BOPCRIS Digitisation Centre: Experimentation with Sustainability and Partnerships for Library Digitisation Projects

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www.bopcris.ac.uk/bopcris/digbib/home

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The University of Southampton's Hartley Library has been engaged in a number of large-scale, grant-funded digitisation initiatives focused on heritage materials such as parliamentary papers and British pamphlets. These projects left the library with a challenge familiar to many grant-funded projects – developing a strategy to preserve access to the content after the grant period concluded. Early experiences suggested to the leadership of the library that they were not well positioned to host this content locally, so with subsequent projects they began to experiment with different models of partnership with aggregators of scholarly content, such as ProQuest and JSTOR. These partnerships enable the library to focus on content creation while allowing the partner organisation to take responsibility for facili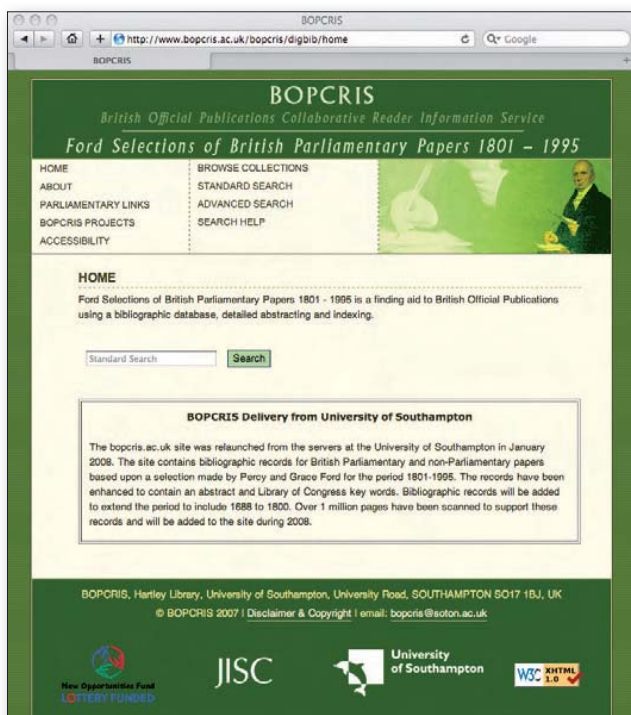tating public access. This case study will trace the evolution of the library's thinking about how best to provide access to these collections, explore the characteristics of the partnership models with which they are experimenting, and highlight some of the benefits and challenges associated with this approach to sustainability in terms of both content and infrastructure.

Introduction

The University of Southampton's Hartley Library is home to the BOPCRIS Digitisation Centre, a specialist unit that, over a series of major grant-funded initiatives, has developed a significant degree of expertise in the digitisation of delicate documents.[1] The library's early ventures into digitisation began in 1994, when it received a grant to digitise the Ford Collection of breviates to British official publications, a collection of great scholarly value which had previously been available only at the University of Southampton.[2] As more public money became available to fund digitisation efforts in subsequent years, the library expanded its activities through a series of large grants, often in partnership with other universities, to create digital resources of British heritage materials, such as parliamentary papers and pamphlets.

At the end of these grants, the library has been faced with a challenge familiar to many university library projects as they move out of their grant-funded development phase and into their long-term maintenance phase. How does an institution fulfil its commitments to make the digital content available to the public after the grant period is over? As will be detailed in this case study, for early projects Southampton hosted content on an Open Access basis with local servers. However, library leadership felt that Southampton was not well positioned to provide ongoing support for these digital resources, and so began exploring a variety of partnerships that would allow the library to focus on the digitisation of content, while granting responsibility for maintaining the content to another provider.

Today, the University of Southampton Library defines sustainability for the digital content they create in terms of maintaining the ability of the public to access and use it. According to Mark Brown, university librarian, 'We are

1   BOPCRIS stands for 'British Official Publications Collaborative Reader Information Service', the name of one of the Hartley Library's early digitisation projects. The library now uses the name to refer to the digitisation unit as a whole.

2   The Ford Collection contained breviates – summaries, brief descriptions and detailed abstracts of documents – of 39,000 British official publications compiled by Southampton scholars to help other researchers locate content of value. The University of Southampton received one of the 154 grants awarded by the £50 million New Opportunities Fund digitisation initiative to support the digitisation of these breviates into a searchable finding aid, which covered approximately 39,000 publications from 1688 to 1995.

