IT Integration Drives Internet GIS

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Two of the technologies of the 90s, the Information Technology (IT) and Geographic Information Systems (GIS) have changed the ways of specialist and common people access, share, disseminate and analyze data and information. Especially, Internet GIS emerges as the combination of Internet and GIS. Therefore, both two sides have a profound influence in the innovation of Internet GIS. In order to explain the relationship between IT and Internet GIS and explore its perspective tendencies, some points will be given from different sides as follows. First, a brief introduction is given to explain the essential relationship between IT and Internet GIS. It comes to a conclusion that IT is the more important force to boost the development of Internet GIS than GIS technology itself. Second, by comparison of Internet GIS models and corresponding IT in different history stages, a clear relationship between them is illustrated with Internet GIS softwares. For example, raster image and HTML/CGI, vector map and Java, PGML, VML, GML and XML, file model and Spatial Database, Visualization and VRML, wireless mapping and WML/WAP, etc. Third, based on present Internet GIS architecture, a perspective Internet GIS model is explained in detail to reflect the potential tendency by integration of IT. It shows that IT integration boosts the development of Internet GIS. Fourth, Potential influence of IT integration towards Internet GIS. It mainly includes spatial data interoperability, interactivity among different media and between clients and servers, and spatial distributed computing. Those discussions will be helpful to understand the profound influence of IT integration. Fifth, several potential new application fields are mentioned. Such fields range from PDA to desktop machine, from specialist to common user. Finally, an Internet GIS system, which integrates Oracle8I, XML, and Java technology, is implemented to further verify above idea. In the system, Oracle8I manages spatial data in server-side. The required spatial data are loaded from Oracle8I and then stored into XML. Client-side receives the XML data file and displays data results.