the **library**
in the **twenty-first**
century
new services for the
information age

P E T E R   B R O P H Y

I have always imagined that Paradise will be a kind of library

Jorge Luis Borges

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What is a library?
The view from the sectors

Libraries form a vital part of the world's systems of education and information storage and retrieval. They make available – through books, films, recordings, and other media – knowledge that has been accumulated through the ages. People in all walks of life – including students, teachers, business executives, government officials, scholars, and scientists – use library resources in their work. Large numbers of people also turn to libraries to satisfy a desire for knowledge or to obtain material for some kind of leisure-time activity. In addition, many people enjoy book discussions, film shows, lectures, and other activities that are provided by their local library.

(*World Book Encyclopedia*, 1999)

Introduction

The key concepts in the above description are *education*, *information storage and retrieval* and *the transmission of knowledge*, but it also makes clear that libraries provide a very wide variety of activities and services for people 'in all walks of life'. The aim of this chapter is to explore in some detail what it is that libraries are actually *for* – what purpose they serve in society – as perceived by practitioners and policy makers in the various sectors, and to begin to examine how external influences are forcing a re-thinking of these roles.

It is as well to begin consideration of libraries by going back to their origins – and that means going back a very long way. While no one knows who founded the first recognizable library, and speculation would in any case be futile, quite a lot is known about some of the most celebrated libraries in the ancient world. That at Nineveh, capital of Assyria, was founded in the seventh century BC and contained thousands of clay tablets. Even more famous is the library at Alexandria in Egypt, created by Ptolemy Soter some time around 300 BC and attached to the Temple of the Muses. With its unparalleled collection of papyrus rolls it contained the major part of the world's recorded knowledge. Here were collected in one place the writings of philosophers and scholars, sci-

entists and poets, and here those with the time, authority, power and influence could come and consult humankind's memory. At a time when the term 'memory institution' is coming into use as a shorthand for libraries, museums, archives, art galleries and other similar organizations, it is worth remembering that Alexandria represented, all those centuries ago, the first real attempt to maintain the corporate memory of humankind from generation to generation in permanent, physical form.

The loss of the Alexandrian library resulted quite literally in the loss of much of human knowledge and it is a matter of speculation as to how world history might have unfolded had its treasures remained available – a lesson in the importance of preservation that should not be ignored today. Nor is it the only example of such loss. Recent excavations in South America show how the records of the remarkable Mayan, Inca and other civilizations were systematically destroyed by the European invaders of our medieval period. What knowledge and understanding we have lost as a result will never be known.

There were no great libraries in Europe in the early Middle Ages to rival those of Nineveh and Alexandria. What survived throughout the period from the destruction of the Roman Empire through to the 13th century were small – tiny by today's standards – collections of manuscripts in monasteries scattered across the continent, together with collections in private hands. These codices and scrolls represented only a fragment of the learning of ancient Greece and Rome, with a smattering of input from other civilizations, but what was there was guarded carefully. Thompson (1977) has pointed out that 'the common word for library in the early Middle Ages was *armarium*, the name for the bookchest where the books were kept; and the librarian of such a collection was known as the *armarius*'. Among his duties was that of ensuring that no one made copies without express permission, for the status of the library was linked in large part to the uniqueness of its collection.

This tradition of the library as the place where humankind's recorded memory is gathered together survives to the present day. It can most readily be seen in the great national libraries, which form the subject of the first of a series of sectoral descriptions below. In the following chapters, further consideration will be given to more theoretical concepts of the term 'library', including what is meant by 'collection'.

The view from the sectors 1: National libraries

The development of national libraries has, not surprisingly, followed a variety of patterns, although a common route in Europe has been through royal collections: the Kungliga Biblioteket or Royal Library in Stockholm provides a typical example of this development. King Gustav Vasa is usually credited with

starting the collections in the 1520s. His sons, Erik XIV, Johan III and Karl IX added to them and by 1587 a corridor lined with bookshelves, known as the 'Green Corridor' had been set up in a Palace attic. In 1661 legal deposit was enacted with all publishers in Sweden required to deposit two copies, one in the Royal Library and the other in the Royal Archives. The main reason for this appears to have been nothing to do with preservation or national bibliographic completeness but simply as a means of censoring, or at least checking up on, publishers and authors. Further additions to the Library came as a result of Swedish conquests abroad (the *Codex gigas* or *Devil's Bible*, perhaps the Library's greatest treasure, dating from the 13th century, was acquired from Prague in this way) and the confiscation of books owned by religious houses during the Reformation.

In similar vein, the British Museum Library's foundation collection, that of Sir Hans Sloane, was greatly enhanced when the royal collection was added in 1757 and then further enhanced with the collection of George III in 1823. Republics have taken a slightly different route, with the national library often developing as an adjunct of government, as with the Library of Congress in the USA, established in 1800 as a legislative library. The Australian National Library had similar antecedents, being separated from the Commonwealth Parliamentary Library in 1961.

The role of the modern national library was established during the 19th century, with the then Librarian of the British Museum, Antony Panizzi, providing leadership. His key achievements may still be seen as marking out the ground that a national library should occupy:

- He secured an annual block grant from the Treasury, thus establishing the principle that the national library should be funded on a permanent basis through general taxation.
- He enforced legal deposit, the system whereby the national library was entitled to a copy of every book published in the country.
- He employed a network of agents to purchase foreign works for the library, thus establishing that while the collection would not be comprehensive in such works, it was a function of the national library to provide access to a representative selection of non-indigenous works.
- He established the formal '91 rules' for the construction of the library catalogue.
- He fought for and established the principle of access for all who needed it.
- He established that the fundamental purpose of a national library was educational.
- He secured appropriate accommodation for the national library and ensured that this was of high status – the Round Reading Room in

Bloomsbury came to stand for the concept of a national library for many, leading eventually to a strong rearguard action by readers when the Library transferred to its new and modern building at St Pancras.