This case study was researched and written by K. Kirby Smith as part of the Ithaka Case Studies in Sustainability project.

moving away from local hosting. We like to think that we could collaborate [with partner organisations] to deliver content through a hosting model that is friendly to the ideals that we have, which are very much about Open Access, cross-searching.'[3] Their strategy to sustain the content they have created is therefore not about generating revenue to cover the costs of hosting and maintaining collections locally, but rather about pursuing beneficial partnerships with both for-profit and not-for-profit organisations that have expertise in providing access to digital resources.

Ensuring that content is accessible to the public is only half of Southampton's sustainability challenge…

Ensuring that content is accessible is only half of Southampton's sustainability challenge, however. As their most recent grant nears its end, with no other large projects lined up, library leadership has realised that they must also answer questions surrounding the sustainability of the library's digitisation infrastructure. This infrastructure consists of hardware, software and human expertise, and has been created through a large investment of public money via a series of digitisation grants. Southampton would like to keep this unit in operation, but needs to develop a business plan for generating revenue to support the costs of its continued activities.

This case study will examine both facets of Southampton's sustainability challenge. It will begin by describing three of Southampton's major digitisation projects, charting the evolution of the library's thought from local hosting to partnerships, and describing some of the characteristics of experiments with different partners. It will also highlight some of the issues relating to infrastructure sustainability and the library's current business planning process for the BOPCRIS unit.

Sustainability models

EPPI: Enhanced British Parliamentary Papers on Ireland, 1801–1922: local hosting

One of the University of Southampton Library's early digitisation efforts was EPPI: Enhanced British Parliamentary Papers on Ireland. This project, funded through a £290,782 grant from the Arts and Humanities Research Council (AHRC), 'aimed to create a comprehensive bibliographic database and full-text digital library of the British Parliamentary Papers relating to Ireland for the period 1801–1922'.[4] From February 2002 to January 2005, the BOPCRIS unit digitised approximately 11,000 documents representing 550,000 pages of text relating to the Anglo-Irish Union and built a bibliographic finding tool for them.[5]

When this project began in early 2002, funding agencies and universities alike were 'naïve' about sustainability requirements, according to Brown; virtually no planning for long-term access and preservation was required or conducted before the project began. 'I think when we got to the end [of the digitisation] we breathed a sigh of relief and thought we'd finished it, before we realised it wasn't really the end,' said Deputy Librarian Richard Wake. The library's leadership quickly found that they had not anticipated the server traffic that digitised collections might sustain, or the need to be responsive to users with support queries. The library found itself responsible for unanticipated ongoing costs. Supporting projects like EPPI – valuable to the community, but not necessarily central to the work of the university – is not considered part of the core role of Southampton's IT department, so the library was required to contract on a fee basis with them for these services.

These issues created 'real dilemmas in terms of sustainability of free access at point of use to the community' that led the library to conclude that it was not well positioned to host digitised content.[6] According to Wake, 'we're quite good at getting the original documents, scanning them, and doing quality checking, but we're not necessarily so good at making them available 24/7 over a long period of time'. Library leaders are committed to supporting public access to the existing EPPI resource indefinitely – they feel that letting it go dark would violate both the implied terms of their funding agreement with the AHRC and their mission as a university library – but they do not plan to add to EPPI or enhance available tools and features. In addition, they decided that for future digitisation initiatives, they preferred to find alternative models for providing long-term access to project output.

Eighteenth-Century Parliamentary Papers: partnership with a commercial publisher

In early 2005, the BOPCRIS unit received a large grant from the Joint Information Systems Committee (JISC) Digitisation programme to digitise British official publications from the 18th century. JISC felt there was a need for this sort of digital collection, in large part because 'the paper copies of this material that still exist are not generally held on libraries' open shelves and are poorly indexed, whereas this digital resource will allow universal access to high-quality, fully searchable digital surrogates of the complete records'.[7] By the March 2007 conclusion of the project, 1,260,062 pages of printed and hand-written material from the 'long 18th century' (1688 to 1834) had been digitised, covering the first 18 Parliaments of Great Britain and the first and second Parliaments of the United Kingdom of Great Britain and Ireland. The bulk of this content – around 60% – was from the University of Southampton's own library, but the rest came from the collections of partner organisations. About 30% of the digitised content was from British Library collections, and 10% from the University of Cambridge.

