

## **The International Dimensions of Digital Science and Scholarship: Aspirations of the British Library in Serving the International Scientific and Scholarly Communities**

Lynne Brindley, Chief Executive of the British Library

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It is a real privilege to be addressing this distinguished gathering this morning—or this afternoon, as it is here in London. I wish very much that I was able to be with you in person for what I know will be a thought-provoking few days but, given the topic of this meeting, I was struck by the aptness of our session this morning: new technologies allowing someone in London to address a group of international experts, seated in Ottawa on the subject of international science and digital scholarship. Even 10 years ago, such a thing would have been unimaginable and there is no doubt that the digital revolution has transformed the landscape we all operate within; bringing us closer together and presenting new opportunities and new challenges in the process. And it is some of these I would like to explore today.

### **Contextual Introduction**

Research is internationally competitive and our best universities jockey for the best research talent at all levels and in all disciplines. Arguably what has made research libraries great in the past will not alone make them great in the digital environment of today and the rapidly evolving information context in this early part of the 21st century. We see a picture of ever more rapid innovation, mostly happening outside libraries and driven from the commercial sector; a picture of confusion and contradiction in the range of business models that are emerging and being experimented with; and new demands from discerning and empowered users. Such a challenge is an exciting opportunity for LIS to play new roles and define a new future. There is, in any case, no choice but to change, and change quickly if we wish to remain relevant for the future. The challenge for libraries in the 21st century, as now only one part of a great diversity of alternatives, is to find new ways to add value and remain relevant in this rapidly changing, confusing and competitive environment. While the distant future for libraries is not clear, it is timely for libraries to challenge some historic assumptions and ask some fundamental strategic questions.

Technology is turning on its head our assumptions about our value; it is challenging the roles of all accepted players; and it is enabling increasingly promiscuous users with different and higher needs to have a much wider choice to fit their digital lifestyles.

All of this of course will be well known and familiar territory to you in your own institutions.

To help unpick some of the opportunities and methodologies emerging for international scholarship in the digital world, I would like to look at some specific projects being undertaken at the British Library and identify broader lessons and wider possibilities for us all as we look ahead.

### **British Library: International Profile and Activities**

The British Library is located in a global, multi-cultural city, with a mission and funding to make a major contribution to the national economy and to the social and cultural enrichment of Britain's citizens. Our strap-line is 'the world's knowledge' and our vision states that 'we exist for anyone who wants to do research—for academic, personal or commercial purposes'. It was the aim of Sir Anthony Panizzi—Principal Librarian of the British Museum Library from 1856 to 1866—to make it the 'second best library in the world'—second, that is, only to the combined national libraries of each country. His policy was:

to bring together from all quarters the useful, the elegant, and the curious literature of every language; to unite with the best English library in England or the world [i.e., the BML], the best Russian library out of Russia, the best German out of Germany...and so with every language from Italian to Icelandic from Polish to Portuguese....

Our readers come from around the world and the top 15 countries of origin for readers are: 8 from Europe, the US, Canada, Israel, Australia, India, China, and Japan.

Approximately half our Web visitors, researchers and library professionals, access our site from overseas a similar pattern to that of users of the online catalogue.

The usage patterns reflect the particular historic strengths of our collections from the Middle East, Eastern Europe, South Asia and North America. Our content strategy is currently out for formal consultation (<http://www.bl.uk/about/strategic/contentstrategy.html>) and as the world changes we envisage strengthening our content acquisition, increasingly digital, from China, India, Anglophone Africa, and selectively South America. Each year we spend over £15 million (US\$28 million) on overseas purchasing, complementing the value of our UK legal deposit of c. £12 million (US\$23 million).

Our professional and scholarly co-operation has a strong international flavour. This is true of our exhibitions, our exhibition loans, representation on international professional, technical and standards bodies, conference attendance and presentations, and official visits both to and from the BL. We have memoranda of agreement with a number of national libraries, with a particular focus at present on:

**China**—where the memorandum identifies the broad scope for future collaboration between our two institutions and builds on contacts of long

standing conducted on an informal basis which have worked well for the benefit of both institutions and their users including recent collaboration together on the International Dunhuang Project.

**South Africa**—where our focus has been on knowledge transfer—including conservation, legal deposit, governance, and strategy—and where we know there is a ‘multiplier effect’ deriving from the NLSA’s leadership role in Africa.

and activity with **the National Library of Iraq**—where we have sought to assist both on reconstruction of the collections and also on the development of networks of professional support for the Director of the Iraq National Library and Archives.