The functions of national libraries have been set out more formally by UNESCO, with one eye on developing countries, as:

- Essential functions
  - collect and conserve the national literature, aiming for complete coverage
  - produce a current national bibliography
  - operate a lending service
  - act as a national bibliographic information service
  - publish or support the publication of specialist bibliographies.
- Desirable functions
  - act as a centre for research and development in library and information work
  - provide education and training in library and information work
  - act as a planning centre for the nation's libraries.
- Possible functions
  - act as a centre for the exchange of material between libraries
  - supply specialized library services for government
  - act as a book museum.

Most national libraries still enjoy the benefits (and of course disadvantages) of legal deposit. In some cases, the privilege has been extended to newer media such as video (in Canada, for example – see Winston, 1997) but most countries are still trying to decide how to apply the requirement – if at all·– to such material. A consultation paper issued by the UK Department of National Heritage in 1997 identified many of the issues, but there has been little movement on the key question of new media and in particular electronic objects. This is hardly surprising since such objects are often dynamic and transitory. While a few countries have extended their legal deposit legislation to electronic media (for example, the Netherlands with its Depository for Electronic Publications, described in Chapter 9) most are still struggling to come to terms with it. In the UK a Code of Practice has been agreed, but it lacks legal force and its efficacy has yet to be proved.

The question of preservation and conservation looms large on the national library agenda since a core responsibility is to ensure that the national bibliography is preserved for future generations. Clearly it will continue to be essential to conserve and preserve valuable objects from the past, although some may

see this, as noted in Chapter 1, as a museum function inasmuch as it applies to print on paper.

The role of providing bibliographic access, in effect that of describing the contents of the national bibliography, is one that has become more difficult with increasing volumes of publication, globalization and the explosion of non-print media. It is hard to see that the justification for concentrating, in bibliographic terms, on paper-based products can be sustained even in the medium term. Further, it is by no means obvious, at a time when other agencies have taken on – albeit imperfectly – the task of describing electronic resources, that the national library is the only appropriate focus for this work. While the production of the national bibliography of 'traditional' materials may be a continuing and necessary role (at least that was the conclusion of a seminar reported by Cunningham (1997)), it is questionable whether that will be enough to justify the investment. Even the work of most national libraries of acting as 'honest broker' in the development of appropriate standards is under threat as the globalization of MARC, and standardization on USMARC for most purposes, continues on the one hand, while the standardization process for descriptions of non-print materials is pursued in other fora such as the Digital Object Identifier Foundation (see Chapter 8).

Because the volume of publication – even counting only the traditional media – continues to grow, national libraries continue to face the problem of how to cope with all the material they receive and select. For them the option of withdrawing material and discarding it is rarely open – they provide national back-up services and other libraries treat them as the libraries of last resort. As a result it is not surprising that the later decades of the 20th century saw a spate of building – the British Library finally opened its new premises at St Pancras, the Kongelige Bibliotek occupied its new building in Copenhagen, the National Diet Library's new building project started in Japan, and Die Deutsche Bibliothek opened in Frankfurt-am-Main. At the opening ceremony for the last of these, Helmut Kohl, then German Chancellor, said (1997):

> Libraries have always been a kind of memory for mankind. If the human race did not collect and organise knowledge it would forever lack history. For more than 3,000 years the great libraries have been the manifestation and a basic component of advanced civilizations . . . Libraries have always been the focal point of national identity as well. They provide a polyphonic sounding board for language. Here culture lives in the rhythm of the past and the beat of the present day. Here we can sense the melody of the future.

This brings us to an important conclusion from the perspective of the national library. In terms of function – leaving aside medium and content – the national

library provides a cultural focal point that transcends the present and reaches into the past, in terms of the 'stuff' it secures, and into the future, in terms of transmitting human knowledge to future generations. It fulfils these roles by collecting a representative, although never comprehensive, set of records and by ensuring that they are organized and preserved so as to remain of use into the future. A national library that fails to build the representative collection or fails to secure its permanence has failed in its duty.

Looking at the role of national libraries from a global perspective, it is generally accepted that they cannot attempt comprehensiveness in their acquisitions and holdings of material from other countries. IFLA's Universal Availability of Publications (UAP) programme is founded on the principle that where a library requires a copy of an item published in another country it should be able to rely on the comprehensiveness of the collections there. One of the dangers of this approach, however, is that this encouragement of unique comprehensive collections risks catastrophic loss should there be a disaster in any participating country. There does not, however, appear to be any immediate solution to this danger, since it has proved impossible to organize long-term commitment to the acquisition and preservation of comprehensive, non-indigenous collections on a significant scale. As Line (1999) remarks, 'A possible solution is to organize "external" collecting of duplicates at an international level, by allocating to developed countries different regions or countries of the world. . . . Any such scheme would have to be voluntary and would almost certainly fade out after a few years.'

Of course, national libraries cannot shoulder all of even their national responsibilities on their own, and they are joined by major academic and other libraries in a cooperative endeavour that builds on specialisms that have developed over the centuries. The concept of a 'Distributed National Collection' has been put forward recently by the Research Support Libraries Programme (RSLP) as a way of formalizing relationships between such collections in the UK.

However, this highly laudable effort still leaves unanswered the question of how the role of national libraries, or national schemes of cooperation, should be continued in an era when the memory of mankind is no longer principally set down as print on paper. Collections of the types that are described above have always been principally concerned with printed books and printed journals. National libraries have struggled, with varying degrees of success, to capture, index, store and maintain other media – the NEWSPLAN Projects, originally funded by the British Library's then Research and Development Department, made a valiant effort to maintain collections of newspapers, but collections of images, of video, of audio and of other non-print media are much less comprehensive than those of print. Perhaps this did not matter too much when other

agencies (such as the Hulton Getty Picture Library, especially when it was owned by the BBC) were contributing at least an attempt at representative collections. But what are we to do in the electronic era, when not only are the records of mankind's knowledge in non-print format, but many of them are dynamic and transitory? How should the role of the national library be redefined?