The total cost for this two-year project was £1,430,222, of which a significant amount went towards investment in infrastructure. Over half of the total grant amount was dedicated to capital expenditures: £501,885 was spent on the purchase of digitisation equipment, including flatbed scanners and a robotic scanner – the first in the UK – capable of scanning 500 pages an hour; an additional £133,878 was spent on the purchase of a content

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3 Unless otherwise noted, all quotations from staff members and other individuals knowledgeable or associated with Southampton's digitisation initiatives are drawn from interviews conducted as part of this case study between December 2008 and February 2009. A full list of interviewees is included in Appendix A.

4 Peter Gray, 'EPPI: Enhanced Parliamentary Papers on Ireland 1801–1922', End of Award Report to the Arts and Humanities Research Council, 2005.

5 All financial data were either supplied by project leaders or drawn from external sources cited in the text.

6 Mark Brown, 'BOPCRIS 18th Century Parliamentary Papers Digitisation Project', Final Report to JISC Development programmes, 2007.

7 JISC, '18th Century Parliamentary Papers', **www.jisc.ac.uk/whatwedo/ programmes/digitisation/britishofficialpublications**

management system, and £91,480 on other capital expenditures related to upgrades and physical modifications necessary to bring the BOPCRIS lab environment up to archival standards. The next largest cost category was the digitisation itself: £504,822 was spent on the digitisation, and £36,551 was spent on producing end-user formats from the digitised TIFF masters. An additional £161,604 was spent on a delivery infrastructure and launch costs, such as development of the project website, design and printing of promotional booklets, and travel to conferences and meetings to promote and disseminate the resources.[8]

When the University of Southampton applied for this grant, the EPPI project was still under way, so little was understood about the life-cycle costs associated with sustaining digital resources, particularly as these costs related to maintaining access and supporting users. Although in their proposal to JISC Southampton had envisioned hosting this content locally, during the course of the two-year grant the library's growing experience with the EPPI collection highlighted the challenges of providing a library-hosted platform to support the preservation of and access to digitised collections. Project leaders decided that they needed to change course; as they stated in their grant report to JISC, 'In terms of sustainability the concept of delivery directly from a platform at the University of Southampton shifted towards partnership working with the external host.'

The idea of licensing the content to a commercial publisher was initially suggested by Stuart Dempster, then manager of the JISC Digitisation programme, who was aware that ProQuest already offered digital collections of parliamentary papers from the 19th and 20th centuries, along with a search-and-access interface

custom designed for this content, that enabled searching across the collections. JISC Collections was engaged at that time in negotiations with ProQuest surrounding the purchase of perpetual access to the 19th-century collection on behalf of the UK higher education (HE) community, and these conversations grew to include the licensing of 18th-century content from Southampton as well.

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The Southampton team felt that co-locating their 18th-century content along with ProQuest's other collections of British official publications would add value for researchers; this 'user benefit was primary' in their decision to license the content to ProQuest, according to Brown. JISC Collections helped negotiate the deal between the two parties. Although the exact terms of the contract are protected by non-disclosure agreements, some information

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8 Brown, 'BOPCRIS', Final Report.

is available. As part of the contract with Southampton, ProQuest agreed to make the content freely available to the UK higher education community through JISC Collections for several years, though ProQuest reserved the right to sell the content elsewhere. In addition, ProQuest returns a royalty (a set percentage of their revenue) to Southampton. The content is sold by ProQuest on a perpetual-access basis; reviews indicate that a similar collection, Nineteenth-Century Parliamentary Papers, is sold by ProQuest for a flat fee of $90,000 (USD), plus a small annual hosting fee.[9]

> *Revenue generation, though welcome, was a secondary factor in Southampton's decision-making process.*

The partnership helped Southampton achieve its primary goals – solving the hosting dilemma, fulfilling its obligation to the funding agency to deliver the content free to the UK HE community until March 2011, and adding value for the user by enabling cross-searching with similar content. Revenue generation, though welcome, was a secondary factor in Southampton's decision-making process. In part, this was because little data was available about the terms of other, similar partnerships, so library leaders were unable to estimate with confidence how much revenue they would be likely to receive. According to Christine Fowler, head of Electronic Library Services, 'we were really pleased that we would have our digital content on a robust platform and would have a partner with a global name, so this was good. In terms of the revenue, we had no idea what sort of revenue we would get back…We didn't market test before we created the content, so our expectations were quite low because there was no way we could say strategically that we could confidently predict a certain amount of income that would pay for the robotic scanner, for example.' Being able to predict the revenue stream is also complicated by the fact that the collection is sold to libraries on a perpetual-access basis, so the level of revenue Southampton receives in the early years will likely drop off as the market for the project becomes saturated. The library intends to use what revenue it does receive from this partnership to support the digitisation of new content. Brown says these efforts will focus on 'rare material that adds to the corpus' they have already digitised, though it is unclear whether this additional content will be licensed to ProQuest or made available through some other means.