We run a major international Endangered Archives Programme, with funding from the Lisbet Rausing Charitable Fund, (<http://www.bl.uk/about/policies/endangeredarch/homepage.html>) to assist researchers and repositories to rescue archives under threat and make them available to wider communities of interest, while retaining them in the region of origin. Copies are deposited at the British Library for use by scholars worldwide. The first 18 awards made in 2005 were distributed as follows:

- 8 to Asian programmes
- 4 to African programmes
- 3 to South American programmes
- 2 to Australasian programmes
- 1 to Middle Eastern programmes

From the preservation of rare periodicals in Mongolia to a pilot in Liberia to preserve and open up the presidential and national archives; from the salvage and preservation of rare music in Yunnan, China, to identifying the potential corpus of a Mapuche collection in Chile—the endangered archive programme is a significant demonstration of the benefits to international scholarship of international collaboration.

Within Europe, where of course multi-lingual issues figure strongly, TEL—The European Library (<http://www.theeuropeanlibrary.org/>) is growing in importance and the British Library is playing a central role in its development and further forthcoming EU investment in digital library developments. TEL became an operational portal service in 2004 giving researcher and ‘informed citizen’ access to 15 European national library collections and is now fast-tracking the new EU member states (seven at present) into membership. The eventual target is 45 European national libraries in membership. Membership commits each participant to maintaining the basic user interface in ‘their vernacular’ through the TEL Language Working Group and participants are encouraged to provide metadata in their own language, English and any others they can. Multilingual searching is being explored through MACS and DELOS and has been raised as an issue with Google.

## **International Digital Scholarship Projects**

Let me share with you two of our current high-profile digital scholarship projects which to my mind exemplify the potential to contribute, through collaborative activity, to changing the shape of scholarly and research activity. Both involve the digital re-uniting of physically dispersed material across continents and libraries: both have political sensitivities and involve activities well beyond simple digitisation.

### *The Codex Siniaticus Project*

<http://www.bl.uk/onlinegallery/themes/asianafricanman/codex.html>

The Codex Siniaticus is the oldest surviving bible, produced in the middle of the fourth century, and an extremely important landmark in the history of the book. The Codex was preserved for many centuries at the Monastery of Saint Catherine but now just over half of the original book survives, dispersed between the Monastery, the British Library, Leipzig University Library and the National Library of Russia in St. Petersburg. Due to the extreme age and fragility of the Codex, none of the holders of the different portions is able to allow access to the manuscript, beyond display in a glass case. We are now undertaking, with St. Catherine's, the other holders of the manuscript and leading international scholars, a major project to reproduce the entire Codex in digital form, employing cutting edge technology and advanced scholarship to achieve a virtual re-unification of the different manuscript parts. Biblical scholars in Germany and the UK are leading a new transcription of the text; multi-spectral imaging is likely to enable differentiation of different scribes and correctors of the manuscript and therefore potentially challenge the dating and accepted interpretations of biblical history; an internationally distributed TV documentary, high quality facsimile, conference and collection of scholarly essays and exhibition are all planned.

### *The International Dunhuang Project*

<http://idp.bl.uk/>

The International Dunhuang Project has been running for over ten years and represents collaboration between the British Library and libraries in China, Russia, Japan and France. It focuses around the manuscripts, paintings, textiles and other artefacts dating from 100 BC – AD1200 found in the Library Cave at Dunhuang and at numerous other ancient Silk Road cities in the late 19th/early 20th century. The material was dispersed to museum and library collections worldwide, making access for scholars difficult. Priority has been given to conservation and cataloguing work, but digitising the manuscripts began in 1997 with the aim of bringing together collections in virtual space. In this way, Silk Road material is becoming increasingly available to scholars and the general public alike. The IDP has created an essential scholarly resource with local centres in London, Beijing, St Petersburg, Kyoto and Berlin, with Chinese, Russian, German and Japanese versions of the Web site being maintained locally as well.

## Mass Digitisation Projects

These, perhaps, are two ‘wow’ examples of the art of the possible to change the face of scholarship in the digital age. But there are many more examples, from the BL and from all of your own endeavours.

At the other end of the spectrum are initiatives to create an enormous critical mass of materials for research and scholarship. Gale’s international programme to digitise all pre-1800 texts in English, Early English Books Online is facilitating new research. With funding from the NSF and working with the University of California, Riverside, we have digitised our 18th-century newspapers and will make them available online; with funding from the UK government’s Joint Information Systems Committee we are digitising our 19th century newspapers. We are working with Microsoft on digitising out of copyright books and are starting with 19th-century English novels, a corpus which is likely to surface new leads for researchers on material long-neglected in the print world. OCR and online searching will facilitate new kinds of research, previously impossible.