The view from the sectors 2: Academic libraries

Academic libraries emerged with the modern university during the early Middle Ages, but were a somewhat neglected part of their parent institutions until at least the 18th century and in many cases much later. The medieval college or university library was small and grew very slowly. Cambridge University Library had only 122 volumes in 1424, but the number was starting to grow – by copying, by purchase, but most importantly by donations and gifts. Scholars would travel from library to library to consult rare and valuable manuscripts, as indeed they still do. This sense of the academic library's role as a centre for scholarly research has persisted to the present day – Lyman, for example, writes:

> Research libraries are homes for scholarly communities. . . . Since the turn of the twentieth century, research libraries have provided a sense of order for scholarly research – a center for teaching and research that is local and yet extends across time and even national boundaries.   (Lyman, 1997)

Over 50 years ago Rider suggested a similar role, describing the research library as:

> A vast aggregation of all sorts of book and periodical and manuscript materials, assembled together, not for sustained, or for pleasurable, reading . . . but for 'research', that is, for the purposes of scholarly investigation. Research libraries are, primarily, the stored-up knowledge of the race, warehouses of fact and surmise.

Writing in 1964, Clapp observed that academic libraries do not rely solely on their own collections, even if in times past it tended to be the readers rather than the books that moved from place to place:

> . . . from earliest times two principles have controlled the growth of libraries – the principle of local self-sufficiency and the principle of sharing the resources. . . . [Their role is] to enable inquirers to identify library materials relevant to their inquiries and to supply them with copies of these materials for their use.

But he noted the impossibility of any academic library achieving self-sufficiency and suggested that the solution might lie in:

> the assignment of specific responsibility for certain conspicuous subjects to particular libraries, each of which would be obliged to acquire comprehensively in the subject, organize and publish its bibliography, and render a nationwide (or perhaps even international) backstopping lending or photocopy service in the subject.

Such ideas were taken up from time to time. For example, in the 1960s many British university libraries accepted limited responsibility for a particular range of subjects. In this way, each academic library would contribute to the library wealth of the nation. However, such schemes have fallen out of favour, largely for economic reasons. First, when budgets became tight each library needed to retain the flexibility to manage its acquisitions budgets as it saw fit, and secondly the overriding concern of each library had to be to serve its parent institution, reflecting its academic and in particular its research strengths.

An enduring metaphor for the academic library is that it is the 'heart of the university'. The exact origins of this phrase are unclear, although Grimes (1998) suggests that it was used first by the then President of Harvard University, Charles William Eliot, who was in that post from 1869 to 1909. The image was picked up in the UK and used in various reports, including the influential Parry Report of 1967 (University Grants Committee, 1967). However, as Grimes points out, the metaphor has been used loosely and with little evidence that it reflects institutional realities:

> The metaphor implies that the academic library is of unparalleled importance. Despite its persistence for more than one hundred years, there is a considerable distance between the relationship it implies and institutional opinion and practice. Evidence of this difference is found in a number of areas. . . . Students and faculty alike fail to involve library resources and services in regular learning and instruction, turning to the library primarily as an undergraduate study hall or reserve book room. . . . National initiatives . . . fail to mention, much less to plan, improvement of library resources. . . . [There is] a disheartening decrease in academic library share of institutional funding . . . they remain, for the most part, on the periphery of decision-making and innovative processes . . . librarians are often not involved in information policy development. . . . In all, the 'library is the heart of the university' metaphor leads librarians and academics to erroneous conclusions about the real relationships between the library and the university.

Many other commentaries on the academic library as the centre of scholarly activity neglect the fact that for most university researchers such notions simply

do not reflect reality, if they ever did. It is true that scholars in the humanities need to access physical collections that contain original objects – manuscripts, incunabula and the like – but the same is certainly not true in the sciences, in engineering, in professional disciplines and in many of the social sciences. In fact the proportion of the scholarly population that relies on libraries for its raw material – in the sense outlined above – is actually quite small. Many scholars in these latter disciplines place a far higher priority on immediacy – on access to the very latest results – and they are developing their own mechanisms to achieve this.

First, e-print archives have mushroomed in popularity in recent years. The tradition of exchanging pre-prints has existed in many of the sciences for a long time – it can be regarded as the foundation of the scientific journal, since the original *Le Journal des savants* in France and the *Philosophical Transactions of the Royal Society* in the UK were created (in 1665) as a means of circulating 'letters' containing scientific results among the research community. More recently the pre-print has been used to counter the problems of long publication lead times in traditional print publications, and such usage is starting to expand not only in quantity but to embrace 'final' versions of papers including peer-reviewed contributions. The recent adoption of the Sante Fe Convention provides a standards-based framework for this expansion and more widespread adoption of these approaches (see Chapter 9).

These developments call into question the long-term future of the academic journal. To quote Ginsparg (1997), 'it is difficult to imagine how the current model of funding publishing companies through research libraries . . . can possibly persist in the long term'.

Secondly, a great deal of vital information is simply not published – it appears in what librarians would call the 'grey literature'. This includes reports and papers produced while projects are in progress and, perhaps most important of all, conversational transcripts. For example, most of the information exchange that takes place in major international research projects is now conducted by e-mail, either privately within the research team or using closed or open discussion lists. The mechanisms to facilitate, organize and maintain these media are virtually uninfluenced by and untouched by libraries. Even though many scholars still recognize the current importance of the traditional library and a few recognize that even when they do not visit the physical building, they still benefit greatly from its services – Appiah (1997), for example, remarks 'the library I never go to is already one of the most important places in my life' – in fact they are inventing their own equivalent of the 'library'.

However, important as even this issue is, there is a more important one still. The massification of higher education has led in recent years to much greater prominence being given to the academic library's role in supporting learning

and teaching. It is worth reviewing the events of the last few decades to explore how this has come about.

In the UK, the 1963 Robbins Report (Committee on Higher Education, 1963) set the stage with its mould-breaking statement of principle: 'higher education opportunities should be available to all those who are qualified by ability and attainment to pursue them and who wish to do so'. Robbins recommended massive expansion: the beginning of the end of higher education for the elite and the start of mass higher education. As a result new universities were founded, colleges of advanced technology turned into universities, the Open University created and, before the end of the 1960s, polytechnics established as the second half of a binary higher education system. By the mid-1990s the system had been transformed: in 1963 there were only 120,000 students in UK higher education, by 1997 there were 1.6 million.