While ProQuest is responsible for delivering content to the UK HE community and to paying subscribers, responsibility for the long-term preservation of the master files remains with Southampton. The library keeps the master TIFF files at an Oxford-based dark store for the UK HE community. While storage rates are set on a cost-recovery basis, and are thus significantly below commercial data-storage rates, Southampton still pays approximately £10,000 a year for the preservation of about 15 terabytes of data. This is a significant cost for the library, particularly at a time when rising serials expenditures are squeezing budgets. The library's leaders are currently trying to 'untangle' the understanding between themselves and funders concerning their preservation obligations and are evaluating whether continued storage of

the master files is worthwhile. If Southampton decides to stop supporting the dark archive, the library would likely give the British Library the TIFF files for the content digitised from that library's collection, and would offer the University of Cambridge the same. Southampton might save JPEGs of local content, but they would get rid of the master TIFF files for the content digitised from the Hartley Library's collection. Discontinuing the long-term preservation of the TIFFs creates a small risk of catastrophic data loss, but because the original documents are being safely stored and curated, that risk might be considered acceptable. 'You don't want to recreate this stuff, but you could,' said Fowler. 'Paper has lasted hundreds of years…you do the risk assessment, and if it's low, I think that is £10,000 we could be spending on something else.'

Another risk the BOPCRIS team must face is the chance that, at some point, ProQuest might cease to offer the collection – for example, if it proves to be unprofitable, or if the company is bought out or changes direction. Were this to happen, ProQuest has 'no obligation to give [the content] a good home,' Fowler acknowledged. 'We've got break points in the contract,' he said, allowing renegotiation of terms after a certain amount of time, 'but I don't think we've covered what happens if they lose interest, or change their mission or business function.' Were this to occur, BOPCRIS would be in the position of either needing to find another partner to adopt the content, or taking on the responsibility of hosting it themselves.

It is also unclear what will happen to the collection after March 2011, when ProQuest's commitment to provide it free of charge to the UK HE community expires, and the agreement between ProQuest, Southampton and JISC Collections will be renegotiated. It is possible that ProQuest could require British universities to start paying for access. In fact, many JISC-funded digitisation projects are in a similar situation, which Brown thinks could turn into a 'time bomb'. 'We've all got this free content, and we all think it's great, but after five years what is going to happen? Are we all going to get these bills that libraries won't be able to pay?' he commented.

Nineteenth-Century Pamphlets Online: partnership with a not-for-profit publisher

In March 2007, Research Libraries UK (RLUK) received a grant under the JISC Digitisation programme's second round of funding to support the digitisation of 19th-century pamphlets.[10] The project was based on an earlier RSLP/CURL study that had catalogued 180,000 19th-century pamphlets from 21 research libraries.[11] Although the finding aids that were created improved the discoverability of these collections, 'having discovered the existence of a pamphlet, a researcher will then often face the barrier of having to travel to a distant library to view the item, since 19th-century pamphlets are usually held within special collections and seldom loaned out'. The University of Southampton was named the lead institution for this project because of the BOPCRIS unit's existing technological

9 Martin Myhill, 'Review of House of Commons Parliamentary Papers Online (HCPP) – Nineteenth Century', *The Charleston Advisor* 7, no. 4 (April 2006), p. 23.

10 In summer 2006, JISC awarded the project partners £6,239 to conduct a scoping study to refine their proposal. The study surveyed relevant pamphlet collections and digitisation technology and produced a series of findings and recommendations related to content selection, intellectual property issues, OCR and metadata collection, and a proposed workflow. JISC, 'Digitisation Scoping Study', **www.jisc.ac.uk/whatwedo/programmes/digitisation/scopingstudy**

11 CURL, the Consortium of University Research Libraries – now known as RLUK – is an organisation with a mission to advance research libraries in the UK. Research Support Libraries Programme (RSLP) was an initiative funded by the UK's four higher education funding bodies to develop new forms of research support.

infrastructure and their experience in digitising delicate primary-source materials and coordinating multi-partner digitisation projects. Other partners included the University of Bristol, Durham University, the University of Liverpool, the London School of Economics, the University of Manchester and the University of Newcastle. At the conclusion of this project in mid-2009, BOPCRIS will have digitised approximately 26,000 19th-century pamphlets representing one million pages of content.