As should be expected while we redefine ourselves in the digital age and develop new and more effective patterns of international working, there will be political issues, which we need to consider and tease out. For example, as some of you may be aware, Jean-Noel Jeanneney of the French National Library has raised concerns about Google’s potential influence on global culture; that the creation of an immense database of content from the United States will taint the future generation’s interpretation of history and culture, as more people rely on the Internet to learn about the world. In an article in *Le Monde* entitled “When Google Challenges Europe,” he warned of “the risk of a crushing domination by America in the definition of how future generations conceive of the world.”

While welcoming (publicly, again in *Le Monde*) the BL’s joint digitisation programme with Microsoft—since in his view it diminished the risk of a Google monopoly—nevertheless he saw the BL/Microsoft deal as an act of “anglo saxon solidarity” with a big American enterprise and, as such, counter to the close co-operation with the European national libraries who are working towards the development of the European digital library.

Our view at the BL is that it is plain we must adopt a portfolio approach to digitisation, with a range of publicly- and privately-funded initiatives. Thus we remain committed to CENL, TEL and other European initiatives, and to working collaboratively with other libraries in Europe, as well as to similar initiatives in North America.

I have used these examples—from the iconic to the large scale; from externally funded public good projects to commercially funded, subscription based programmes; from BL focussed to globally collaborative projects—to indicate the potential contribution our great libraries have to richly enhance and change the face of humanities research and scholarship

Are there general lessons and points to make? Almost certainly as libraries we can and should do more together to promote and create greater awareness of

what is available for scholars already. Almost certainly we are only at the beginnings of trans-border digital join-up of relevant parts of our collections. There is certainly a lot more scope to engage at a discipline level internationally on what projects might really make the most impact on scholarship of the 21st century and a question for discussion is how we might better do this, despite the differences in mission, funding, governance and national priorities?

### **Responding to the Needs of Researchers in the Main Disciplinary Areas— Science, Technology, Medicine; Social Sciences; Arts and Humanities**

What has been covered so far would appear to offer profound and growing opportunities in the digital space to play an increasingly critical role in underpinning 21st-century research in the humanities.

But what is equally clear is that there are very different trends in the different disciplinary areas that are suggesting different roles in STM and social sciences. This is strongly recognised in *Redefining the Library*, the British Library's strategy 2005–2008 (<http://www.bl.uk/about/strategy.html>) and our proposition in each broad area is different. To some extent this is recognised in the programme of this meeting which has later sessions on Science in the Public Interest and Copyright and Creativity in international scholarship, both implying advocacy and leadership roles for research libraries.

In STM, we have a critical role to play in the digital preservation of the record of science, and we are working closely with the Koninklijke Bibliotheek (the National Library of the Netherlands) who are leading the European task force on Permanent Access to the Records of Science. We are also working closely with peer bodies in Government and quasi-Governmental bodies in the context of the UK's 10-year science strategy on the development of a route map for e-infrastructure for research. We have a clear mandate to engage with the new forms of publishing and particularly with the open access and subject repository movement, in the development of tools for virtual communities, and to ensure join up with data repositories and the creators of e-science. There is a quite clearly a role for the national library vis-à-vis questions of quality assurance in the Web environment, in navigation, and in facilitating seamless access across repositories. In terms of the British Library's role of supporting innovation we have a particular responsibility to ensure support for those small and medium enterprises that do not have the same access to rich and deep collections of digital science as do researchers with well-funded university libraries. As national library we also have responsibilities relating to the public's understanding of science and its engagement with major issues. Arguably there are different forms of international engagement, focussed more on technology partnerships and collaboration both with public and private sector partners, e.g., bioinformatics institutes, research funders, data repositories, digital library and digital preservation experts.

In the social sciences the BL strategy is explicitly one of collaboration, particularly at national level to ensure greater join-up and exploitation of resources that are often difficult to find—so called grey literature and its migration to the Web environment. We are also key dataset providers and

archives but again our aspirations are largely UK focussed. Our strategic approach to opening up our rich resources to social science scholars is to develop small teams of disciplinary experts to expand our relationships with key partners and ensure long term join up of digital preservation efforts.

### **Reaching out to Scientists and Scholars to Advise on the British Library's Agenda**

The British Library does of course have a range of formal and informal mechanisms to connect it to scholars. As has already been mentioned, its international relationships with libraries and international professional bodies, and with those engaged in digital library developments is already extensive. Being a national library, rather than a research library with a focussed university constituency, however, makes direct connection with scholars a more complex business.

Our formal mechanisms include an Advisory Council that has representatives of major disciplines who as part of their role assist us in reaching out to and networking with discipline experts. We engage directly with UK Research Councils (who fund much of UK research activity and are discipline based), and the Wellcome Trust, and with the major learned and scholarly societies, such as the Royal Society and the British Academy. Through these contacts we are enabled to reach groups of academics in different disciplines and can tap both formally and informally into their expertise. In addition we work jointly on projects with a number of universities and their academics.

