KEY ISSUES

SFX – the context-sensitive linking system for libraries

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SFX permits context-sensitive linking among all parts of a library's electronic collection, including full-text repositories; abstracting, indexing, and citation databases; on-line catalogs; and citations appearing in research articles, e-print systems, and other Web resources. SFX provides users with seamless integration of heterogeneous resources and places the management of these linking services for users in the hands of the librarian. The librarian defines the conceptual relationships between different information resources to allow the user to take full advantage of the institution's collection, as well as to link to appropriate services.

SFX addresses the need for *open linking* that has been identified in the context of scholarly information systems. In the majority of the established linking solutions used today, service links are presented to users in a manner that fails to take into account their context, i.e. the digital library collection that is accessible to them. Such linking frameworks have been referred to as closed or non-context-sensitive. The lack of context in the provision of linking services causes serious problems, the appropriate copy problem being the most cited one. Many more examples have been given in the papers describing the research by Herbert Van de Sompel, which led to the development of the SFX server.

Such closed linking frameworks may be opened by allowing third party components, such as the SFX service component from Ex Libris, that do know about the context of the user, to provide linking services. These may be in addition to, or instead of, the *often* non-context-sensitive ones delivered by information providers.

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Open Linking Frameworks

An Open Linking Framework facilitates context-sensitive linking between a library's heterogeneous information resources, whether

these are hosted by the library and/or by external information providers, and regardless of format and communications protocol.

An Open Linking framework provides for coherent linking services across resources as defined by the library. It also allows for the extension of the linking concept beyond that of linking to the full-text of an article. Whilst the delivery of full text to the desktop has been a major advance in recent years and offers a key service to researchers; with an open linking environment, the librarian should be able to define many additional services they consider relevant to their users. These may include links to relevant local information repositories, service links to check the author, article and/or journal citation information; or a link to relevant web-based resources, possibly via the emerging subject gateways.

The SFX server

The SFX server is an open linking solution from Ex Libris. It is an Institutional Service Component that is purchased by an institution and remains under their control and management. The librarian may determine for their users which resources will be linked to what, and how these will be linked. The SFX server offers a single point for the administration of linking services, and for the collection of statistics. Powerful statistical reports can be generated using the SFX server such as:

- For which resources did users request linking services?
- When a user did request linking services, was the full text available as an option for linking?
- If full text options are available, how often did users select other types of services, and what is the nature of such other services?

The SFX server is suitable for implementation in single-and multi-site institutions and in consortia.

The OpenURL

The underlying mechanism that allows the SFX server to operate within an Open Linking Framework, is the OpenURL: an interoperability protocol that enables the context-sensitive resolution of service links for information objects. An information object is described by means of metadata and/or identifiers, and may be, for example, a citation in an Abstract & Indexing database, a reference given in an article or an entry for a book or journal as found in the library catalogue. The OpenURL is in effect an actionable URL that transports metadata or identifiers for the object for which the OpenURL is provided.

The OpenURL has been submitted to NISO for accreditation as an ANSI Standard; and has been accepted as a Fast Track work item. A growing number of information providers have developed or announced the ability to generate and output OpenURLs. Therefore, their services will interoperate with an institutional SFX server. A full list of these Information Providers is available at: http://www.sfxit.com/sources.html

The specification of the OpenURL - as is currently being implemented by a number of Information Providers, and other relevant material relating to the OpenURL can be found at: http://www.sfxit.com/OpenURL.html

More information about SFX is available at: http://www.sfxit.com

SFX servers are already installed and operational at a number of institutions, both in the USA and in Europe. An SFX server can be licensed from Ex Libris independently of other Ex Libris products. It is important to note, though, that the ALEPH and MetaLib products, also from Ex Libris, are SFX-enabled through implementation of the OpenURL.

SFX, OpenURL, DOI and CrossRef

The DOI (www.idf.org), CrossRef (www.CrossRef.org), SFX and OpenURL are complementary frameworks and components that can be integrated. Collaboration between the SFX community and the DOI community is underway, to integrate the OpenURL framework and the DOI framework, to enable localized resolution of DOI's. Further information on the prototype now being tested by the Los Alamos Research Library can be found at: http://www.sfxit.com/CNI2000.html