The overall budget for this project was £1,100,000; £778,991 of this came from a JISC digitisation grant.[12] (No detailed breakdown of expenditures is available at the time of writing because of the project's recent conclusion.) The largest cost category, in the end, will be staff salaries, which will include a half-time project manager, a half-time technical project manager, a full-time inventory project officer, a full-time quality assurance project officer, a part-time (0.63 FTE) software developer, five full-time scanning operators and, for six months, a full-time research officer. (Most of the staff is based at Southampton, though the project manager is based at Cambridge and the research officer is based at Durham.) The grant supported some re-equipment of the lab, including the purchase of several new flatbed scanners. The valuable pamphlets required secure packaging and shipping, and expenses related to the physical transport of pamphlets from disparate libraries to the central digitisation site at Southampton represented another 'considerable' cost category, according to Brown. In addition, the grant built in funds to reimburse partner institutions £1.50 per pamphlet to cover approximately half of their estimated staff costs for preparing and shipping the material to be scanned. Some funds were also included to support dissemination efforts, such as the development of a project website and publication of a promotional booklet.[13]

By leveraging the investments made through prior grants, Southampton and RLUK planned to achieve cost savings in several expensive areas of this project. In addition to avoiding 'considerable infrastructure, equipment and training costs by centralising the scanning within the well-equipped BOPCRIS laboratory', they minimised the expense of 'metadata creation by utilising the existing high-quality catalogue record', created through a prior grant-funded initiative to catalogue pamphlet

collections at institutions across Britain. (The fact that the pamphlets had already been catalogued was a significant factor in motivating RLUK to propose the digitisation of these collections, rather than other options they considered.) Southampton and RLUK achieved additional cost savings through their content selection process. Rather than pre-select individual documents to digitise, the project selected whole collections. Database controls were implemented to prevent the digitisation of duplicate pamphlets when possible, but even where duplication occurred, the time spent on digitisation was less than what would have been spent on meticulous pre-selection. Collection selection was made by research assistants based on criteria such as 'relevance to the themes of the great 19th century debates', 'usefulness in addressing gaps' and 'feedback and demand from collection users'.

From the beginning of the planning process, JSTOR, the not-for-profit digital archive of scholarly content, was included as a partner and as the eventual destination of the digitised pamphlets.[14] According to Brown, the inclusion of JSTOR as a partner from the planning stages highlights the way in which 'sustainability has gone up the agenda' for funders and project leaders. The idea of partnering with JSTOR was suggested both because it was a well-known and trusted organisation and because of a desire to experiment with other kinds of partnerships in addition to the ProQuest model. The JSTOR partnership, which will provide free access to the digitised pamphlets to UK HE institutions, schools and libraries for 25 years, enabled Southampton and RLUK to avoid costs associated with both the archiving and the delivery of the content.

> " This in-kind contribution eliminates the need for Southampton to pay to hold the files in a dark store. "

Although the central goal of both the ProQuest and the JSTOR partnerships was the same – finding an organisation to adopt the responsibility and cost for access and delivery of digitised content – the relationships are structured differently. ProQuest pays Southampton a royalty fee, enabling BOPCRIS to fund the digitisation of additional materials, but does not ensure the long-term preservation of the digital files. While JSTOR does not pay Southampton or the other RLUK project partners a royalty, it does assume responsibility for long-term preservation of the content, something it is well positioned to do because of its not-for-profit mission to act as a trusted archive that preserves scholarly content for posterity. This in-kind contribution eliminates the need for Southampton to pay to hold the files in a dark store.

