

APPLICATIONS OF METADATA

Interoperability of information

Interoperability is the ability of different software and hardware platforms with multiple systems, data structures, and interfaces to exchange data with minimal loss of functionality and content.

Web sites that provide access to crosswalks between metadata standards are www.ukoln.ac.uk/metadata/interoperability. Others are listed under "MARC Mappings" at [www.loc.gov/marc/marcdoc.html](http://www.loc.gov/marc/marcdoc/marcdoc.html).

Applying metadata in your environment becomes crucial as society becomes more digital. The application of metadata is so important in the digital environment because it allows a digital object or collection to be understood by both machines and humans in ways that promote interoperability.

Two transportation models are in place to assist in the interoperability of metadata standards—eXtensible Markup Language (XML) and Resource Description Framework (RDF). These transportation models are usually enabled concurrently to provide for the success of both.

The two most well-developed transportation protocols are the XML and RDF. Both of these protocols are not necessarily metadata standards; they are designed to automatically package and send metadata, and promote interoperability. More information on XML and RDF can be found in Chapter 3.

The creation of transportation/transfer protocols that enable the identification and translation among various metadata standards is one approach. The other mechanism is the employment of crosswalks among metadata schemes. Crosswalks are human-designed indexes that attempt to match and pair different tags and elements in the various metadata standards so Web and digital resource creators understand their relationships and can assist in retrieval and access.

Crosswalks can be built into any new systems, so someone using Dublin Core, for example, can automatically transfer that information into MARC or another metadata standard. Crosswalks are built on the principle of input once, output many—information is typed once, and then can be output into other standards and systems without more input. OCLC's Connexion, which is scheduled to replace Passport by December 2003 and will soon be incorporated into OCLC's new Cataloger's Metadata Desktop, is an example of this crosswalk. Records can be input in MARC or Dublin Core, and with the click of a button can be displayed in the other standard.

Two approaches are mainly used for the retrieval and use of metadata information. The first is cross-system searching, enabled by the Z39.50 protocol. Information organizations that incorporate the Z39.50 protocol do not actually share metadata, but map their search and retrieval tools to a common set of search attributes, allowing interoperability among disparate computer systems.

The second approach is metadata harvesting, which is led by the Open Archives Initiative (OAI). OAI encourages its partners to translate their native metadata to a common core element set (in this case, Unqualified Dublin Core) and to expose this core set for harvesting (make the information available for download and retrieval by automatic indexing software systems). A search service then gathers the metadata and coordinates it into a central index to allow for cross-repository searching. More on the OAI can be found in Chapter 3.