In a significant development this spring, Library was awarded 'Academic Analogue status' by the Arts and Humanities Research Council (AHRC). This means that the Library is now eligible to apply to all of the AHRC's responsive-mode schemes, where previously bids had to be led by higher education institutions. With this no longer the case the Library can tailor future bids directly to its own strategic requirements, while continuing our emphasis on partnership and collaboration with other academic bodies. The Library is working towards achieving similar Academic Analogue status with the Economic and Social Research Council to take forward similar benefits in the social sciences. The concept of the British Library as analogue has huge possibilities for the way in which we can take forward and support scholarship.

At the British Library our direct scholarly engagement is primarily with the UK base of scholars, even though we recognise that the international community is the recipient and beneficiary of much of the resulting endeavour. In a recent wide-ranging report on UK-USA research collaboration and strengthening transatlantic research partnership, undertaken by Sir Gareth Roberts, encouragement has been given to the Library of Congress and the British Library to work ever more closely together to facilitate such relationships, particularly through better coordination and systematic digitisation of primary and secondary resources of interest to the humanities and social sciences, and through exchange of scholars. Initial priority is likely to be given to our respective archives of newspapers and sound recordings. This newly emerging bi-lateral model might offer a practical model of to make tangible progress.

## **Reflections for Discussion**

For the essential question for all of us is how can research libraries be most responsive to the international dimensions of scholarship when contributing to the creation and support of international digital resources? What broader lessons can we take from the experience and activities of the BL?

My first observation would be that we are all at very early stages of recognising the potential to support international digital scholarship. Our projects are exciting, ground-breaking in some cases, but also feeling their way, in terms of what can make a real difference to the highest quality research activity. A first step might well be the creation of greater international awareness of what is available, better mechanisms for feedback on the usefulness to scholars of what has been created and suggestions for future priorities

Secondly, I think that we need to recognise that research libraries are going to play very different roles depending on the needs and behaviours of different disciplines. Most of our international digital scholarship work has been focussed so far on the humanities and the opportunities afforded by opening up legacy collections, joining up dispersed collections through digital scholarship projects. Our roles in support of STM and social sciences are likely to take on very different manifestations.

Third, most of our relationships with scholars and researchers are institutionally or perhaps at best nationally joined up. Of increasing importance is the joining up of relationships with other resource providers—data services, software developers, other cultural bodies, such as archives and museums. How do we prioritise these possibilities and which will have the most impact on the quality of global research? How practical is the joining up, particularly given differences in mission, funding, governance and national priorities? What is the realistic balance between planning and opportunism?

Fourth, international efforts in digital library developments and digital preservation are well underway and our task professionally is to ensure that we share best technical and professional practice to ensure that we do not re-invent wheels, that our particular efforts contribute most appropriately to these enormous global challenges and that inter-operability is sought.

In conclusion, without boundaries of physical space, the hegemony of institutions is disrupted. The very concept of institution is downplayed in the digital world—with beneficial effect—making institutions less formidable and enabling cross-institutional study. Indeed—so far as our users are concerned, institutions are entirely irrelevant in the digital world. Our convergent interests are around a shared network space—and yet historically we have focused our efforts within our own institutional and national domains. There are opportunities for joining up our thinking about digital scholarship internationally that will significantly benefit users and require us to think much more creatively, outside our institutional and national boundaries.

As a practical starting point, two particular areas come to my mind where the ball is already rolling and where there is potential for global impact if we can coordinate our efforts effectively: the digitisation of 19th-century printed books via the Google Library Project and the digitisation of newspapers where we are making a substantial commitment through a £2m publicly-funded programme to deliver 2 million digitised pages of 19th-century newspapers (in addition to the 1 million pages of 18th-century newspapers we have already digitised under the separate Burney newspapers project. Working together across international and institutional boundaries to develop a critical mass of digitised material could provide the necessary key for expanding our roles in the digital world. Not only would the end product be of immense scholarly value, accessible to all via the Web, but in the process we would begin to untangle some of the procedural, cultural and regulatory difficulties inherent with the new possibilities digital has given us.

For instinctively—researchers, scholars, libraries, Internet surfers alike—we sense the potential digital gives us to make the world’s knowledge available to all—wherever in the world it is physically held. Our challenge is how to make this a reality. We need to be listening to our users to ensure we meet their needs. We need to be developing new skills and technologies to deliver added value to our scholarly communities—and sharing that good practice. We need to recognise the difficulties in international collaboration and work together to surmount them.