Brown said that Southampton feels a mission affinity with not-for-profits like JSTOR, in part because of its 'interest in a development partnership…they engage us with some conversations about hosting, interface, the way the material should appear…we can learn more'. (This may be attributable

12 Grant Young, 'Large-scale Collaborative Digitisation: 19th Century Pamphlets Online', presentation to Libraries@cambridge 2009 Conference, Cambridge, UK, January 2009. Presentation available at **www.lib.cam.ac.uk/libraries/ conference2009/presentations/Young_pamphlets.ppt**

13 Grant Young, Julian Ball, Mark Brown and Richard Wake, '19th Century Pamphlets Online – Project Plan', 2007.

14 On 25 January 2009 JSTOR and Ithaka announced the merger of their organisations under the single name Ithaka. Ithaka S+R division, the author of these case studies, strives to be independent and objective in its research and analysis, but it should be noted that the division and JSTOR are part of the same organisational structure.

to the fact the JSTOR was involved as a partner from the outset of the project, and so had more opportunity to engage in the content creation process. It may also be influenced by the fact that pamphlets represented a new content type for JSTOR, and so required more research.) Despite this mission affinity, some significant differences exist between JSTOR's model and the library's ideal model. In particular, the library would prefer that the output from their digitisation projects be available on an Open Access basis, but JSTOR operates on a subscription basis. The library recognises, however, that it is unlikely that a partner will emerge to support access to digitised content without some way to recoup costs, so working with an organisation that sells subscriptions to the content is considered a necessary compromise.

Key factors influencing success of sustainability model

Sustainability of infrastructure

While Southampton's partnerships provide a way to ensure that the community has access to the content digitised through grant funding at the BOPCRIS lab, they do not address needs surrounding the sustainability of the BOPCRIS unit's technical and human infrastructure. All told, a significant amount of public money has gone towards the purchase of scanning equipment

and software and resources have been invested in training to develop the expertise of the lab's scanning technicians. Although, as noted earlier, existing equipment and expertise may help an institution make a convincing case when submitting grant proposals, most funders do not consider it their responsibility to continue to leverage prior investment by channelling work towards institutions like Southampton that house this infrastructure. Ultimately, it is up to the BOPCRIS unit to find ways to support its own continued operations. According to Brown, the sustainability goal for the BOPCRIS infrastructure is to generate enough revenue to maintain operations in order to 'use the facility...to increase the amount of digital content that's available to the community'.

> " ...costs associated with keeping BOPCRIS running include £25,000 a year to maintain and service scanning equipment... "

The library is engaged in a business planning process to help them understand the true costs of the BOPCRIS unit so that they may better predict the level of annual revenue they need to support operations moving forward. According to Fowler, if someone – a foundation, the university, etc. – were to ask 'how much the unit costs to operate at 100%, at 50%, and what are the costs of starting and stopping – we haven't got those numbers, and we feel that's a weakness'. Although library leadership is still collecting data and developing metrics to evaluate the unit's costs, some information about this is already known. In addition to the salaries for the BOPCRIS staff who are paid through the library budget rather than from project money – including one full-time digitisation manager on a professional salary, one 0.6 FTE business manager on a senior administrative salary and two full-time scanning operators – costs associated with keeping BOPCRIS running include £25,000 a year to maintain and service scanning equipment, licensing fees for content management software, and the opportunity costs of devoting several rooms in the library to scanning equipment.[15]

Another component of the business planning process will be an evaluation of opportunities for BOPCRIS to generate sustaining revenue. While Brown hopes that large-scale grant-funded projects will continue to form a significant portion of the income that supports the BOPCRIS unit, in the future less public money for digitisation may be available than before. Studies suggest that approximately £130 million in public funds has been spent on digitisation in the UK since the mid-90s,[16] but Brown thinks that funders may be disinclined to continue this level of support, both because their priorities may change, and because of the current economic downturn. He envisions a future in which universities come together on a consortial basis to fund – either directly or

15 It is worth noting that UK law requires that employers make efforts to redeploy project staff on temporary contracts, so there are significant costs in terms of management time to let staff go at the end of a project and to hire them back when new work comes in. In addition, if project-based staff are let go between grants, BOPCRIS loses their expertise, and has to invest in training new employees when a new project begins.

16 JISC, 'Evaluation of JISC Digitisation programme, Phase One' (2007), **www.jisc. ac.uk/whatwedo/programmes/digitisation/reports**

indirectly through external grants – the digitisation of content the community feels is important, and in which revenues generated through partnerships might help fund a 'virtuous cycle' of content creation. In such a case, Southampton could be well positioned to serve as a centre of digitisation for certain types of delicate paper materials. Universities do not yet seem prepared to fund this kind of work, however, so BOPCRIS will have to cultivate other funding streams in order to support itself as a division.