A similar expansion had occurred somewhat earlier in the USA, as Osburn (1997) has noted:

> The Industrial Revolution made it clear that knowledge and education presented an avenue to advancement for those not satisfied with the lot of the assembly line worker. Education became the doorway to options for one's future. The general public in America began to see higher education as useful – thus breaking with European tradition then – and, to varying degrees, this vision has significantly influenced colleges and universities ever since. . . . Unprecedented numbers of those who once would not reasonably have aspired to higher learning and to a place among the professions were attracted to, and accommodated by, the universities.

Back in the UK, the Follett Committee (Higher Education Funding Council for England, Scottish Higher Education Funding Council, Higher Education Funding Council for Wales and the Department of Education for Northern Ireland, 1993), set up to examine the impacts of this massive expansion on academic libraries and to recommend solutions, saw the future partly in terms of traditional services – for example recommending funding for expansion of buildings – and partly in terms of new services delivered through information and communications technologies (ICTs). It also set in train strategic thinking that has enabled libraries to take an institutional lead in some areas, for example in the development of broad, cross-organizational information strategies.

The UK higher education Electronic Libraries Programme (eLib), funded as a result of the Follett Report's IT-related recommendations, has been highly significant. A summative evaluation of Phases 1 and 2 or the three-phase programme (ESYS, 2000) remarked:

In 1993 it might have been possible to dismiss the impact of electronic information services on libraries as marginal. This was no longer the case by the end of 1998 by which time the impact on many areas, including the concept of universities themselves, could not be ignored.

eLib was structured to address what in 1993 were seen to be the key areas for academic library service development, a view that was largely vindicated by subsequent developments. The major strands of work were:

- electronic document and article delivery
- electronic journals
- on-demand publishing
- access to network resources
- training and awareness.

In Phase 3, attention was directed towards hybrid libraries, clumps and preservation of digital objects; these issues are discussed further in Chapters 5 and 9. Alongside this research and development, the establishment of national agreements enabling all members of UK higher education institutions to access a large range of major datasets, based on the all-important 'free at the point of use' principle, ushered in an era of real resource-sharing and cooperation. At the same time, evidence from statistical returns and other sources demonstrates a continuing high level of demand from students for traditional materials: user-satisfaction surveys continue to produce demands for 'more books'.

Looking at the broader context, a major review of higher education in the UK, the Dearing Review (The National Committee of Inquiry into Higher Education, 1997), had little short-term impact on libraries but considerable longer-term significance. The changes it recommended had been straws in the wind for some time, but some of the consequences can be seen to have been the following:

- A marked shift in the relationships between students and universities, arising partly because of the introduction of fees – already common almost everywhere else in the world – and partly because uncertainties in the job market have made students more aware of the need to obtain good qualifications. For libraries this change in relationship could be highly significant as students, seeing themselves as paying customers, demand services delivered to high standards and will not be put off with second best.
- Encouragement for institutions to explore the use of ICTs in learning and teaching more vigorously, including distance learning. The ways in which

such learning can be supported by libraries remain under-researched and underdeveloped.

- An insistence that teachers in higher education should be qualified to teach, which should include their having a clearer understanding of pedagogical issues and a commitment to excellence in delivering learning. This may well trickle through to academic library staff – if they are able to accept the challenge.
- Yet more emphasis on quality assurance of learning, teaching and research. For some years UK university libraries have been subject to external assessment as part of subject-based teaching quality-assurance processes and it is to be expected that this will continue. Importantly the context of such assessment is evidence of the contribution that the library makes to learning rather than an abstract assessment against, for example, library collection or service standards.

The major questions raised by these issues relate to the academic library's role in learning and teaching processes. For all the above reasons, at the start of the 21st century, academic libraries need to explore service developments to support a series of new scenarios. Briefly these can be characterized as:

- new publication and scholarly communication scenarios, such as e-print archives, which may bypass the library
- ever more intensive use of digital resources, but with less obvious (ie both more hidden and less crucial) roles for libraries in delivering these resources
- increasingly heterogeneous student populations, including many mature students who are demanding of library services in ways that students progressing direct from school have not been
- continuing high demand from students for traditional resources, ie books
- modes of study, including ICT-based and distance learning, with which libraries have had little involvement in the past
- ever-reducing levels of resourcing, particularly in staffing, leading to enormous pressures on individual staff and a severe challenge to management.

The role that academic libraries will play in the future is thus far from clear. They retain institutional expertise in information organization even if the recognition of this expertise is patchy. In the UK they have come through a decade of change in remarkably good shape, and university librarians have earned the respect of their institutional leaders, not least for their ability to accept and indeed lead change. Their legacy collections are important and recognized as such, again with programmes like the Research Support Libraries Programme (RSLP) providing national recognition and resources. The inte-

gration of their services into learning and teaching provides perhaps the greatest immediate challenge, alongside the possible loss of large numbers of researchers as direct users as alternative patterns of scholarly communication emerge.

The view from the sectors 3: Public libraries

Public libraries have a proud heritage. In Britain the key event in the development of public library services was the 1849 report of the Select Committee on Public Libraries. The Committee took evidence from a wide range of interests, although it is notable that, as Murison (1971) has pointed out, many of the proponents of public libraries were concerned more with social control than with the development of individuals' potential or the enhancement of their leisure: 'Where witnesses [to the Select Committee] approved the need for the public library they almost unanimously showed themselves to be concerned with its effect as a counter-agent to evils rather than as a positive force for educational or recreational benefit.' Typical was James Buckingham, Member of Parliament for Sheffield, whose hope was that public libraries would 'draw off, by innocent pleasurable recreation and instruction, all who can be thus weaned from habits of drinking, and in whom those habits may not be so deeply rooted as to resist all attempts at this moral method of cure' (Murison, 1971). Public libraries, funded from local authority rates, opened in many towns and cities in the following half-century. The system developed slowly, although the 1919 establishment of county libraries was significant in raising standards and, of course, Andrew Carnegie was highly influential in providing funding for buildings – by the time of his death over half the library authorities in Britain had Carnegie libraries.

