Meta-data needs to support cross-border data exchange and interdepartmental data sharing. It is designed to help each group align with the others without asking them to change their cultures or practice. Meta-data standards need to be established for communication between agencies that include communications protocols, data formats, data storage and retrieval procedures, and data delivery/availability requirements. They also should spell out the methods used for data aggregation and archiving. Included in these databases are the individual agencies' mission, authority, and responsibilities.

Guiding Questions

What kind of meta-data will support a diversity of data practices in your system?

Is there a way to prepare the data, meta-data, or links in advance to support contingent and changing relationships?

When designing meta-data, are there specific obligations along each communication vector that need to be established?

Further Information

Meta-data standards are written into EU regulation and practice. The EU states that "Information resources must be made visible in a way that allows people to tell whether the resources are likely to be useful to them" and "If a resource is worth making available, it is also worth describing it with relevant metadata so as to maximise the ability of information seekers to locate it" [Link]. Specific EU-funded projects, such as INSPIRE, and Academic research centres, such as the Digital Curation Centre, have worked to assemble the range of meta-standards in one place, providing not just tools to support compliance but new research to support how such compliance can also support the diverse ways of interpreting and using the data.

Preparing metadata is not only about providing descriptors but equally about providing context (the aims of the data gathered or information provided, not just the content included in that data/information). Producing metadata is also a process about preparing data for long-term storage, in the process considering issues around stewardship, sharing, alternative uses, who might find the discovery of the data values, and possible combination with other data/information.

Examples

The **Emergency Data Exchange Language** (EDXL) and the **Common Alerting Protocol** (CAP) are examples where attention to the production of meta-data has been extremely productive (OASIS 2005). They allow development of public warning systems in which participants (including the public, business owners, media representatives, etc.) could elect to receive public warnings via voice messages, SMS, email, fax and Web pages (or several of these channels) (Ianella and Henricksen 2007)

Climate Cross-Border Meta-data Standards: Within the U.S., standards – these include communications protocols, data formats, data storage and retrieval procedures, and data delivery/availability requirements – have been established for the communication between agencies for regional meteorological information as well as environmental information during disasters. They also have spelled out methods for data aggregation and archiving. Included in these databases are the individual agencies' mission, authority, and responsibilities. In addition, each agency has established a memorandum of agreement that spells out specific obligations along that communication vector.

In Europe, sharing data between countries for weather has been happening for over a century. But despite a common interest and agreement for the need, it was also common practice only to observe agreements when they were useful, otherwise ignoring them. Using these agreements strategically was also a way for scientists who did the intergovernmental work to keep some control and not lose their autonomy as practitioners of science and be placed in positions as national representatives, serving the interest of the nation rather than the scientific task at hand. Another fear was the loss of diversity as meta-data becomes the standard for sharing, especially through the politisation of data sharing with standards designed from above/central bodies but meant to be enacted locally. Though it was scientifically agreed upon that there is no single appropriate approach to weather modelling, data sharing could force a single perspective upon the rest.

Resources

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