This is complicated by the fact that library leadership feel sure that they do not want BOPCRIS to become a 'bureau' or a vendor of basic digitisation services. Although they are open to BOPCRIS's taking in a limited amount of work on a contract basis, and the unit's staff currently conduct some straightforward digitisation of theses and dissertations on behalf of the university, they prefer to focus their time on projects and initiatives that leverage and extend their expertise in digitising primary-source documents requiring curatorial care and that relate to library interests. This puts library leadership in the challenging position of developing a sustainability model for the BOPCRIS unit based on an intentionally limited range of revenue sources.

A variety of options exist for organisations that want to digitise their content, and Southampton will need to develop an understanding of their own strengths and weaknesses against this competition, as well as an understanding of the size of the overall market for these services. The current landscape of digitisation efforts is shaped powerfully by Google's book digitisation programme and by the near-ubiquity of its search engine. BOPCRIS has developed expertise in the digitisation of primary-source content that requires the careful, hands-on attention of specialists and a level of curatorial care. In this way, it has cultivated a niche not filled by Google's mass digitisation efforts, which seem to leave out materials that cannot be scanned by robot technology. It is unclear, however, how much demand there is for this expertise, how much funding will be available to support this kind of digitisation in the future, and whether potential partners (including, but not limited to, ProQuest and JSTOR) will be willing to ingest the content digitised through this work.

Benefits and challenges

Experimentation with partnership models to support digitised content has allowed the University of Southampton's Hartley Library to focus their efforts on their area of emerging expertise – the digitisation of primary-source documents requiring specialist handling and curatorial care – while outsourcing the access and delivery components, which they do not feel as well positioned to provide. Although these partnerships are still in their early stages, initial evidence suggests that they have helped Southampton answer important questions about meeting its commitments to provide access to content over the long term while eliminating some of the costs associated with maintaining locally hosted resources.

Partnering with large aggregators of scholarly content may add significant value to the content Southampton has created. The ProQuest partnership adds value by putting the content in relationship to comparable content from different historical periods, and the JSTOR partnership adds value by connecting primary-source content with relevant secondary literature. In both cases, the content becomes part of a database that is already in a scholar's workflow, facilitating easy use. Instead of hosting content on a website that may not rank highly in a Google
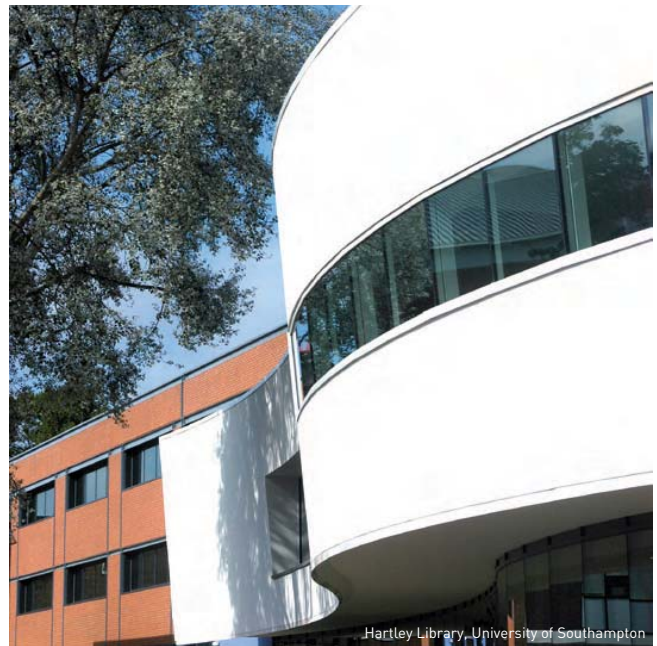
Hartley Library, University of Southampton

search, and that exists in a silo apart from other related content, working with aggregators adds value through collocation, cross-searching and linking.

There are some challenges inherent to the partnership strategy, however. Partner organisations such as JSTOR and ProQuest will be interested in ingesting content that they believe will be both valuable to scholars and marketable to libraries. Funding agencies today expect grant proposals to include evidence of potential impact and viable sustainability plans, so Southampton's ability to attract future grants becomes heavily dependent on locating and selecting collections that match the interests of these third-party partners. The BOPCRIS unit has been fortunate that, thus far, there has been significant interest in the content they have wanted to digitise, but this might not always be the case. Southampton was also fortunate to benefit from the role JISC took in negotiating partnership agreements with ProQuest and JSTOR. It may be important to have the leverage provided by a large organisation like JISC when negotiating partnerships and contracts, to ensure a level playing field for project leaders who may be unfamiliar with the operations of other entities.