By the second half of the 20th century there was general agreement around the proposition that the public library fulfilled three interconnected roles: education, information and entertainment. It enabled its users to undertake informal learning as well as providing a place for study; it provided access to organized sources of information on all subjects; and it provided entertainment, primarily through lending fiction. Within these roles libraries developed all manner of specific services: children's libraries, business information services, music libraries, audio and video collections, even toy libraries and at least one example of a pet lending library. But as budgetary cuts started to bite, and the legacy of Carnegie's buildings started to show its age, it became apparent first that public libraries were struggling to define what this tripartite role really meant in an age of mass communication and mass formal education, and secondly that while the potential roles they could fulfil were almost numberless,

there was little guidance on how they should prioritize their activities so as to be good at doing a limited range of things rather than doing everything poorly.

In recent years there has been a number of attempts to define the role of the public library more precisely. It is interesting that users themselves tend to take a conservative view and to see the public library in quite mechanistic terms. During the recent VITAL research project at CERLIM, public library users were asked to state their main reason for using the library. Interestingly, even in libraries with relatively well-developed IT facilities, the answers were over-whelmingly 'to borrow books'.

Policy-level studies have, of course, delved much more deeply into the role of the public library and the contribution it makes to society. For example, in 1993 the Comedia consultancy issued a report under the title *Borrowed time* which concluded that:

Public libraries are currently making an impact in five main areas of public life:

– EDUCATION Support for self-education and lifelong learning. . . . Responding to the impact of educational reform, providing space in libraries as homework centres.
– SOCIAL POLICY Acting as an entry point into the wider culture for many of Britain's ethnic minority communities . . . playing a leading part in preserving local identities . . . supporting the emotional needs of particular disadvantaged groups in local communities – providing a quiet haven or refuge in the midst of the noisy city.
– INFORMATION Providing more and more information services in a society in which individual rights and the need to know are at a premium. Yet unsure of its role in a society in which information is capital and an increasingly expensive commodity.
– CULTURAL ENRICHMENT Providing a choice of books, recorded music, videos across a range of interests; acting as an entry point for children into liter-acy and "the book of life", story telling, after school activities, offering a home to art exhibitions.
– ECONOMIC DEVELOPMENT Libraries play a role in developing local busi-ness information services and in a wider context, act as a focal point in the town centre mixed economy where retailing alone cannot sustain liveliness and vital-ity.

In 1995 UNESCO issued its *Public library manifesto* (IFLA, 1995) which stated that:

The public library, the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social groups.

The UK Audit Commission's 1997 report *Due for renewal* (Audit Commission, 1997) stated that:

(Public) libraries find themselves tackling needs in a number of separate areas:

- recreation and culture (for example, by lending books to people to read for plea-sure)
- learning (for example, by making study materials available for reference and loan)
- social welfare (e.g. by taking materials to housebound people, or offering a safe and warm place where people can relax)
- economic development (e.g. by providing business information or by helping individuals with training and jobseeking).

Also in 1997 there was a response from government to a review of the public library service carried out by Aslib two years earlier. *Reading the future* (Department of National Heritage, 1997) saw ICTs as a means of restoring public libraries' importance in society, but offered little hard advice and even less in the way of resources. In any case, the government that had produced it was about to be defeated in a general election.

The new government received a much more influential source of advice with the publication in mid-1997 of *New Library: The people's network* by the Library and Information Commission, arguing 'for the transformation of libraries and what they do; it makes the case for re-equipping them and reskilling their staff so that they can continue to fulfil their widely valued role as intermediary, guide, interpreter and referral point – but now helping smooth the path to the technological future'. Its core recommendation was for the establishment of

a UK-wide information network made available through (public) libraries and implemented on the basis of a high-specification central core.

The network was to be known as 'the people's network', a clever piece of mar-keting since the new government was laying claim to be 'the people's' cham-pion of virtually everything. The *New Library* report made five distinct claims for the new libraries:

- They would be agents to enable people of all ages to acquire new skills, use information creatively and 'improve the quality of their lives'.
- They would be integrated parts of the national educational system – and hence it was not long before even government ministers were referring to them as 'street-corner universities'.
- They would be truly inclusive, being 'open and accessible to all' and offering access to both print and online resources.
- They would be 'at the hub of the community', offering leisure and cultural opportunities and making available information about every aspect of life.
- They would provide access to official and government information so as to enable people to become more involved in the democratic process.

These are huge claims, but they stand in the tradition of the public library as an open, accessible, non-threatening resource that is closely linked into and a part of its local community. One aspect of public libraries that these definitions fail to bring out, however, is the way they differentiate their services among their client groups. One example is the mobile library or bookmobile, which enables a basic library service to be extended into rural areas and to people who would be unable or unwilling to travel to the main branch. Even more obviously, the children's library service offers opportunities for personal development through instilling a love of books and reading from an early age:

> Libraries, both in schools and in public libraries, contribute to children's leisure needs as well as to their intellectual, emotional, social and educational and language development. The public library fulfils a complementary social function through its programmes of storyhours and activities, providing a bright, welcoming, attractive and safe place for children to browse, to read, to study, to meet other children.
>
> (Elkin, 1998)

The same author later reported on a major study of children's use of libraries and pointed to the benefits they bestow (Elkin, 2000):

> *Quality of life*: 'Libraries are a good thing, and people will tell you that they are . . . [even if] you can't measure the effects. We have to accept that certain things are valuable.'
>
> *Citizenship*: 'We offer [children] the library membership card which belongs to them, the first thing they own for themselves. . . . Library membership creates a sense of belonging and citizenship at an early age.'
>
> *Social development*: 'A social space in a pretty desolate area. . . . The security to meet their friends on neutral, well-regulated territory.'

Social inclusion: 'Libraries can benefit children in fostering their socialization skills . . . we won't tolerate any discrimination within our libraries.'

A welcoming environment: 'We're providing a context, which is non-threatening, non-judgemental.'

