RFIDs in libraries

Mention of new and emerging technologies in libraries tends to conjure up images of web 2.0/3.0 applications, but there are significant changes in the ways we manage our physical collections, with the roll-out of RFID or Radio Frequency Identification technology. RFIDs are small chip-based devices that can store data, which can be used to provide a unique identification for objects or types of objects. The technology itself is not new. It is traced back to radio frequency transponders, attached to allied aircraft during World War 2 in order to distinguish them from hostile aircraft.

An object that contains or is tagged with a RFID can be detected, categorised, and tracked as it moves from one location to another. The data can be read from fixed or mobile devices at high speeds and without the need to have a line of sight between the object in which the RFID is incorporated and the reading device. This makes them considerably more effective and versatile than conventional barcodes although their cost is currently higher.

RFIDs are divided into two main types: active and passive. Active RFIDs have their own power supply and can transmit over significant distances, typically up to 100 metres. Passive RFIDs are generally smaller and rely on converting energy transmitted from reading devices into a signal that can be delivered over a short (up to 5m) or very short (up to 60cm) range. Data storage capacity varies from a few bits to several kilobytes but library applications normally use tags with 256 bits, with 2048-bit tags also available.

RFIDs are reported to bring benefits to a range of enterprises, with the potential to minimise physical handling of goods and to reduce or eliminate errors throughout the supply chain. There are many benefits for libraries, including improved stock management, enhanced client self-check, smart-sorting of returns, expanded security, reduced rate of repetitive strain injuries (RSI), and ability to scan boxed material such as archives. In some libraries, RFIDs have replaced barcodes as a result of their additional functionality.

Some consumer associations have pointed out, however, that, while many RFID applications are neutral with respect to the consumer, others could have adverse effects. Areas of concern include: privacy (tracking, profiling, and discrimination); security (for instance, identity theft in the case of e-passports); health (EMF emissions); and freedom of choice. There are well-publicised cases in which consumer groups have successfully stopped or reversed the implementation of specific applications: for instance, Benetton's abandonment of plans to embed tags in the fabric of its clothing.

In the library environment, issues have also been raised, particularly over privacy. Since RFIDs are active away from the library, state agencies could access information on users without necessarily having to tell the library. At the moment the librarian stands between the state and the information object/client link, but RFIDs change this by making the link visible to anyone with technology as good as or better than the library's. Surveillance is limited, however, by the range of the tags currently used in library applications.

A few years ago, the public expressed concern over the San Francisco Public Library Service's proposal to tag its book stock. Concerns revolved primarily around the potential for inferences to be made about life-style, sexual orientation, politics, and so on, based on people's reading habits. The SFPLS demonstrated a proactive approach to determination of the ethical and other issues related to the adoption of RFIDs, with the establishment of a Technology and Privacy Advisory Committee. The Committee anticipated many benefits in RFID adoption but also identified potential disadvantages, including concerns that RFIDs might contravene the American Library Association's Library Bill of Rights (based on First Amendment rights). Ironically, one of the benefits identified was enhanced client privacy (since self check-out could be supported).

In 2006, the ALA adopted a set of guidelines regarding RFIDs and privacy. These include commonsense practices such as limitation of bibliographic information stored on a tag to the unique identifier; the continuing security of bibliographic and client databases from unauthorised use; secure connections for all communications with Library Management Systems; and relevant staff training. The National Information Standards Organization in the USA has developed a substantial Recommended Practice document, while the International Standards Organisation (ISO) is addressing the issue of interoperability; a project to which Standards Australia and Australian libraries are expected to contribute (http://www.alia.org.au/rfidproject/).

Library directors considering RFID implementation need to consider ethical dimensions as well as the technical ones and ensure that appropriate management strategies are put in place.

(Based on a forthcoming paper by Forbes Gibb, Stathclyde University; Clare Thornley, University College, Dublin; John Weckert, Charles Sturt University; and Stuart Ferguson, University of Canberra.)

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