A (very) brief history of the role of libraries in managing access to information resources, how this underpins what libraries do now and will do in the future, how their role has changed in recent history, and some seminal milestones in the invention of modern access and identity management principles.

**Historical role of libraries in managing access to information**

I want a poor student to have the same means of indulging his learned curiosity, of following his rational pursuits, of consulting the same authorities, of fathoming the most intricate inquiry as the richest man in the kingdom, as far as books go . . .

(Select Committee on British Museum, 1836)

These were the words of Sir Anthony Panizzi, arguably the greatest administrative librarian who has ever lived, in his vision for the British Museum Library in 1836. Panizzi was not, at the time, envisaging libraries giving people access to the wealth of information resources beyond books, as they do 170 years later. But perhaps we can now see with the benefit of hindsight that the most perceptive part of that statement may have been ‘as far as books go’. Because whilst libraries all over the world have long
established their role in making access to books (and most other printed material) free and equal to all, they have not been able to achieve the same accessibility for the material delivered electronically, which already constitutes the majority by volume of information available from some libraries.

Since the first libraries existed, they have had two apparently conflicting purposes: to facilitate access to sources and records of scholarly knowledge; and to restrict such access. The oldest-established form of access management practised by libraries is still in use today in most of them. When information is contained in a printed book, it can be kept on a shelf (chained to it, if necessary) inside a secure building, and the entrance can be guarded to allow only known and authorized users into the building. A few examples of chained libraries still exist, such as the Hereford Cathedral Chained Library in the UK (www.herefordcathedral.org/education-research/library-and-archives/history-of-the-chained-library). If the library has a large number of users, the guard on duty may not know all of them well, so a user might be issued with some special credentials by the library – either to establish his (scholars were invariably 'he') identity, which could be checked against a list of authorized users, or merely requesting the guard to 'permit the bearer access'. This book does not even attempt to examine the motives, politics and other social factors that, now or in the past, have divided the 'information rich' (who can get into the library) from the 'information poor' (who are denied access, even if they can read the language of the books).

The role of libraries in the 21st century

During the relatively short period (of 30 years or less) of the late 20th century when libraries had started including electronic resources alongside print, but the internet and the web had not yet achieved ubiquity, electronic resources were most often held locally on optical discs, computer workstations or file servers, usually inside the library building. In this era there was little difference in access management terms between the few electronic resources and the many books and other paper-based items. If a user could get into the library, he or she could use all the resources there. A few notable exceptions (such as Lockheed Dialog – see www.dialog.com/about/history/transcript.shtml for details) were truly online networked services, but it was normally necessary to access them from a specially configured terminal, via a special (dial-up or leased line) connection.
Charges for access to most of these early online resources also meant that they were often actually used by library staff (who controlled the budgets that paid for them), and not by users directly. One of the authors’ memories of that period (as an occasional but computer-literate user of such things in the 1970s) is that the librarians of the time guarded them more closely and jealously than their ancient (and slightly more priestly) predecessors had probably kept ordinary citizens at a respectful distance from the Delphic Oracle – and used a similar amount of intended-to-baffle mumbo-jumbo to hide their own nervousness about using such big magic.

The role of libraries in the 21st century has changed fundamentally. For example, in the past, the information resources held by a library were often those which were generated within the university of which it was a part, or collected by the scholars of the university on their travels, and deposited with the library for safe-keeping. Although academic libraries still have a part to play in storing and making accessible the academic output of their local scholars, now reinvented through the use of institutional repositories, the problem they are now helping people to tackle is fundamentally one of too much information, rather than too little. Libraries that serve a specialized community still acquire and manage collections of printed and electronic resources of particular relevance to their users, but they also serve to filter all of the ‘free’ information on the web, highlighting what is likely to be of relevance to their users and helping to verify the provenance of its sources. The growing establishment of institutional repositories by libraries brings with it another access management issue, where the library finds itself in a similar role to that of the online publisher – even if the repository is intended to offer free-to-web access (see Chapter 2).

A second important type of access which many libraries are now managing is not to information as such, but to their own networked workstations, as a means of access for their patrons to ‘all that’s out there’ on the ‘free’ web. This has become an important new role for libraries, particularly public libraries, in helping to equalize access for the ‘information poor’ of today. Patrons can use this new service of the library to access a far wider range of information and services than the traditional range of printed resources would have contained, and this raises issues of whether (or to what extent and for what reasons) a library should restrict the use of the access facilities it provides. See Chapter 10 for a discussion of the issues for libraries that offer open network and web access and publicly available wireless access to the internet, and some of the technical solutions that can be used to manage this.
Part of the acquisitions role of libraries is the purchase of access to information resources that are online, but not ‘free’. For many libraries in the academic, public and business sectors this is (or will soon become) the second biggest line of their annual budget (after staff costs), outstripping annual expenditure on new printed books and periodicals. In terms of managing access to content, the responsibilities of a library may be largely defined by the conditions of such licences.

The history of access management of online information resources

The history of access management of online information resources, and identity management of library users to facilitate this, is conveniently very brief and probably contained within the lifetime of many readers of this book (and certainly that of the writers). None of this was a problem until the birth of the internet in 1983 (Zakon, 2006) that created the ubiquitous interconnection of everything and everywhere (almost). The scale of the problem increased dramatically after the birth of the world wide web in 1991 (Berners-Lee, 1998), which widened usability beyond the small minority who were technically competent in earlier internet protocols.