Educational: (quoting Isaac Asimov) 'My real education, the superstructure, the details, the true architecture, I got out of the public library.'

Support for literacy: 'Fostering recreational reading and . . . instilling the desire to read.'

Reading development: 'The trick of reading, because it's fun, is what they learn from libraries.'

Support for parents: 'Librarians not only read to children but model book-sharing for parents'.

However, it is apparent that public libraries often lack a clear focus for their activities and priorities. In recent years they have become enthusiasts for lifelong learning, but they are reluctant to give up other roles. Kinnell and Sturges (1996) comment:

> At the heart of the issues surrounding public libraries, from their inception up to the present day, has been an imprecise formal definition of their role. Should they be a medium of education and instruction, an information source, a cultural focus for communities, or an addition to people's leisure pursuits through the lending of fiction? . . . There is so much that (public) libraries do and so much that they could do.

Perhaps the most useful conclusion is that public libraries continually try to contextualize information usage – using 'information' in the wide sense to include works of the imagination – within the concerns of their local communities, reinterpreting needs in terms of international, national, regional and local priorities. In the past they have proved flexible in response to external change; the key question may be whether they can change quickly enough to remain relevant to the emerging information society.

The view from the sectors 4: School libraries

Until fairly recently, even the best school libraries were fairly limited affairs, with a very few exceptions. Mainwood, writing nearly 30 years ago with perhaps a touch of hyperbole commented:

> Perhaps the most significant development in the post-war years in Britain has been the extension of school library provision to pupils of all ranges of age and ability. Where, hitherto, only the senior pupils pursuing academic courses in grammar

schools had access to reasonable library facilities in their schools – and even these facilities tended to range from large and comprehensive collections in well-endowed schools, to the woefully inadequate – we can now expect to find attractive and well produced books suitably displayed and accessible to children from the age when they first attend school, and providing for all types of interest and ability.

(Mainwood, 1972)

In the USA an event of particular importance was the issuing in 1961 of a policy statement by the chief officers of school districts, recognizing school libraries as 'intrinsic to the purposes of the school and . . . a basic service for which the board of education is responsible' (Council of Chief State School Officers, 1961). From this period there emerged a consensus on the importance of school libraries and a series of standards and guidelines were issued. By the early 1970s, Gaver (1972) was reporting:

The present situation, however, is quite different from the time a generation ago when only the exceptional school had a library with a qualified staff, an excellent collection of materials, and an effective program of services. Today, in American schools and communities, it is the generally accepted goal to provide both public library and school library service, although the achievement of that goal may not yet be universally recognized.

The reasons for this success were various – Mainwood (1972) lists them as:

the shift of emphasis from 'teaching' to 'learning', from class instruction to individual exploration, from the uniformity of sets of textbooks to the diversity of many different books of interest and information.

Much, however, remained to be done:

In the past, the school library has tended to be the special . . . concern of the English department . . . there is considerable need for the use of the resources of the library to form a normal part of the teaching of other subjects. Closely linked with this . . . is the whole range of possibilities which are being opened up by the current interest in educational technology, group teaching, curriculum development projects, and new teaching methods.

After another 20 years had elapsed it had become clear that this central, cross-curricular place was broadly recognized and indeed was being widened beyond the curriculum itself. In 1986 an official UK report proclaimed that the school library should be the 'foundation of the curriculum' (Library and Information

Services Council, 1986) and in the UK Library Association's 1992 *Guidelines for school libraries* (Kinnell, 1992) the purpose of school libraries is described as 'wide-ranging. . . . They have a central place in providing a range of information resources in support of the curriculum and of pupils' personal and social development.' Furthermore, 'school library resource centres have been recognized as part of the national information network.' More fundamentally still, 'the purpose of the school library is to facilitate teaching and learning . . . the emphasis on learning to learn, and learning to handle information, so evident in modern curricula, brings library and information services into the centre of the learning process.'

So, the modern view would be that the school library is:

> . . . not just a physical space in which various media are stored; it is a concept, a tangible expression of the school's ethos and values, its approaches to equality of opportunity, the moral and spiritual development of children and young people and its educational purposes. It has the potential to introduce young people to the world of literature and information and to enable them to develop skills which will enhance their lives as adults.   (Tilke, 1998)

This concept takes the focus of the school library away from the bricks and mortar, and away from the information artefacts – books, video and audio tapes, learning packs and the like – to the issue of how information is used by children in the modern school. One study observed the following:

> A theme that emerged time and again was that information is gathered for a purpose, to solve some sort of information problem. Children's understanding of that purpose is often a function of teacher instruction and this influences their interpretation of the task and all facets of their information problem solving attitudes and actions. . . . Children need to develop an understanding of the information world that promotes choice among resources, builds flexibility in searching and encourages critical thinking about information and the overall information problem solving process.   (Moore, 1998)

Moore gave a rather nice example of this issue. Some eight- and nine-year-old boys had been set the task of describing an invention: 'Evaluating information is difficult for children . . . there was a major conceptual problem for one of the boys. He could not imagine things working without electricity! It was impossible to see where one might insert batteries into a sundial or a water clock, and clockwork mechanisms were not shown in detail.' Recognizing an information need was an underdeveloped skill.

For school-age children an emphasis has therefore emerged on the need to develop broad information skills. But what is often forgotten is that information skills can only be built on the foundation of reading skills: that the child who not only *can* read but *enjoys* reading, the child who is a *voracious* reader, has an enormous head-start on others regardless of the medium in which information appears. McGonagle (1998) writes, 'For our children to take their place in today's world, being technically literate is not enough. They need to develop an enthusiasm for books, reading and acquiring information. Children need to learn to make fully informed decisions, so that they can influence their own destinies. The most effective way that this can be achieved is by having a central resource of books and other information material, so that all children and staff can have access to it – in other words, a school library.'