"Centralising digitisation activities in the BOPCRIS unit has allowed Southampton to develop valuable infrastructure to support the digitisation of primary-source documents."

Centralising digitisation activities in the BOPCRIS unit has allowed Southampton to develop valuable infrastructure to support the digitisation of primary-source documents. Leveraging

the investments that have been made in hardware and in training highly skilled scanning specialists and project managers has helped Southampton attract subsequent grants and has enabled it to serve as a central partner in large collaborative initiatives. It has been able to transfer its experience with earlier projects to inform and refine subsequent efforts, lowering overall project costs and giving clarity to timelines and deliverables. Southampton is now in the challenging position, however, of trying to find a way to sustain the BOPCRIS infrastructure without developing it into a digitisation bureau – in a sense, seeking to support the business of the unit without turning it into a business itself. Although royalties from existing partnerships may support some digitisation, it is not clear that these funds will support the sort of large-scale projects in which Southampton has been engaged. Until such time when a consortium of universities might fund more of these digitisation projects, this model still relies heavily on outside funding to support the costs of content creation. Although grant funding can be a valuable source of support for digitisation projects, requirements from funders regarding Open Access and long-term preservation requirements may constrain certain new partnership opportunities. Other revenue strategies will have to be developed to ensure that Southampton can continue to support the human and technical infrastructure it has developed.

Broader implications for other projects

Projects need to think through every phase of a resource's life cycle to avoid unexpected costs. Early digitisation initiatives, such as the EPPI project, were developed without a clear understanding of the costs and requirements associated with sustaining access to and preservation of a digital resource over the long term. Projects need to think carefully, early on, about how to support the ongoing costs of resource maintenance – which may include contract-based IT services for work not central to an institution's mission, and periodic redevelopment to migrate content as technology develops – after the start-up phase has concluded.

A willingness to experiment helps projects identify successful solutions. Over the course of a series of digitisation projects, Southampton's BOPCRIS unit has experimented with several different models for providing sustained access to content, including local hosting, partnership with a for-profit company around access and delivery, and partnership with a not-for-profit organisation around preservation, access and delivery. The ProQuest partnership represented a change from what had been planned in the grant proposal, and the JSTOR partnership was established more or less concurrently so that Southampton could gather information about and compare the success of different models. Although it is, of course, preferable to develop a strong plan from the beginning to avoid unexpected costs, exhibiting a willingness to experiment – to change course based on new information, and to explore a range of options to learn more – may also serve projects well by helping them to identify and adapt successful solutions to the unexpected challenges that inevitably emerge.

Understanding core strengths and competitive advantage can help projects focus on maximising value. Early experience with digitisation initiatives suggested to the leadership of the BOPCRIS

unit that their area of expertise was in the scanning of specialist primary-source materials requiring curatorial care, but that they were less well positioned to host and maintain the content they created. Having a clear understanding of the core value they provided allowed them to explore a range of partnerships around content access, so efforts could be concentrated on the unique value the BOPCRIS unit believes it can provide. Similarly, the BOPCRIS unit needs to understand the competitive advantage associated with its expertise so that it can develop a strategy to generate revenue to support its activities in the future. Projects leaders need to have a strong sense of where their initiative sits in the landscape of digital projects, so they can capitalise on what they do best and avoid trying to replicate what others might do better.

> *Maintaining infrastructure can be a challenge without predictable revenue streams.*

Maintaining infrastructure can be a challenge without predictable revenue streams. Although Southampton library leaders have developed a number of partnerships that promise to help provide access into the future to the content they have created, these partnerships do little to help fuel future digitisation, to maintain expensive scanning equipment or to support the salaries of individuals trained in the context of grant-funded work. Because they do not wish to operate BOPCRIS as a bureau or vendor of digitisation services, it may be particularly challenging for them to maintain the human and technical expertise they have developed. Project leaders should think carefully about the sustainability not only of the content of their projects, but also of related infrastructure investments, which require consistent sources of revenue to operate.

Appendix A: Interviewees

Mark Brown, University Librarian, