maintaining such data.

Data that are frequently utilized by different organizations and systems must be integrated at the national level for integrated management to function. Beyond individual ministries or locomotive sources, national data instances must be managed in order to provide the foundation for convergence or comprehensive personalization services and intelligent analysis services. The target of linkage is broadened beyond administrative and public institutions to include reputable financial institutions, telecommunications, educational institutions, e-commerce, and private platforms. For network effect, the subject of data use is defined as the entire country.

3. Establishment of National Data Management System and Verification

3.1. Directions for Establishment of National Data Management System

Establishing a data management system is necessary to realize data-oriented e-government, and it should incorporate the four improvement directions listed below. E-Government EA-based, data opening, distribution and linkage, and master data integration can be used to sum up the direction of improvement. Data architecture is the foundation of e-Government EA; data opening entails making public data accessible to the public; data distribution and linkage entails sharing public data amongst public entities; and master data integration entails centralizing the management of significant national data. E-Government data presented through the Government Enterprise Architecture Portal (GEAP) is included in the data architecture, along with data architecture, data reference models, data classification systems, and data architecture. Data distribution and linkage apply to joint usage information provided by information distribution services, administrative information inquiries at the Public Information Sharing Center (PISC), and electronic civil petition document management. Through this, the public will be able to access national key open data via the public data portal (www.data.go.kr), including quality control level, open standard, open format, and open API.

3.2. Targets for the Establishment of National Data Management System

The goal of establishing a national data management system should be to progressively

disseminate data that has significant effects on the economy and society. In order to increase the application target, issues from the pilot application process should be fixed, a thorough management system should be put in place, and government-wide consultations and decision-making processes involving both the public and private sectors are necessary. Enough technical considerations must be made because the expansion of the level of management must account for the complexity of interconnection and the rapid increase in related data capacity.

3.3. Logical Verification of National Data Management System

A maturity model is proposed as follows for the logical verification of the national data management system. There are five stages in total for the level of national data management; the current level is at stage two and needs to be developed into stages three or four in the future. (1) For every system, the management stage is the initial stage. This is the stage where data is managed for each conceptual system. It is also the stage where data quality is managed, with an emphasis on accuracy and uniqueness when approaching data architecture standardization. There is no degree of data sharing and cross-government data management activities include architecture or administrative standard code work. The distribution and linkage stage is the second phase. This phase involves the distribution of constrained data and the management of data quality by emphasizing accessibility from the interface's point of view and consistency with current information. Data distribution and openness are two aspects of cross-government data management activities. The degree of data sharing includes identification, basic information, and status information. (3) The integration phase is step three. This step involves trying to share and integrate using a data hub, with an emphasis on integrity and shareability. It manages data quality from the standpoint of a straightforward, single version of the truth. The level of data sharing includes shared information and classification information in addition to ID, basic information, and status information. The master data hub is a part of e-Government data management initiatives. (4) The stage of collaboration is step four. This step aims to manage the quality of data by focusing on usefulness from a harmonious approach perspective and attempting collaboration between

the data hub and individual systems. Rules, policies, and data analysis are all part of e-Government data management activities. ID, basic information, status information, shared information, classification information, relational information, and analysis information are all part of the data sharing level. (5) The optimization step is step five. This step involves performing optimization at the system level on a regular basis. From the perspective of the optimization approach, data quality is controlled by emphasizing value creation. The degree of virtual integration of all business operator data is known as the data sharing level.

For instance, business data is entered and maintained for every system in the first phase. The distribution and linking of key data pertaining to the business name, number, address, and closure status occurs in the second stage. In the third phase, the master data hub is used to exchange classification and sharing data, including business name, address, SME status, closure status, and business number. During the fourth phase, business information, building information, and resident information are among the standard information and relationship information that are jointly managed and utilized by the master data hub and individual systems. Ultimately, the virtually integrated business data is used to create new value in the fifth stage. As of right now, Korea's national data level is at the second stage of distribution/connection, and efforts are underway to raise the management level in order to reach the fourth stage of collaboration.

3.4. Legal Basis for National Data Management System

Major individual data laws and regulations still uphold outdated practices, such as 'prohibition of use for any purpose' or 'positive opening method', despite the Public Data Act and the Information Disclosure Act's promotion of data sharing and opening as negative principles. These approaches, which failed to achieve the desired results, are still in place. Stated differently, the disclosure-based data policy was not put into practice. Furthermore, even though it is not legally protected as confidential or non-disclosure, there are often instances where the institution either interprets the data in a passive manner or declines to provide it out of fear of being held accountable for issues that arise from its release.

In order to overcome this, all laws and regulations must be fully changed to a negative

data sharing and opening method, with the exceptions limited to trade secrets, national security, and personal information. This will ensure that all government agency data is shared and open. The government system should be infused with the concepts of data generation and management founded on the premise of disclosure, and individual laws that obstruct data disclosure should be entirely reorganized.

In order to prevent the creation of data partitions, the recently enacted ‘Special Act on the Government of Digital Platforms’ requires all government agencies to conduct ‘data sharing and utilization impact assessments’ when enacting and amending laws and regulations.

4. Conclusions

People are demanding more from the government and private sector public services because they are used to the inventive and convenient digital offerings from the private sector. People still have to visit different institutions to submit documents in accordance with offline-centered institutions and procedures, which is inconvenient despite the government’s efforts to digitize them. The national data management system is the cornerstone of the digital platform government that must be implemented by the public and private sectors in order to overcome this. Individual public and private institutions can integrate and manage important entities organically from a single point of view by using the national data management system. First and foremost, this has the potential to enhance public services pertaining to information exchange between citizens and governments via the national data management system. Ensuring the consistency and accuracy of information across administrative agencies improves service reliability while saving time and money when the same or similar information is submitted to or changed for multiple administrative agencies. Secondly, optimize the efficiency of administrative services like welfare and taxes. Accurate data collection and prevention of fraud can also avoid budget waste by preventing duplicate supply and demand and fraud. Third, duplicate budget investment can be avoided or at least made less expensive. For individual institutions managing and collecting data, an integrated management system lowers management expenses. Fourth, governance can be strengthened and data quality can be improved. The level of data quality can be significantly raised through rigorous quality control by the

national data management system. Additionally, ownership can be assigned at the attribute level of the integrated master data to make it clearer who is responsible for what and how each institution fits in. Fifth, a data-oriented process can be redesigned. Through the implementation of data-driven, continuous business processing, all administrative agencies can share the integrated national master data at the same time and enhance work processes between government agencies and private and public institutions. Ultimately, it can serve as the foundation for the introduction of artificial intelligence technology, which has gained a lot of attention lately.

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