Royce (1998) goes further:

> Able users of information develop strategies for finding, choosing and using information. Their strategies are built on three skills areas: reading, information-handling, and technical. The skills are interdependent and often practiced simultaneously; their boundaries merge and overlap. . . . It all comes back to reading, and thus to the twin needs of getting readers hooked early in life, and that of providing plenty of practice, reading for information as well as reading for pleasure. You *can* survive in today's world, even if you can type with only one or two fingers. You *can* survive without ever using keyboard shortcuts or realising the full potential of your software. But even in a world of pictograms and icons, of sounds and pictures and Internet and intranets, you are going to find survival both difficult and expensive if your reading skills are poorly developed.

Yet although much is written about the embedding of the library – as often as not called the learning resource centre – in the curriculum, the perceptions of school pupils remain surprisingly traditional. Spreadbury and Spiller (1999) report that, in their survey of the users of school libraries:

> . . . nearly half of all pupils used the library 'to study', and 39% 'to borrow books'. Beyond these, there was a range of other activities, with in-house use of printed materials and use of the computers the most popular. . . . asked how they would describe the school library, by far the largest percentage responded to the prompt 'A quiet place where I can concentrate and do my work' – though there was much discussion of just how quiet a library should be. When asked what improvements they wanted in the library, 20% said 'more tables and desks'. . . . Asked what they did when they had trouble finding material, two thirds of the pupils replied 'ask the librarian' – many more than used the catalogue or browsed the shelves. . . . An encouraging finding was that staff help was found to be useful by 85% of pupils

'most or all of the time' – a really excellent response given the bluntness of children in responding to questions of this type.

The school library, then, even when re-named and clearly embedded within a 'whole school' paradigm, has retained its core emphasis on the provision of access to information resources, a role valued by pupils as well as teachers. It is notable that the library has become the location of choice in most schools for IT access, providing a shared resource that is highly valued. The development and exploitation of information content for schools has been patchy, although the National Grid for Learning will, if it is properly implemented, address this issue in what is in effect a large-scale, cooperative endeavour. Whether significant library expertise will be drawn into this development remains to be seen.

The view from the sectors 5: Workplace libraries

Generalizing about workplace (or, as they used to be known, 'special') libraries is fraught with difficulties. The sector covered is immense – everything from information services in high technology industries through libraries serving the health service to advisory services in the voluntary sector. They differ enormously in scope and size – from what used to be called the one-man band (when translated into 'one-person band' the analogy somehow loses its edge) to multinational services employing hundreds. The terminology itself is difficult: 'special' has survived for many years when it really meant, if anything, 'specialized'; 'workplace' seems rather insulting to the other sectors (are they not also 'workplaces'?); while many object to the term 'library' on the basis that they operate an information service regardless of physical location and without physical objects such as books.

Again, it is useful to look at the way these services have developed over time. Although the origins of the workplace library can be traced back a very long way (perhaps the medieval alchemist poring over his secret tomes might form an appropriate genesis), it was only during the 20th century that a recognizable sector developed. The creation in the UK of Aslib (then an acronym for the *Association of Special Libraries and Information Bureaux*) in the 1920s drew on American experience, where a Special Libraries Association had been founded even earlier, and proved a seminal event. Hutton (1945), one of the founders, commented:

> We had all for long been interested in the improvement of provincial technical library resources and had been impressed by special library developments in the United States . . . we had prominently in mind two vital problems which faced industrial research associations . . . how to make as complete as possible a survey of

information on some special subject from world-wide sources, and how to bring the more important results of the survey to the attention of members of the organization.

From this comment it can be seen that special libraries concerned themselves not only with collecting information objects and organizing them, but saw part of their role as analysing the information, creating digests of key information and disseminating these to their clientele. These concerns have continued, but it is worth also reflecting on two trends that have greatly affected workplace libraries in recent years. From the health sector has come the demand for 'evidence-based practice'; from the commercial sector the emphasis is on 'knowledge management'. Both have significant implications for library services.

Evidence-based practice

Evidence-based medicine is one of those concepts that, with hindsight, appears glaringly obvious – the idea that before embarking on a medical procedure or other course of treatment, a doctor should have weighed all the available evidence and, if challenged, should be able to demonstrate why one procedure was preferred to other possibilities. The issue has been brought into sharp focus by allegations of malpractice or ill-informed practice. The size of awards where liability is proved provides a particularly strong motivation for health professionals to take evidence-gathering seriously.

Evidence may be acquired from a number of sources, but the medical library clearly has an important role to play. It is interesting, for example, that one of the key services being rolled out by the UK's National electronic Library for Health (NeLH) is The Cochrane Library, part of an international collaboration to identify significant published information on health care, to arrange for its expert appraisal and to produce reviews and summaries that can be used by clinical practitioners. The need for services like Cochrane were demonstrated by observation of the difficulties encountered in the health field where:

- even expert searching of well-designed databases like Medline cannot guarantee to find all the relevant information
- it is not immediately clear how much reliance can be placed on many of the research studies reported, which may, for example, be based on small sample sizes
- there is difficulty in determining whether reported results are suffering from bias, since so much funding of medical research originates with pharmaceutical companies

- the practitioner is often faced with information overload and has no easy way to sift out the relevant from the irrelevant.

Each of these issues is familiar to librarians, but their identification in the health library context provides some useful pointers to how libraries' roles, at least in this sector, might possibly develop. For example, what health practitioners clearly need are:

- better and more reliable search tools
- expert evaluation of published work, going beyond standard peer review (which merely states an opinion that it is worth publishing)
- additional information on the source and background to any published report
- help to handle large volumes of data.

These issues are, of course, not confined to health practitioners even though they have become prominent in that context. The *British Medical Journal*'s definition of evidence-based medicine is surely capable of much wider application: 'the conscientious, explicit, and judicious use of current best evidence in making decisions' (British Medical Journal, 1996).

Knowledge management

The development of knowledge management provides an interesting example of convergence between library and information services and broader business practices. An increasing number of businesses are based on the exploitation of knowledge – examples include management consultancies where work on one contract needs to draw on experience gained in earlier, similar work and many dot.com companies where knowledge of customer preferences and previous transactions provides the key to future sales. So McKinsey and Co have roles defined as 'Knowledge Interrogators' while Anderson Consulting has 'Knowledge Integrators'. Hewlett-Packard has a programme called 'KnowledgeLinks' that involves a group of staff in collecting knowledge from the various divisions of the company and interpreting it for other divisions to use.

