

Chapter 25

Democratizing Discovery: The Impact of Digital Culture on the Research Library



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Abstract This chapter will consider the changing nature of the work of research libraries such as the Bodleian Libraries in response to the digital shift, and the requirement to refresh, extend, and enhance our skills beyond traditional librarianship. It will consider the importance of an integrated approach to physical and digital collections and curation, and the key importance of collaboration for future digital development. The Bodleian Libraries form part of the GLAM (Gardens, Libraries, and Museums) division of the University of Oxford, and we are encouraged to work collaboratively with our museum colleagues to meet the challenge of engaging the public with our world-class collections while at the same time serving our ‘traditional’ constituency of researchers and scholars of the University. This changing focus has required the Bodleian Libraries to reassess user needs and audience expectations as part of our digital strategy, and feeds into our thinking on search and discovery, metadata management, digitization, preservation, and many other areas.

25.1 Introduction

The Bodleian Library was founded by the English diplomat and scholar Thomas Bodley, officially opening on 8 November 1602 with over two thousand volumes on its shelves. There were many early benefactors, including Sir Walter Raleigh, Sir William Knollys, and the deans and chapters of Exeter and Windsor, who donated many manuscript volumes, and in addition Bodley raised money for the purchase of volumes in a variety of languages and subjects. In 1610, Bodley reached an agreement with the Worshipful Company of Stationers (commonly referred to as the Stationers’ Company) that the Bodleian should receive a copy of each work published under the Company’s auspices without charge. While the library was intended to serve the members of the University of Oxford, Bodley recognized the need to serve a wider community:

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Thomas Bodley wanted his library to be a resource not only for his own university, but also for the scholarly world at large. In early discussions with the university about who should be entitled to use it, he agreed that there would have to be some restrictions on access [...] [b]ut he insisted that bona fide scholars from outside Oxford should be allowed to study in the library[.]. (Clapinson 2015, p. 20)

Four centuries later, the Bodleian Libraries' current Strategy, covering the years 2017–2022, places significant emphasis on a commitment to sharing its collections more widely with the broader community—and is less concerned about whether users are 'bona fide scholars'. The Bodleian is at heart a library for researchers—the general public cannot, for the most part, walk in and study the treasures of the collections. The opening of the Weston Library in 2015 has opened up collections to the public through custom-built exhibition spaces and an ambitious exhibitions programme but visitor experience is, of necessity, mediated and so the average person cannot easily access physical special collections that are of interest to them. The Bodleian's Strategy makes central, therefore, the role of digital technology and development in making collections more discoverable—through metadata creation, digitization, application development, and collaborative partnerships. Many of the Bodleian's extensive special collections materials are not described at all; some are described only in legacy hardcopy catalogs. The Bodleian has committed to making such inaccessible collections available and is seeking to develop a programme of work covering both fresh cataloguing and analogue to digital conversion. However, the scale of the challenge—and its cost—cannot be underestimated.

The Bodleian Libraries' stated mission—*advancing learning, research and innovation from the heart of the University of Oxford through curating, collecting and unlocking the world's information*—emphasizes the Bodleian's role and responsibility as custodian of collections that represent our global cultural heritage. It recognizes the Bodleian's responsibility to make the collections that we hold as far as possible open to all. This unlocking of access cannot truly be done in the physical realm. It must, therefore, primarily be through digital methods, platforms, and tools that we democratize discovery for all our varied audiences, from undergraduate to professor, schoolchild to 'silver surfer'.

The Bodleian Libraries sit within the Gardens, Libraries and Museums (GLAM) division of the University of Oxford. This structure reflects the diversity of collections held by the University—the Botanic Garden and Arboretum, the Ashmolean Museum of Art and Archaeology, the Museum of Natural History, the Museum of the History of Science, and the Pitt Rivers Museum, which holds collections related to anthropology and ethnography. This expansion of the acronym GLAM to mean Gardens, Libraries and Museums at the University of Oxford is unusual; GLAM is widely used in the Heritage sector to refer to Galleries, Libraries, Archives and Museums. At Oxford in 2016, GLAM replaced the previous divisional name and acronym ASUC—Academic Services and University Collections. The GLAM division published an ambitious digital strategy for the years 2017–2020, which itself promotes a democratizing impulse. The vision of the GLAM digital strategy is

To embrace the opportunities offered by digital to democratise access to the collections, eliminating geographic, cultural and economic boundaries.

