Korea’s Legal Framework of E-gov.
Responding to the New Age of Data

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Abstract. One of the most important issues that needed consideration when establishing the legal framework at a given point in time was to properly understand the characteristics and attributes of the Electronic Government Act and to build appropriate roles that fit into this structure[5]. While the harmonization of regulations on informatization and general administrative regulations as well as discussions on the direction and strategy of legislation that conform to the future e-government are still valid and important enough to warrant our full attention, the outside world seems to be changing too fast to wait for a consensus from such discussions. When data becomes the core of the future, the values of e-government will manifest in a different manner based on a totally different paradigm, thus necessitating a change in the legal framework of e-government. This paper seeks to review today's trend and the direction of tomorrow's legal framework for e-government to enable implementation of future e-government oriented on data.

Keywords: E-government, Legal Framework, Big Data, Media Theory, Informatization

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1 Foreword

There have been many changes, especially in the recent years, in the public sector of Korea. A small breeze that started with the introduction of digital typing devices that helped workers in the public sector to produce faster and more paperwork has turned into a storm of such diversity and magnitude no one could have ever imagined. The spectrum of e-government from its value to physical presence such as hardware, have come to not only dominate but totally take over all work within the public sector. And the governance on which the public sector, in specific the government, rests on is facing new challenges as the paradigm of work process itself is changing from paper-based procedures to electronic online flow of information.

It is the intend of the writers of this paper to take a closer look into this phenomenon that has spread to almost every corner of the world but more so in Korea because of the advanced information infrastructure and extremely digital-minded population she possesses. In specific, this paper will look into the legal framework of e-governance, the central mechanism that glues the government and the public sector together and fuels the work that goes on within today. And at the core of this paradigm shift is the data. It has become the one factor that unites all public sector in how the e-government has been implemented and the direction in which such paradigm shift will take. In this respect, it is the opinion of the writers of this thesis that we need to look at and review the changes that need to be considered in replacing the aging legal framework which is governing the e-government of today. The discussions contained here within seek to shed a light on the direction of the legal framework that will shape the future e-government based on data, the fundamental building block of the future society.

2 Understanding Legal Aspects of the Media Theory and the Age of Data

While human beings have always lived in a communal society for as long as their existence and have developed their unique cultures and civilizations through social communication within a limited geographical area dictated by physical barriers, it was not until the discovery or rather, the invention of the written language and the accompanying record keeping technology that the human civilization really started to flourish as we know it today. The history of human beings changed irrevocably and advances hitherto unknown became common as important information did not need to depend on mouth-to-mouth oral transmission but on easily accessible and transferable medium, mainly, paper documentation.

The usual practice to stop the transmission of information and thought prior to the development of such media was to physically stop the person who possessed the knowledge from transferring it. On the other hand, the dissemination of knowledge

\[\text{It should be noted that the word "easily" is to be understood in relative terms, especially in an age when tongue pulling and incarceration were commonly used as punishment to stop unwanted spread of practically all information by the ruling class.}\]
and thought also had to be done by such person, limiting the spread of knowledge due to physical and geographical barriers. Therefore, the management of transfer of information and thought, whether it be stopping or encouraging the transfer, was a simple matter of physically controlling the movement of the medium at hand, which is the human being that possessed the said knowledge or information. It is quite easy to see that the development and spread of media such as paper, can be attributed to the fact that it was not easy to find the person who possessed information and knowledge; furthermore, it was nearly impossible to prove the original author of his dissemination via such paper medium, basically providing anonymity against persecution. Quite clearly, the effort to disseminate or protect information and knowledge is not only a question of the freedom of expression but also a matter of how we treat the media that is the vehicle for transmission of the thought and knowledge itself.

At the core of the development of media are the diversity and arbitrary nature of thought itself. The incredibly diverse and varied types of thought and knowledge generated by human beings make it all but impossible to manage all such data. And the central issue that the human being is facing in his effort to increase his pool of knowledge has come down to how to effectively and efficiently "manage" the data he has amassed which will be used to increase and multiply the base of such knowledge.

