

Spatial Data Clearinghouses

Information plays a key role in support of virtually any activity, in whatever nook or cranny of today's society. About 80% of all public-sector information have geo-spatial component, referenced either by address or coordinates. In the long ago past a large diversity of governmental departments was created, primarily for reasons of administrative efficiency. Many of these collected and used geo-data and many are still in existence today. So in many countries, a great deal of geo-data is scattered across public agencies. And whilst they may have been effective in the past, these resulting islands of information do not well match the needs of a modern society in which ICT and (Geo-) Information for Everybody is crucial.

SDI

Recognising the importance of sharing geo-data in improving internal working processes and services to the public, governments all over the world have constructed bridges to connect the islands, or have started projects to build them. The result is Spatial Data Infrastructure (SDI). The success of any SDI is greatly dependent upon demand for geo-information products and services. Supply and demand meets in the marketplace. Given the digital format of the commodity, e-markets, where suppliers and customers meet each other via the internet, are most appropriate. Recent research has shown that to date 83 countries have established SDI internet-based clearinghouses to bring together geo-data suppliers and geo-data users, whilst 25 countries have started projects to build clearinghouses.* The basic resource of such clearinghouses is a database accessible over the internet and providing meta-information about the presence, nature, availability, location, format, etc. of nationally available geo-information. Meta-data supports the user in exploration and inventory of geo-information and assessing its fitness for use.

Societal Conditions

More specifically, a clearinghouse can be defined as a service for searching, viewing, transferring, ordering, advertising and disseminating over the internet geo-data stored at many different locations in digital format. In one of his presidential Executive Orders issued in 1994 and entitled "Coordinating geographic data acquisition and access to the National Spatial Data Infrastructure", former US president Bill Clinton acknowledged a clearinghouse for geo-data to be one of the most essential components of a SDI. This because a clearinghouse enables access and retrieval of distributed data from one entry point. The first national clearinghouse was established in 1994 in the United States. Since then many countries have followed the initiative. However, these are not regularly distributed over the globe. Countries with high living standards are over-represented compared to those where such standards are low; more than 60% of western countries have established a clearinghouse, whilst in sub-Saharan Africa the percentage is close to zero. In the latter region many initiatives are underway. However, establishment of a SDI and clearinghouses may come under threat from adverse societal conditions. These may include lack of funding, often induced by a weak tax system, absence of any proper revenue-generating methodology, competition amongst institutional islands, lack of commitment on the part of highest management, unwillingness to co-operate in solution-oriented terms, and lack of experts and specialists. Most SDI initiatives in African countries were begun without thorough consideration of a policy for implementation. The creation of a platform for data sharing often suffers from such impediments.

Meeting Needs

Although societal factors are very important, factors relating to adoption of the appropriate business model are also crucial for successful development of national clearinghouses. One such involves management having a clear view of the specific needs of users and being willing to meet these. Understanding users will provide clearinghouse management with clues as to alternative possibilities for their datasets. Any increasing and divergent users' group requires value-added products and services and, if it is to satisfy such a group, management has to develop a transparent marketing strategy. What is more, the targeted user group should exceed certain critical levels. Thus continuing promotional activities are essential for raising awareness amongst potential users about the benefits of using geo-information products and services. On the input side, geo-data suppliers, both traditional, such as national mapping agencies, and novel as emerging most often from government privatisation exercises, should be encouraged and sensitised into participating.

Poor Management

Since the main medium of communication with customers is the internet and internet technology is rapidly evolving, continual effort is required to keep channels of communication moving and up to date. In particular, ease of use of the web-portal is essential for ensuring revisits. Unfortunately, it has been recognised that current clearinghouses are generally not very well managed. Revisits are also declining, probably as a result of dissatisfaction among users faced with user-unfriendly functionality and difficulties in finding information along intuitive lines of thinking (see GIM September 2005, vol. 19 (9), pp 37-39). The establishment of a SDI and a national clearinghouse is a tour de force the magnitude of which should not be underestimated. And once these two have been established the biggest threats to continuation and causes of decline are poor management and lack of both funding and customers. Of these three the most dire is probably poor management.

* Joep Cromptoets, 2006, National Spatial Data Clearinghouses, worldwide development and impact; PhD thesis, Wageningen University, The Netherlands, ISBN: 90-8504-341-7.