

Development of Web-GIS in Order to Accumulate, Share and Exchange Regional Knowledge

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The Science Council of Japan's 2008 "Towards the Accumulation and Utilization of 'Regional Knowledge'" places heavy importance on locally inherent regional knowledge, and considers systemic reforms targeting the accumulation, organization, utilization, and release of this regional knowledge, together with technological development, and the establishment of a system for operating the above, to be essential. "Regional knowledge" is information, knowledge, and wisdom that combines "specialized knowledge", highly specialized data resulting from scientific knowledge, with "experiential knowledge", which is a product of the experiences of the people living in an area. It permeates the daily lives of people living in a region. It is now possible for people to easily exchange information with others anytime, anywhere, and with anyone, through the use of information systems. Effectively used, information systems can make it possible to share regional knowledge even more efficiently.

Against this backdrop, the importance of information systems which can share regional knowledge, which is "implicit knowledge", the domain of local residents, left un-visualized, not having been conveyed to others, in the form of "formal knowledge", which can be stored, organized, utilized, and publicized, will continue to grow. The objective of this study is the development of an information sharing GIS, specially tailored to the efficient accumulation, sharing and exchange of regional knowledge within regions on the city, town, and village spatial scale.

The information sharing GIS of this study is a geographical information system which integrates a Web-GIS, an SNS (Social Networking System), and a Wiki into a single system. These three Web applications have the following features.

- Web-GIS: This makes it possible to geographically understand positional information, manage massive amounts of position based data, as well as display analysis results involving environmental variables.

- SNS: These are suited for the sharing of information between users connected by some commonality. Because users can be individually identified, SNS can be used in the creation of environments which are close to the real world.

- Wiki: With wikis, it is possible for multiple users to modify and update the same Web page. Users cooperate together to create and refine content, improving it over time.

Integrating the three Web applications described above makes it possible for SNS to be used to narrow down the user base to target users, for Web-GIS to be used to visualize actual target regions, and for wikis to be used to share information specific to individual locations, creating a synergistic effect capitalizing on each of their strengths. Our study is unique in that it regards the development of an information sharing GIS which integrates these three Web applications.

The information sharing GIS which is the topic of this study uses a design which ameliorates the following three constraints such as time constraints, spatial constraints and continuous operation related constraints, making it possible to design systems in accordance with target cases. This shows the utility of the system designed during the course of this study.

Keywords: Regional knowledge, Information Sharing GIS, Web-GIS, SNS, Wiki