And today, the historical effort made by the human race as a whole has led to informatization as the answer to the question of management of data. When extrapolated sufficiently, the concept and the IT technology of today that is the basis of informatization are also the basis of the media revolution that began so long ago. It is also the reason why the writers of this paper are looking into the media theory when the subject at hand are e-government and the age of data. Today, in the changing age of data, the thought, information, knowledge and even emotion generated by human beings as well their derivatives that take shape as certain types of messages are being digested and internalized by the modern society as data. And so, the heart and driver of the change in paradigm which is manifesting as e-government in the public sector, has become the data management technology.

2.1 The Infrastructure and Technology of the Age of Data

Continuing on with the previous assertion, we need to consider the 'big data' technology as the starting point for understanding the data management technology[1]. This relatively recent technology has radically changed the way data is assimilated especially when compared to the past, overcoming the technical limitations that made it impossible to manage thought and knowledge outside of the media from which they originated or were archived on. Even up to a few years ago, computer system that processed large amounts of data were limited by various factors such as computing power and limited format for data processing and management (for example, technical specifications for certain DBMS) and could not provide real-time processing capability. But with the advent of revolutionary technology both in hardware and software, these limitations have become a thing of the past, bringing about innovation of the age of data. In fact, together with big data, the cloud computing and IoT technology have become the revolutionary catalysts for the change in paradigm for informatization from a media management point of view.
In the age of data, the data is the smallest unit of thought or knowledge in so far as the discussion in the earlier chapter of media theory goes. The large significance that we place on the age of data comes from the fact that thought and knowledge themselves have become the direct objects of management, overcoming the limitation of previous system of media management. And such change can only bring a change in the paradigm for informatization and e-government which had been focused on management of the media such as information system or network, meaning that data itself has now become the center of all attention.

2.2 Legal Relationship between Data and Media

It is difficult to simply say that the focus of Korean legislations is either data or media. In fact, it is not difficult to find that while data is considered important and given certain amount of symbolic importance, many legislations on informatization tend to regulate and focus on management of media. For example, the Act on the Protection of Information and Communications Infrastructure and the Act on Promotion of Information and Communications Network Utilization and Information Protection, etc., both clearly state the principle that ‘protection of information’ is the ideal that they strive for but in reality, both laws focus mainly on protecting the media of information such as the infrastructure, communications network and information system.

Under such circumstance, while data itself is quite important, it becomes difficult to determine if such laws focus on media management because there is no other choice for legal regulation to protect data or if media and management of media are important enough to warrant such attention. But in so far as media theory is concerned, there is a clear difference between these two points of view. Albeit cautiously, the writers of this paper would like to point out that as much as thought and knowledge that manifest as data in the modern society are the core values in the age of data, it is also true that the management of these values cannot be realistically separated from the management of media.

2.3 Legal Environment and Challenges of the Age of Data

Facing the age of data, the questions of the legal environment in Korea today and how it should be modified to deal with the issues outlined in the previous dissertation have become topics of some importance recently in Korea. The first issue raised is if individual nations can be recognized from each other and if such recognition has any meaning in the international community in the age of data. As point in case, many global companies today possess more competency and expertise than most governments in handling and managing data, leading to heated debate on the problems posed by the current legal system that regulate such companies[2,3]. In fact, any nation, government or legal framework will most likely face the challenges previously un-dealt with, arising from both global and local companies that possess the capacity and expertise in dealing with data.

Another difficult issue to consider is if the current legal framework focused on dealing with media management can adjust to the coming change in paradigm. Even
today, we are facing extremely complex and diverse situations as the once definitive line between the public and the private sectors has become blurry and the e-government is not the product of solely the public sector but a partnership between the public and the private sectors. With the appearance of private entrepreneurs who make use of public data to act much like the government and the government making use of data from the private sector, the convergence of one-stop services that utilize both the public and private sector data has now become so common that there have been much discussions on if the current Electronic Government Act of Korea will continue to contribute to the e-governance and also if the current legal framework can provide the foundation for continuously innovating the e-government[4].