This vision seeds the ambition

To create full machine-readable metadata and digital surrogates of our unique collections and make them available and discoverable online, and to preserve and safeguard them for future generations.

To fulfil this ambition, we will deliver the following:

- Ensure that all collections are discoverable online through the provision of high-quality metadata.
- Create digital surrogates of all unique collections.
- Acquire and create born-digital material and digitise existing material.
- Optimise access to the collections for digital teaching and research.
- Utilise the collections to enhance public participation and engage new audiences – locally, nationally and internationally.
- Create an efficient and sustainable model for preserving and managing the collections.
- Develop commercial strategies and partnerships, where appropriate, to grow income streams and ensure the financial sustainability of our operations.

Fulfilling the ambitions set out in the Digital Strategy will enable GLAM to facilitate further research, teaching, lifelong learning and public engagement, and encourage new collaborations and experimentation. (University of Oxford [2017](#))

Such laudable intent, which as a member of GLAM the Bodleian shares, illustrates not only the scale but the variety of the challenge. In order to achieve these stated aims, the Bodleian and its partners in GLAM have been and will be required to grapple with shifting requirements in terms of staff skills, technical capacity, funding, and priorities.

This chapter will unpick just a few of the various challenges facing research libraries in the 21st century and will seek to identify potential approaches which will help us meet those challenges realistically. Firstly, we will focus in more detail on the changing nature of the work of research libraries in response to the new audiences and raised user expectations that have resulted from the digital shift. Secondly, we will look at the increasingly GLAM-focused work of the Bodleian, and how it has encouraged us to think in terms of ‘cultural heritage’ rather than traditional library work. Thirdly, we will consider the in many ways unhelpful division between the physical and digital curation of library collections, while finally we will look at how collaboration and partnership can offer new models and methods for successful digital development, engagement, and impact.

25.2 ‘Personae’ and ‘Segments’: Audience Analysis and User Needs

Traditionally, the Bodleian Libraries have served a core user group—students and academics affiliated to the University of Oxford, and Oxford-based independent researchers. We might see this reflected in the previous collective name for the various

libraries that make up the Bodleian—Oxford University Library Services (OULS). OULS was rebranded as ‘Bodleian Libraries’ in 2010. Of course, a great many researchers from other institutions worldwide were also accommodated by—and continue to visit—the Bodleian, but a primary focus tended to be the University’s own members. With the advent of the digital shift, the Libraries have been required to continue to meet the needs of this traditional constituency, while at the same time catering to a larger, more diverse, and less easily defined online audience.

For over 20 years, the Bodleian, like its comparable institutions internationally, has worked hard to keep pace with the rapid momentum of technological change and the accompanying digitally-driven shift in research methods. The Libraries must now curate and provide access to an enormous variety of databases, electronic journals, e-Books and other digital resources while maintaining its print collections. Early digitization projects focusing on Oxford’s collections included the Toyota City Imaging Project, which ran from 1993 to 1996, and focused on motoring-related material in the John Johnson Collection of printed ephemera, and the Celtic and Medieval Manuscripts or ‘Early Manuscripts at Oxford University’, which ran from 1995 to 2000, and focused on major ‘treasures’ of various Oxford libraries, including those of the Bodleian and Balliol, Corpus Christi, Jesus, Magdalen, Merton, and St John’s colleges. In 2018, the websites for these early projects remained available online (<http://www.bodley.ox.ac.uk/toyota/openpage.html>; <http://image.ox.ac.uk>). A variety of online catalogs and finding aids for Bodleian holdings were also developed. We are now faced with the challenge of how to migrate and sustain such early forays into online delivery of digital collections because the technologies with which they were built are now aging and no longer fit for purpose. How to sustain and preserve content delivered online has created a fresh challenge for research library staff and has led to new and significant work in the fields of Digital Preservation and Web Archiving. Alongside the need to preserve legacy content, the challenge of making Special Collections materials discoverable online remains huge—most Bodleian Special Collections, for example, are not discoverable online, while many have not even been cataloged at all.