In 1994 Vint Cerf (1994), accredited as one of the inventors of the principles behind the internet, wrote a spoof history-from-the-future of network developments, in which he envisaged this continuing role of publishers (but not of libraries):

Interestingly, this didn’t do away either with the need for traditional publishers, who filter or evaluate material prior to publication, nor for a continuing interest in paper and CD-ROM. As display technology got better and more portable, though, paper became much more of a speciality item. Most documents were published on-line or on high-density digital storage media. The basic publishing process retained a heavy emphasis on editorial selection, but the mechanics shifted largely in the direction of the author – with help from experts in layout and accessibility. Of course, it helped to have a universal reference numbering plan which allowed authors to register documents in permanent archives. References could be made to these from any other on-line context and the documents retrieved readily, possibly at some cost for copying rights.

In one sense, the whole idea of restricting access to information on the web (and, therefore, of needing to manage such restricted access) goes against the
principles originally envisaged by Tim Berners-Lee in creating the web, of making information more interlinked and accessible to more people. But, of course, the dominance of commercial uses means that access to a great deal of web content is now restricted (but not necessarily very well managed).

The range of types of online information products available is wider than that of print resources, and the sheer volume of online content (not including that of the ‘free’ web) available in even a modestly funded library is likely to be many times that of the equivalent in print items that can be stocked. It includes fiction and non-fiction e-books (which more or less emulate their printed counterparts), reference works, such as dictionaries and encyclopedias (which can exploit the medium to be much more useful than their printed predecessors by including dynamic searching and cross-referencing, and content that includes sound and moving images), e-journals (currently still closely related to printed scholarly journals, but starting to lose the print-based concepts of volumes and issues, with some moving to online-only publication), ‘raw’ data sources (such as output from large scientific equipment, or population census data) and more interactive resources for learning or other processes, which have no obvious printed counterparts.

**The role of e-commerce in library access management**

E-commerce has driven the development of many of the web-based technologies that have been adopted by libraries for access management, or by the commercial publishers who market online resources to libraries. In nearly all cases publishers recognize and serve a ‘retail’ market for their products, selling individual licences for access to individuals or small businesses. It’s not easy to get information about the comparative volumes of such retail business, and corresponding ‘wholesale’ licensing via libraries, because publishers (like any other commercial businesses) are in a competitive environment and see such information as commercially confidential.

Many library users, too, are highly familiar with such retail e-commerce – possibly not for access to information resources (they have a library for that!) but for buying almost all other goods and services, and much more. Through buying books from Amazon, personal computers from Dell, or something bizarre from eBay, booking aircraft tickets, train tickets, medical appointments, to dealing with their bank or filing their tax returns, they have gained experience of dealing with their bank or filing their tax returns, they
secure ways of handing over personal information about themselves and, more significantly to most of them, their money. All of these transactions involve identity and access management (you wouldn’t want somebody else’s bizarre eBay purchase, would you?), and one thing that such people will certainly be experienced in is using (and probably forgetting) a multitude of usernames and passwords.

This means that libraries and librarians are now dealing with, at least in part, a population of users who may be more familiar than they are with what is possible and impossible, what works and what doesn’t. Such web-savvy users will not be tolerant of library services that don’t perform as well, regardless of the fact that the library is probably not driven to use technology to keep up with commercial competitors. They also deserve some respite from managing their own identity and access to things, and this is something that we, as information professionals, can offer them.

The ‘birth’ of access management principles – Clifford Lynch’s white paper

Partly because of the commercial origin of much of the content that requires access management by libraries, some of the business models and the technical solutions to implement them don’t perfectly match the relationship between publisher, library and library patron. They also fail to cater for new ways in which people quite reasonably want to use libraries, such as without having to visit the physical building of the library (perhaps because the particular library they need to use has its physical building on the other side of the world).

If we wanted to pinpoint a seminal event with which we could define the end of ‘the dark ages’ of access management, and the birth of current thinking and technology, it would be the meeting of the Digital Library Federation (DLF) on 6 April 1998. Shortly before this meeting, Clifford Lynch of the Coalition for Networked Information (CNI) produced a draft of his white paper (Lynch, 1998) defining the abstract requirements which should be met by access management systems, and outlining some options for further investigation. Lynch’s white paper is such a notable cornerstone of this subject that it is reproduced as Appendix 2 of this book.

Of course, it didn’t just happen like this, in one place at one particular time. The community of specialists in library and network access management is relatively small now, and it was even smaller then; and small communities talk amongst themselves. If they happen to be composed of
people who are intimately involved in the development of the internet, then they talk amongst themselves even if they are spread around the world. Lynch had in fact rehearsed many of the ideas, and the challenges posed by typical scenarios (involving users, libraries and publishers as actors) to various of the possible technology options that were then becoming apparent, in an earlier published paper (Lynch, 1997). Parallel thinking and discussions that helped to evolve these ideas were going on in other national fora and in other library-rooted projects. But the credit for defining the principles on which many developments have since been based, and documenting them in the most coherent way, should go to Lynch, the Coalition for Networked Information, and the Digital Library Federation. Chapter 3 will explain and expand on these principles, and define some of the terminology of identity and access management.

References

Select Committee on British Museum (1836) Report from the Select Committee on British Museum; together with the minutes of evidence, appendix and index.