



SUMMARY

A Study on Policy Directions for Geospatial Information in a Hyper-connected Society

Ho-Sang Sakong, Jong-Taek Park, Mi-Jeong Kim

Thanks to the development of information and communications technology (ICT), including smart devices, sensors, and networks, our society is transforming into a hyper-connected society, where people, things, and spaces are connected and information shared regardless of time and place. Synergies are being created through the convergence of the Internet of things (IoT) and spatial information, the two driving forces behind a hyper-connected society, based on their inseparable relationship. Driverless cars and drones need accurate and detailed real-time spatial information. Moreover, connectivity, intelligence, and integrity are required for spatial information to meet demand for intelligent spaces. Current spatial information, however, falls short of the quality and standards needed by a hyper-connected society and is not being used effectively for the convergence of services based on spatial information and the 4th industry. This study aims to suggest directions for national spatial information policy that will enable effective meeting of the demand for spatial information in a hyper-connected society.

This study consists of five chapters. The first chapter deals with the background, purpose, scope, and methodology of the research, reviews similar past studies, and identifies the differential features between this study and previous studies.

The second chapter investigates the relationship between hyper-connectivity and IoT, looking at the significance and influence of hyper-connectivity and the concept and characteristics of IoT. Regarding the concept of IoT, the existing academic literature was reviewed; regarding its characteristics, major technologies and their development were examined. This chapter also deals with IoT-related policy and market trends both at home and abroad.

The third chapter discusses whether current spatial information is adequate for a hyper-connected society and what should be improved. The functional relationship between IoT and spatial information was analyzed and the concept and model of Geo-IoT, which refers to IoT based on spatial information, established. Case studies on Geo-IoT and the development and operation of IoT pilot projects were also discussed, with analysis of the case studies focusing on the synergies between IoT and spatial information.

The fourth chapter deals with the development of spatial information, current trends, and the future outlook. The course of the convergence of spatial information technology and ICT was reviewed, and demand for spatial information in a hyper-connected society was analyzed. This chapter also discusses changes related to users of spatial information and where spatial information is used, recent trends in spatial information, and the outlook for spatial information in a hyper-connected society.

The fifth chapter suggests directions for spatial information policy that will

meet the demand for hyper-connectivity. For this purpose, factors that affect spatial information policy were analyzed. Based on this analysis, a framework for spatial information policy and specific policy directions were suggested. Suggestions included the upgrading of spatial information infrastructure, convergence and utilization of spatial information, the laying of a foundation for collaboration, and improvements to related laws and institutions.

The following observations and recommendations were made on policies for spatial information that will meet the demand of a hyper-connected society: First, for the operation of unmanned vehicles such as self-driving cars, drones, and robots, high-precision GPS and digital mapping, as well as three-dimensional spatial information, are required. Also required is the adoption of linked data technology, which enables computers to search, recognize, link, and utilize big data.

Second, to promote the convergence and utilization of IoT and spatial information, measures were recommended for the creation of smart cities on the basis of spatial information and for the development of the Geo-IoT industry, which combines spatial information and IoT. Standardization projects to expand the use of spatial information and IoT were also suggested.

Third, the need to protect personal information and strengthen security through the improvement of related laws and institutions was discussed. The widespread use of IoT has resulted in the growing possibility of privacy invasion. As society becomes more connected, the risks are increasing of problems like those caused by hacking. Accordingly, the moral and ethical guidelines on such matters, as well as the laws and institutions that act as a safety mechanism against such risks, must be strengthened. The last recommendation was for the laying of a foundation for collaboration to

promote the convergence and utilization of spatial information and IoT. This included a call for public-private cooperation that properly reflects the growing functions and roles of the private sector and a discussion of the need for a collaborative ecosystem in the convergence industry and the directions it should take.

This study is expected to be useful for public officials in charge of formulating national spatial information policies and entrepreneurs searching for business opportunities in the convergence of spatial information and IoT.