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Beyond MARC: New Trends for the Library of the Future

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Introduction

It is vitally important that the library profession keep pace with new technologies being developed for the public by industries across the world. The library has to adapt to changing trends and lifestyle issues. Some changes may necessitate a different approach to the traditional roles and methods of operation. Most libraries are meeting a host of challenges presented by industries and new technologies, and are incorporating new ideas into the profession to better serve their clients. The influence of recent industrial changes has resulted in some libraries experiencing change in the methods of operating.

For example, some functions of technical services are being outsourced to private businesses. Some libraries find outsourcing easier and more cost effective than hiring personnel to perform these traditionally held functions. Another profound change that has already affected how libraries operate as service providers is the change in how they present and describe content. MARC, once the traditional language of choice for libraries in describing format and content, is now being questioned as to its relevance. As a library-specific language, it lacked interoperability with other more modern languages used on the Internet such as HMTL, SGML, and XML. MARC's inability to be offered as an industry wide standard was cause for concern among vendors that historically provided service to libraries. Unlike MARC, however, XML is derived from HGML and SGML, and is better suited to describe the attributes of the technological offerings of the private sector, colleges, hospitals, and institutions. XML is extensible, interoperable with other ML languages, and its use has opened the collections of libraries across the world for viewing, unlike a unique program or stand-alone application could.

X-MARCs the Spot

My attention was first drawn to XML when I began to read emails on AUTOCAT discussing the concept of using XML languages to replace the traditional MARC language. XML advocates argued for the new language and the opportunity it provided to be more descriptive with the emerging technology and resources. Those opposed to XML proposed that traditional MARC could be modified to accommodate the ever-changing data formats or electronic resources. MARC was also considered to have a proven track record, whereas no one knew if XML would

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work well with established rules and procedures that had been a part of library tradition for sometime. After much research on XML, my conclusion is that both sides are correct.

And the winner is ...

While attending the American Library Cataloging and Metadata Institute conference in Washington DC, in November 2002, one of the presenters commented that "Dublin Core is so yesterday news." Dublin Core was OCLC's first attempt at migration from MARC to an extensible markup language. However, with formal standardization of Dublin Core-XML, OCLC had taken the next step in accommodating a broader industry in a rapidly expanding market in format language on the Web. OCLC developed an XML schema that preserved many MARC elements, but made the language extensible. Users could retain the traditional standards of MARC or move on to the DC-XML for the more advanced digital library or special library integrated needs.

This was confirmed in communications with Richard Greene, Metadata Director for OCLC. He stated that DC-XML is available for use by libraries that need it now for their special collections (movie, museum, medical, etc.). Libraries can migrate from MARC to DC-XML via portals. But libraries primarily using XML schemas cannot be migrated to MARC. Round-tripability does not exist between the two because of MARC's non-extensible structure.

The Volumetric/DC-XML/SMIL theory

Space and Naval Warfare Systems Center San Diego (SSC San Diego) is on the leading edge of technological advances. I provide original descriptive cataloging for all formats and reports produced by the Center and other agencies of the federal government. The Center is involved in developing state-of-the-art technologies. An example is volumetric technology. Volumetric technology allows a total view of an object. All sides of a volumetric projected object can be seen with the naked eye, as opposed to the 2-D or 3-D projected image that requires special glasses or eye wear to view. As a Cataloger with a self-described title of Descriptive Data Format Specialist, my dilemma at times is finding subject headings for new technology in LC Subject Headings or science thesauri resources. Consequently, when this new technology is finally introduced into the public sector, which format and cataloging language will be better suited to describe these new phenomena?

Since DC-XML can link with a few other Internet-based languages, I wondered what data structure could capture the essence of volumetric technology. Again, the volumetric concept allows for 360 degrees viewing of an object. That object could be a human pelvis, an airplane on the monitor of an Air Traffic Controller, one submarine looking at another submarine hiding behind an iceberg, or a molecule formation. Given these attributes, the only language that could currently be utilized for this type of new technology would have to be extensible. It would be difficult at best for traditional MARC language to be utilized in providing a basic description of this device. Part of the structure itself is a computer with specialized plug-ins, accompanied by a highly technical reflective device. This illustrates the limitation of traditional MARC, which is good with providing descriptive content for books, videos, sound recordings, etc. But DC-XML provides the extensible tags for the objects themselves.

In theory, DC-XML could be linked in application with SMIL (Synchronized Multimedia

Integration Language 2.0). SMIL incorporates audio and textual content data. Viewing objects directly from a 360-degree angle, like the human pelvis, could take on a totally new meaning. The only requirement for other extensible languages to be used with SMIL is that the "textual content include mark-up tags for the desired elements and that those elements include unique identifiers that can be referenced in the SMIL files." DC-XML in theory could work with SMIL with regard to this technology in the future, or even now with electronics books and sound recordings at music libraries.

Currently, the technology to view the volumetric objects only allows for a height of 36 inches to the lowest of 12 inches under a dome. Be assured that the capability for this technology to expand to the nearest virtual reality 360 degree "interactive-viewable theatre" near you is fast approaching.

Conclusion

The library profession has historically adapted to shifts in technology and worldwide industries. The entire profession has met many challenges with great courage and determination to survive as a unit. Within the last decade, however, new challenges such as downsizing, outsourcing, and cost cutting measures by federal, state, and local governments have resulted in some libraries closing their doors forever. Still, some advances allow the profession to change and re-invent itself as specialized providers of information. For Reference Librarians, the URL replaced the encyclopedia and a host of other reference aides. For Technical Services, the new methods of describing content and text may now include new language structure. XML, like MARC, can become just as familiar as MARC. Techniques on Connexion such as constant data and text stream could help in initial use of DC-XML. XML utilizes start and end tags (elements) and attributes (fixed or variable in MARC). Theoretically, creating macro text streams in Connexion for XML tags and attributes could increase efficiency. The growing popularity of XML will present more challenges for future Descriptive Data Format Specialists. I am confident the library profession will continue to evolve within its niche, by utilizing new industry standards and emerging technology.

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