The digital shift has therefore created new challenges around the management of *legacy* systems and content alongside the creation of *new* systems and content. But it has also significantly widened the potential audience for the resources that we create. Most obviously, before the invention of the Internet and the World Wide Web, those who wanted to use and study collections held in libraries like the Bodleian had to make physical visits—the possibilities for the work that researchers could do were in some ways limited by what they could achieve in the reading rooms. Expensive research trips would have been beyond many researchers. Largely, then, in pre-Internet days, those working with Bodleian collections would have been academic researchers either resident in Oxford or having made a special trip to work with particular materials. In a post-Internet world, research practice has been transformed. Scholars can access collections from institutions all around the world without leaving their home institution, or indeed the comfort of their study. If the materials that they are researching are available online—not a given—researchers can do substantial and significant work without having to make expensive research trips. Online

finding aids can also help researchers decide whether a research trip is worthwhile or whether their limited resources would be better spent elsewhere. For researchers, then, online resources and digital collections have allowed them to carry out (and indeed disseminate) their research faster and more widely than was ever possible before.

Arguably, though, an even more fundamental shift has been the democratizing of access to knowledge—for everyone—that has been made possible by the invention of the Internet and the World Wide Web. Anyone with access to a computer and an Internet connection can view treasures held by libraries and museums around the world. In the academic year 2016–2017, there were 2,145,349 physical visits to various libraries that make up the Bodleian Libraries, but in the same period there was also 2,634,614 website sessions and 563,843 views of a digitized book or manuscript. The Web has therefore allowed us a new (and vast) potential audience for information about Bodleian collections, research, and expertise—and has required us to think quite differently about our users.

Users now have raised expectations about what is, or should be, available online. The need and ability to access information about any topic at any time, immediately, has become a fact of life for many of us in the age of Google and smartphones—and perhaps most especially for the generation that has grown up with the Internet, the famed ‘digital natives’. However, the work of content creation required to facilitate such expectation is vast—and indeed too vast to be achieved quickly for institutions like the Bodleian Libraries. We must therefore prioritize—which collections should we try to surface? What technologies should we use to do so? What sort of cataloguing information should be the minimum for a record to be delivered online? Which collections should we create digital surrogates for? Are high-resolution images required, or should we use lower-resolution (and cheaper to create) images? Increasingly the Bodleian, together with colleagues in GLAM, are focusing on audience to help us with this prioritization work—if we can identify who our target audience is, what their motivations and behaviors are, we can focus our time and resources in the most effective way. But in doing so, we have had to think about users in new and non-traditional ways.

The practice of audience segmentation—assessing and dividing one’s audience into categories—is an established one for cultural organizations who seek to engage the general public. Understanding audience groups is vital when planning a visitor or entertainment program that hopes to appeal to a range of people—for example, children and adults, knowledge-seekers and entertainment-seekers. Several different methods of categorization have emerged, although as Walsh et al. (2016) note in their survey of user categories, it can be hard to define useful categories:

Increasingly, cultural heritage services are being tailored to individuals and groups [...] and therefore require some kind of differentiation between user groups. However, despite the wealth of studies carried out to identify and characterise users, many of the categories appear general (e.g., historian vs. student; novice vs. expert), often without definition and therefore making comparisons between studies difficult.

An examination of the literature suggests a lack of agreement on the appropriate terminology for categorising users of digital cultural heritage and their characteristics and needs (e.g.,

exactly who are the “general public”?). Also, within groups users and their characteristics may vary widely and types of user are often abstract and generic. (Walsh et al. 2016, p. 1)

A more nuanced approach is therefore required, and one that focuses on what users want or how they behave rather than who they are is often more useful.

One segmentation method gaining currency is ‘Culture Segments’, described by the cultural strategy and research agency Morris Hargreaves McIntyre as “the international standard segmentation system for arts, culture and heritage organisations”. The system is designed to provide:

[...] a compelling, shared language and deep insight to understand audiences. It can help you to target people more accurately, engage them more deeply and build lasting relationships. Culture Segments is more powerful than other systems because it’s sector-specific and because it’s based on people’s deep-seated cultural values and their beliefs about the role that culture plays in their lives. It gets to the heart of what motivates them. (Morris Hargreaves McIntyre 2019)

Another example of a segmentation model is The Audience Agency’s ‘Audience Spectrum’, which “segments the whole UK population by their attitudes towards culture, and by what they like to see and do” (<http://www.theaudienceagency.org/audience-spectrum>). Such segmentation models encourage organizations to take a fresh look at their audience(s) and to design their services and systems with users in mind.