3 Characteristics of Electronic Government Act of Korea and Issues in the Data Oriented Environment

3.1 Informatization and Electronic Government Act

Until now, informatization meant changing the printed media or the paper to information system oriented work flow and thus had much to do with the earlier goals of the e-government that sought to improve the efficiency of the government using information technology. Although already much accomplished, this aspect of informatization is none-the-less, as valid today as it was in the early 1990s when it first began. Specifically, as society and technology adapt to data as the core value for the next phase of evolution, the effectiveness and efficiency of the Electronic Government Act in terms of how to revise its characteristics and attributes becomes one of the most important issues that needs to be dealt with. Presently in Korea, the On-nara system for the central government agencies and the Se-OLL system for the local governments are the media that represent the efficiency of internal government work process and together with laws that regulate these system, are expected to bear the brunt of the challenges to come.

3.2 Information Resource Management(IRM) and the Electronic Government Act

Information Resource Management (IRM) is an element and part of the e-government that is absolutely needed and required for the implementation of e-government. And this concept of the IRM is in fact, basically the management of media used by the US government because there was no way to directly manage data as in the Paperwork Reduction Act of the US. If data can only be handled in such manner, can the management of information resource change at all and if so, in what from in the age of data? The problem of cloud computing in the public sector seems to represent this issue the best in the recent times. When the so-called cloud government becomes reality, many complex and conflicting issues starting with information resource management of innovative new technology, characteristics of e-government itself and individual laws and regulations will come to dominate the legal arena for informatization.
3.3 Administrative Affairs Management and the Electronic Government Act

One of the most important attribute or characteristics of the Electronic Government Act of Korea is that this law governs all administrative affairs of the government in Korea. As such, the harmonization of the Electronic Government Act with other general administrative regulations is the most importance issue at hand in the effectiveness of the law itself. While there have been some barrier breakings through connectivity between different information system implemented within the government, even today, informatization and management of information resource have been implemented in such a manner that they have simply replaced the physical manifestation of government work process which had mostly been paper documentation. This is especially true when looking at the legal framework that govern the e-government. Without any doubt, this issue will become one of the biggest problems in the near future when data becomes the object of management, not the media as it is today. Simply put, data processing regulations from individual administrative laws will bring about the same result and effect of such regulations from the Electronic Government Act which in turn, will create the demand to review and re-establish the relationship between many administrative regulations and the Electronic Government Act for all government affairs ranging from structure of government organizations, human resource management, budgeting, performance management and more.

3.4 Public Informatization Market and the Electronic Government Act

As we try to imagine how the data industry and the public informatization market will change in the near future of the age of data, an inevitable question of what the current framework means comes to mind. Will the government need to carry out and implement informatization projects which are basically for the management of media in an age when the purchase of data itself, whether it be traffic data, real-time communications data or data from overseas becomes common place and easier? It would seem that the need to implement such projects will lessen to such a point that it would be more effective and efficient to make use of private information system or media to improve efficiency of public administration and provide higher quality public service delivery while reducing cost and saving budget at the same time. And the public procurement market will face an incredible upheaval in such environment. We need to either newly establish appropriate government procurement regulations that reflect the data oriented market practices within the values and objectives of the e-government or modify the current regulations sufficiently enough to deal with such demand.

4 Conclusion: Direction of Evolution of Korea's Electronic Government Act in the Age of Data

One of the most important issue that needed consideration when establishing the legal framework at a given point in time was to properly understand the characteristics and attributes of the Electronic Government Act and to build appropriate roles that fit into
this structure[5]. While the harmonization of regulations on informatization and general administrative regulations as well as discussions on the direction and strategy of legislation that conform to the future e-government are still valid and important enough to warrant our full attention, the outside world seems to be changing too fast to wait for a consensus from such discussions. In fact, at this point in time when we are entering into an age where direct management of data is becoming technically possible in place of indirect media management, the writers of this paper are worried that the current legal framework of e-government may become detrimental to the development of e-government in the near future. From a media management point of view, it would seem that simply adjusting and modifying parts or elements of the current legal framework will not be sufficient enough to deal with the coming changes. In the end, the authors of this paper feel that the legal framework of e-government in the new age of data needs to take a totally new direction and break off from the current paradigm.

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