The essence of knowledge management lies in the capture and exploitation of learning, expertise and understanding as well as information. Thus a company that has learned from the experience of advising a client in, say, bringing an e-commerce company to market can gain competitive edge if it can exploit the knowledge gained to the full in the next similar contract. The knowledge that is captured and used consists not just of formal reports, but best practice

digests, 'war stories' (including those of battles that were lost) and interpreted statistical data. Subjects may include such matters as the impact of outsourcing, how production times were speeded up, improved error handling and customer relations. It is interesting that the focus during the 1980s on expert systems – software that would solve problems using the distilled experience of human experts – has given way to this new emphasis.

An issue of great importance is that knowledge management is not primarily about building IT-based knowledge systems, although many companies are benefiting from systems that permit online access to the corporate knowledge resources. However, the following comment from a Japanese perspective is pertinent (Takeuchi, 1998):

> Many American companies equate 'knowledge creation' with setting up computer databases. Professor Nonaka [Takeuchi's co-author of *The Knowledge-Creating Company*] argues that much of a company's knowledge bank has nothing to do with data, but is based on informal 'on the job' knowledge – everything from the name of a customer's secretary to the best way to deal with a truculent supplier. Many of these tidbits are stored in the brains of middle managers – exactly the people who re-engineering has replaced with computers.

An important insight from this viewpoint is that knowledge is, in essence, socially located, being invested in individuals and in groups. Because much of knowledge is tacit it is difficult to capture, store and transfer. In this view, knowledge management may be better thought of as the process of engineering conditions under which knowledge transfer and utilization happen. It could be argued, for example, that the library that creates attractive social spaces in which users chat and exchange ideas is engaging in knowledge management.

Oxbrow and Abell (1998) emphasize this idea when they argue that knowledge management is not simply a matter of identifying and codifying knowledge but just as much concerned with its effective use: 'The ultimate corporate resource has become information – the ultimate competitive advantage is the ability to use it – the sum of the two is knowledge management . . . the essence of KM is connection. The connection of people with people – enabling people to share and build on what they know, to collect information of value and make it easily and appropriately available, to ensure that people understand the value and potential of what they know.' The insight of Malhotra (1999) that knowledge management is also about 'obsoleting what you know before others obsolete it' also provides a useful warning about the volatility and rate of obsolescence of knowledge!

These analyses lead naturally to the idea of the 'intelligent enterprise' that is able to exploit knowledge both to deal with current challenges and to be effec-

tive in achieving its future strategy. Knowledge is seen as the underpinning resource that enables organizations to act intelligently, and this in turn leads to a view that at the heart of the successful organization is the ability to build relationships. These are not just supplier–customer, contractual arrangements: the view suggests that the organization should regard itself as part of a wider social system, paying due regard to the needs, views, knowledge and intelligence of all its stakeholders – customers, suppliers, employees, members of the local community, local and national government, voluntary organizations and others.

Of course, managing knowledge and enabling intelligence at the organizational level are not without their pitfalls. Many employees are reluctant to reveal or share their knowledge – after all it may represent their real value to the company. Much knowledge may be too specialized, when the issue is how to draw general conclusions from it. Knowledge may be used as a weapon instead of an asset. There are few rewards for being a good knowledge manager and thus helping others to improved performance. And, as noted above, knowledge management easily becomes subverted into IT systems development.

Abram (1998) draws some interesting and perhaps controversial conclusions about the implications of knowledge management for workplace libraries:

> . . . special librarians made a potentially disastrous error, those many years ago when we decided to position ourselves in the 'information business'. Information businesses are marked by their ability to create information, and disseminate it widely – often for a profit. Generally, special librarians do not, as part of our core mandate, create information. While we do create information about information (metadata), I believe this is a higher level calling in the knowledge continuum. . . .The plain fact is that knowledge, per se, *cannot* be managed. In fact, capturing knowledge in any form other than into a human being's brain, reduces it to mere information, or worse, data. Only the knowledge environment can be managed.

He suggests a four-fold strategy. First focusing effort on where libraries can add value by transforming their resources, whether traditional information or knowledge based, by organizing them for users. Secondly, placing emphasis on the idea of the learning organization (discussed in more detail in Chapter 6). Thirdly, providing guidance and navigation tools that enable people to put knowledge to work. Finally, taking a broad view of 'transformational librarianship' that sees the key resource as the people who adopt technology and other tools and use them to enable improved knowledge creation and management.

While it is difficult to extract generic lessons from across the whole workplace sector, the examples described above suggest that the most dynamic services are those that have succeeded in embedding the 'library' – often under a different name – in the core strategic concerns of the organization. In the best

examples, libraries have recognized the implications of an information-based economy and taken their place at the heart of the enterprise. But it must also be admitted that others have failed to secure this position, and new information and knowledge structures have emerged that have sidelined the library or made it irrelevant.

Conclusion

At this stage of the information revolution, libraries across most sectors appear to be in remarkably good heart. Each sector can contribute strengths and demonstrate signs of the regard in which it is held – whether it is the new buildings that so many national libraries have achieved, the continuing collection strengths and cooperative endeavours of research libraries, the leadership of public libraries or the innovative practices and paradigms characterizing workplace libraries. In mapping the library of the future each sector offers intriguing and useful insights into ways forward.

What is more difficult to gauge is what is happening beneath the surface of these 'fanfare' stories. Yes, national libraries have impressive new buildings, but are they providing national information policy leadership suitable for an e-world? Are academic libraries as a whole positioning themselves to operate within new models of scholarly communication and to integrate resources in learning? Are school libraries becoming IT access centres providing glitzy access to impoverished resources? Are the bulk of workplace libraries simply disappearing and information or knowledge handling, as it enters mainstream business practice, proving that such entities are no longer appropriate? Are the majority of public libraries, the branches in every suburb and village, really engaged in the 'new library' process? These are the great unknowns.