The Bodleian Libraries are increasingly working with colleagues from GLAM institutions—Oxford’s museums and gardens—and audience has been a key focus for our digital strategy implementation. Working in this context has encouraged us to examine where the Bodleian is ‘museum-like’ and where distinct research library services and structures mark us out as different. Engagement with the general public has become much more of a focus for the Libraries in recent years, and the opening of the Weston Library has provided an opportunity to engage local residents, tourists, and University staff members with the work and collections of the Libraries. The Weston has publicly accessible exhibition spaces (see Fig. 25.1), a café and shop, and an ambitious program of exhibitions and public talks and tours.

In 2018, the major exhibition in the Weston Library was ‘Tolkien: Maker of Middle-earth’, an excellent example of a topic with general appeal that can generate wide press coverage highlighting an event about which many potential visitors could otherwise be unaware. The Libraries’ ability to bring in new audiences has been greatly enhanced by these new facilities (around 700,000 people per year have visited the Weston’s public spaces since its opening in 2015) and has created greater synergies with the University museums and gardens, whose spaces are of their nature open and attractive to the general public. However, there are significant differences. A visitor to the Ashmolean museum can wander freely throughout the museum and can appreciate the enormous variety of material on display. A visitor to the Weston Library can only view those items on public display in the exhibition spaces—the great majority of the collections are closed to them unless they have a Bodleian reader’s card, and they are using the Library for research and study. Considering this, nuanced thinking about our target audiences is particularly helpful as we plan



Fig. 25.1 Blackwell Hall, The Weston Library. (Image credit: Bodleian Libraries, University of Oxford)

our digital offering—access to our physical collections are of necessity restricted and so digital platforms become particularly valuable in allowing people to learn about the materials we hold.

Audience-focused work within the GLAM framework has allowed us to identify an evolving set of ‘segments’ or ‘personae’ and we can use these to help plan our digital projects and services. A range of GLAM user behavior types—such as browsers, followers, searchers, researchers—can be modeled to help institutions understand their audience profile. For the Libraries, this can create a tension between attempts

to cater for our traditional core audience of students and academic researchers and the need to engage more widely with those who want to find out more about our collections purely for personal interest and in their spare time. Putting the needs of users first—and therefore understanding who our users are for a specific service or tool—when planning projects and services has forced the Libraries to think about audience in new ways. Clarity about what we are seeking to achieve and who we are seeking to reach helps us to bridge the gap between the Bodleian's role as a University research library but also as the custodian of world-class collections that are part of our common cultural heritage.

25.3 Custodianship and Cultural Heritage

From its foundation in 1602, the Bodleian Library has been dedicated to collecting and preserving artefacts of intellectual and cultural importance. As mentioned in the introduction, in 1610, Sir Thomas Bodley obtained from the Stationers' Company the right to claim a copy of each publication printed under royal license. This was the origin of the Bodleian Library's privileged status as a library of legal deposit—the University libraries of Oxford and Cambridge are the only universities in the United Kingdom to have this status, sitting alongside the British Library, the National Libraries of Scotland and Wales, and Trinity College, Dublin—allowing the Bodleian to receive material published in the United Kingdom and Ireland. Over the centuries, the library has amassed an enormous collection of print materials; in November 2015 it celebrated the acquisition of its 12 millionth printed item, a previously unseen copy of Percy Bysshe Shelley's *Poetical Essay on the Existing State of Things* (1811, <http://poeticalessay.bodleian.ox.ac.uk>). Alongside its print collections, the Bodleian has acquired manuscripts, maps, music, printed ephemera, and archival materials such as literary and political papers. Treasures of the library include the 16th-century Codex Mendoza, Shakespeare's First Folio, the medieval Gough Map, Mary Shelley's manuscript drafts of *Frankenstein*, and Jane Austen's original draft of *The Watsons*.

The collections held by the Bodleian Libraries are, therefore, of worldwide value and importance. The Bodleian must preserve and make available these collections for future generations—this custodianship is a core part of the Libraries mission. The emergence of digital culture has forced institutions to look afresh at what access and custodianship mean in the age of the Internet. Collections held by research libraries are not just collections of manuscripts, archives, and books—they are collections of artefacts that are part of the shared cultural heritage of all of humanity. The World Wide Web was developed in a spirit of openness—and this openness has resulted in new issues and challenges for research libraries like the Bodleian.

The benefit and necessity of openness in digital culture is reflected in the new and increasing responsibilities that research libraries have to meet in the areas of Open Access and Research Data Management. Significant investment has been made in the creation of fit-for-purpose institutional repositories where researchers can

deposit research outputs—often a requirement mandated by funders. In Oxford, the Oxford University Research Archive (ORA, <http://ora.ox.ac.uk>) is developed, hosted, and maintained by the Bodleian Libraries, and includes within it the ORA-Data service, for archiving, preserving, and sharing Oxford's research data. The open-source software movement has also had a significant impact—as research libraries wrestle with the need to be able to manage and sustain digital tools and services beyond the period of their active development and with limited resources, open source tools and their user communities offer a cost-effective and collaborative option when choosing technologies to invest in.

However, an open approach can be challenging when planning digital developments for our cultural heritage collections. As Gill Hamilton and Fred Saunderson outline in their persuasive call for openness, *Open Licensing for Cultural Heritage* (2017):

At the core of any cultural heritage or information sector strategy is likely to be access and use. Access to material and the onward use of that material is central to the organisational *raison d'être* of most institutions. In the analogue world 'access' often means visiting galleries or reading rooms, while 'using' means observing, consulting, noting, and sketching. Access and use are also key considerations for digital strategies and plans. In fact, in many respects the consideration and development required here is greater than for other aspects of digital collection management. This is not because digital access and use require greater investment (far from it), but because digital access – and, by extension, use – present possibly a great paradigm shift for the culture and information sector compared with 'traditional' access and reuse approaches. (Hamilton and Saunderson 2017, p. 68)

The paradigm shift referred to above requires library staff to engage with evolving legislative frameworks and communities of practice around copyright, intellectual property, and licensing. Curatorial, digital library, and imaging studio staff must keep abreast of legal regulations, as well as monitoring and developing policies for the distribution and download of materials, such as digital image surrogates of special collections. Reading room staff encounter most directly the change in reader behavior around special collections materials. The ubiquity of the smartphone means that DIY reader photography of material is commonplace. However, reading room invigilators must enforce rules designed to ensure that collections are not damaged in the process of being photographed and are not photographed at all when there are restrictions in place (e.g., by the terms of their deposit). The practice of DIY photography in reading rooms is done mostly for the purposes of private research.

As part of a project investigating DIY digitization funded by the University of Oxford's John Fell Fund, the present author interviewed 21 researchers who confirmed that they took their own photographs of special collections materials in reading rooms. 21 out of 21 stated that they used the photographs for their own private study and research, and 15 out of 21 also used them in teaching. However, the resulting photographs also give rise to policy decision-making requirements—should redistribution of such photographs be permitted, e.g., via social media? Should they be permissible in print publication? Even if a policy of restriction were in force, how and when would infringement be pursued? Researchers interviewed for the DIY digitization project noted with frustration the variation in policies that occur at

different libraries and reading rooms. The ever-increasing opportunities to distribute material related to collections on the Internet mean that the amount of copyright triage and licensing decision-making that library staff must engage in is similarly ever-increasing. Indeed, it is Hamilton and Saunderson's argument that it may cost organizations more to enforce restrictions on content than the income that is generated from selling and licensing images (lack of protection for income streams is often perceived as a risk of open licensing)—“an organization seeking to restrict [...] content for the purposes of generating income needs first to consider what costs it has to introduce to generate that income and second whether it can recover in charges more than it bears in fresh costs.” (Hamilton and Saunderson 2017, p. 84).

The immediacy of taking photographs of research objects with a smartphone and the desire to share them with others through social media channels such as Twitter is a neat illustration of how transformative digital culture has been in allowing people to engage much more informally with cultural heritage collections. This has encouraged institutions themselves to be more informal in how they disseminate information about their collections. The British Library's excellent Medieval Manuscripts blog, for example, covers a whole range of topics, from the Gospels of Tsar Ivan Alexander (British Library 2018c), a discussion of medieval rainbows in honor of Pride month celebrations (British Library 2018a), or even a Cotton Manuscripts Quiz (British Library 2018b). Similarly, the Bodleian's own blog for a collaborative digitization project undertaken in partnership with the Biblioteca Apostolica Vaticana has posts discussing such things as digital technologies facilitating the viewing of two Ashkenazi Pentateuch's side by side (Polonsky Foundation 2017a) alongside more lighthearted posts on, for example, marginal 'doodles' of animals in a 15th-century manuscript (Polonsky Foundation 2017b). Such informality is even more apparent on Twitter, where institutions like the Bodleian Libraries, the British Library, and Cambridge University Library seek to engage their followers in a deliberately unstuffy, enjoyable way. These approaches can only help position such institutions to appear more approachable, open, and willing to engage with a general audience.

The rise of social media and DIY digitization both illustrate how embedded digital culture has become in the everyday life of a research library. These activities occur in reading rooms and for marketing campaigns, by readers sharing a fun discovery with their friends or by library staff who want to show the less serious side of their library. Such informal activities are not happening only (or even mainly) in a designated 'digital' section of the library. The digital shift has happened across all aspects of the work of research libraries like the Bodleian—any assessment of its impact cannot therefore assume that there is a clear distinction between 'traditional' library staff and 'digital' library staff. Indeed, it is vital that such a perceived division is bridged for the successful implementation of digital strategies.

25.4 Reintegrating the Physical and the Digital

It is often the case that research libraries or similar institutions have digital departments which focus on digital projects, tools, and services—and that these departments are separate (often physically as well as organizationally) from the departments managing physical collections and library spaces. Indeed, this is the case for the Bodleian Libraries. The Bodleian Digital Library Systems and Services (BDLSS) department is housed in a building about a mile away from the iconic Bodleian buildings of the Radcliffe Camera, Old Bodleian and Weston Library which are situated in the center of Oxford. The need for organizationally separate digital departments reflects the need for spaces that can accommodate the systems, hardware, and people that are required to build digital tools and run digital services. However, such organizational separation can no longer—if it ever was—be assumed to mean that digital work is done by ‘digital’ staff, while the rest of the library’s staff get on with ‘traditional’ librarianship. The use of technology in learning spaces, for teaching, for research, and in leisure time is now so pervasive across society, that all library staff have to engage with it. Digital skills are required by everyone, not just those directly involved in creating digital tools and services.

The most successful digital initiatives are often those that are developed in partnership. Specialist curators have extraordinarily rich knowledge of collections and are in close contact with users and researchers. This specialist knowledge is essential when planning, for example, online resource discovery. A solid understanding of the nature of our content is essential in order to know how best to make it available online. On the flip side, technical staff understand whether particular technologies are fit for a particular purpose, if and how software packages can be customized, how they should be implemented, supported, and maintained in the long term. It is crucial, then, that library staff members with such complementary expertise are able to collaborate on digital projects and initiatives, especially those which focus on collections.

Furthermore, curators and archivists have themselves often gained significant specialist expertise in digital technologies. For example, at the Bodleian Libraries born-digital archives are cared for and curated within the same Special Collections department—Modern Archives and Manuscripts—as post-medieval manuscripts and paper-based archives. Increasingly, archival collections held or acquired by the Library are themselves a mix of physical and digital material. The archive of the Labour Party politician Barbara Castle, for example, contains physical diaries, notebooks, and photographs but also digital files and correspondence. The archive of the international development charity Oxfam contains a huge number of paper documents alongside film, video, and audio material. Digital archives present new and specialized challenges for archivists as technical formats and media become obsolete and must be converted or migrated to new formats. Digital preservation—another area of activity best carried out collaboratively between curatorial/archivist and technical staff—is now recognized as a major challenge for cultural heritage organizations, and one that requires significant investment in policy development, skills training, and

technical development. In recognition of this challenge, the Bodleian Libraries and Cambridge University Library undertook a collaborative project—Digital Preservation at Oxford and Cambridge (<http://www.dpoc.ac.uk>)—to enhance and improve digital preservation infrastructure, policy and training, and to begin the necessary work of embedding good digital preservation practice at Oxford and Cambridge.

It no longer makes sense to consider physical and digital collections, or analogue and digital behavior, as distinct and separate. All of us are used to accessing and sending information from a variety of sources and in different formats—we read newspapers online and in print, we read paperbacks and e-books, we listen to the radio, watch television, read Twitter, send an email, scribble a Post-it Note for a colleague. When we do these things, we aren't dividing our behavior into digital and analogue. The same is true for library collections and services—we must plan, develop, and deliver collections in an integrated way—the physical and digital must be considered in the round, core to the successful implementation of organizational strategy.

This integrated approach to analogue and digital library work facilitates the necessary collaborative work between library departments and individual staff members. Resource discovery is a good example of why such collaboration is necessary. As noted above, the special collections holdings of the Bodleian Libraries are extensive and of worldwide importance. However, a huge amount of these holdings has not yet been cataloged, due to the sheer scale of the work involved. Some materials are described only in print catalogs and have no online presence. Some catalog records are available online, but the underlying technical solutions are beginning to date and need to be replaced. Alongside these, new digital resources are being developed. In order to maximize impact and service to users, and to design and maintain tools that are fit for purpose, it is vital that curatorial and technical colleagues work in partnership. Only through collaborative working can we hope to implement the best approach to surfacing uncatalogued or print-only materials, and to create a resource discovery environment that gives the best experience for our users.

Such local collaboration is vital for the implementation of successful library services, but wider collaborative working is just as important for successful digital development. Shared strategies and approaches are key, and institutions must ensure that engagement with external institutions and communities is a core part of their digital development strategy.

25.5 Collaboration and Community

External collaboration and participation in community-based digital initiatives are important in many areas of library work. Cataloguing and metadata standards are an obvious and long-standing area that require connection with other institutions and organizations. For example, in recent years, the Bodleian Libraries have developed several Text Encoding Initiative (TEI) catalogs for our Western and Oriental manuscript collections. The TEI Consortium is an international organization that

has as its members scholars, projects, and academic institutions, and members pay annual fees to support its work. Established in 1987, the TEI provides guidelines for the encoding of texts and a community of support and advice for those undertaking encoding work. The TEI guidelines evolve—currently they are in their fifth iteration, known as TEI P5 (TEI Consortium 2018)—in response to needs and input from the user community. The TEI has discussion lists, special interest groups, and an annual conference, providing many opportunities for members to gain support or to disseminate their work. The TEI guidelines have a manuscript description (msDesc) module which the Bodleian, together with many other institutions including Cambridge University Library, have used for cataloguing some manuscript collections. Participation in communities like the TEI has many benefits—it allows users to feel supported and to be able to sense-check their implementation of the guidelines, it gives organizations the opportunity to feed into future iterations of the guidelines, it offers avenues for outreach and engagement, and it fosters collaborative working and cross-institutional partnerships.

The development of the Bodleian's recently launched Western medieval manuscripts catalog (<http://medieval.bodleian.ox.ac.uk>), included close collaboration with colleagues at Cambridge University Library. Similarly, Fihrist, a Union Catalog of manuscripts from the Islamic world hosted by the Bodleian Libraries and originally launched in 2011, is a collaboration between several holding institutions—Bodleian Libraries, Cambridge University Library, SOAS at the University of London, the British Library, the Universities of Birmingham and Manchester, the Royal Asiatic Society, and the Wellcome Library. The Fihrist catalog was recently (May 2018) relaunched as part of a Bodleian project to consolidate eight separate TEI catalogs into the same schema and technical infrastructure, with the aim of making the catalogs more sustainable and easier to support in the long term (<http://www.fihrist.org.uk>). The Fihrist initiative is an excellent example of just how far the digital shift has opened up the possibilities for cross-institutional collaboration.

Another exemplar for how collaboration and community create momentum for digital development can be found in the work of the International Image Interoperability Framework (IIIF). The IIIF is a community of cultural heritage institutions who have come together to create a shared set of standards and tools for delivery of image-based content on the web. As the IIIF website (<https://iiif.io>) explains:

Access to image-based resources is fundamental to research, scholarship and the transmission of cultural knowledge. Digital images are a container for much of the information content in the Web-based delivery of images, books, newspapers, manuscripts, maps, scrolls, single sheet collections, and archival materials. Yet much of the Internet's image-based resources are locked up in silos, with access restricted to bespoke, locally built applications.

A growing community of the world's leading research libraries and image repositories have embarked on an effort to collaboratively produce an interoperable technology and community framework for image delivery.

IIIF (International Image Interoperability Framework) has the following goals:

- To give scholars an unprecedented level of uniform and rich access to image-based resources hosted around the world.

- To define a set of common application programming interfaces that support interoperability between image repositories.
- To develop, cultivate and document shared technologies, such as image servers and web clients, that provide a world-class user experience in viewing, comparing, manipulating and annotating images.

In 2018, the IIF had around 120 participating institutions and has grown rapidly. It is governed by the IIF Consortium, a group of over 40 founding members, which was formed in June 2015 in Oxford.

The IIF recognized the need for shared standards and technologies, and its continued success demonstrates the value of collaborative community-based endeavor for the delivery of digital content. In its early stages, membership was heavily represented by universities and university libraries—such as Harvard, Stanford, and Yale in the USA, as well as Oxford—and state or national libraries, such as the British Library, the Bayerische Staatsbibliothek, the Bibliothèque nationale de France, and the national libraries of Norway, Scotland, Wales, and Israel. Digitized manuscripts of the kind delivered by libraries like these (see Fig. 25.2) were an early use case for IIF. However, IIF actively seeks to encourage greater participation in the museum community—in recognition of the benefits of shared approaches across the cultural heritage sector. Some museums—including the Art Institute of Chicago, the Yale Centre for British Art, and the Smithsonian Institution (Robson 2017)—have already



Fig. 25.2 Digitization at the Bodleian Libraries. (Image credit: Bodleian Libraries, University of Oxford)

joined the IIF. There is a Museums Community Group (IIF n.d.) and a guide to help museums implement IIF.

The interoperable software being created through projects and initiatives based on IIF includes many open source options which again encourages community-driven collaboration and support. These include the Bodleian Libraries' own Digital Manuscripts Toolkit (<http://dmt.bodleian.ox.ac.uk>), which developed a set of open-source tools for creating, remixing, and sharing digitized manuscripts, funded by The Andrew W. Mellon Foundation. Open source technologies are often a good strategic choice for research libraries and other cultural heritage organizations because they offer a cost-effective and sustainable solution for content delivery, providing that the community support that surrounds them is maintained. It is to an organization's benefit, then, to actively collaborate and participate in the communities that surround the technologies in which they have invested time and resources.

25.6 Conclusion

The 'digital shift' has been so complete and pervasive that it no longer makes sense for institutions like the Bodleian Libraries to consider the management of their 'traditional' activities and their digital work separately. Closely integrated planning and collaboration and support between departments and staff members with different expertise and skills is essential if the aim is to deliver content, services, and library spaces that meet the expectations of the 21st-century user. Expectations for the delivery of content online are only going to increase—ambitious targets for scaling up digital activity within research libraries are necessary if that demand is to be met. The GLAM Digital Strategy of the University of Oxford has set an ambitious agenda, but the GLAM framework recognizes that such ambition can only be achieved in a spirit of partnership, in this case between the gardens, libraries, and museums of the University of Oxford. The GLAM framework also encourages us to consider how the advent of the digital can encourage us to consider where a research library might be like a museum or where differences lie, and to think of ourselves as a cultural heritage organization rather than 'just' a research library.

The seemingly boundless potential and popularity of the Internet and the World Wide Web for the dissemination of knowledge mean that all research library staff need digital skills, not just those that work in digital libraries or other technical departments. But those skills are often extensions of skills and expertise that are core to 'traditional' librarianship—conservation, preservation, cataloguing, archiving, resource discovery, and information skills training. Library staff, therefore, are well placed to embrace all of the potential that the digital age affords.

When planning and developing digital tools and initiatives, research library staff should take care to consult widely—talk to curatorial colleagues, seek out users of different types, engage directly with online audiences—to ensure that they are thinking in the round about what they are trying to achieve. They should look beyond their own institution to identify how others are making progress and reaching new

audiences, as well as developing partnerships and collaborations, which will make their own digital resources more sustainable in the longer term. The Internet and the World Wide Web make many initiatives possible, but we must make sure that the initiatives that we prioritize are realistic and of genuine benefit to the end user. There is much that we *could* do but it is harder to be sure about what we *should* do—a greater awareness of our audiences and a pooling of collective knowledge in the field make it more likely that the tools and resources that we develop will be fit-for-purpose, effective, and above all well-used.

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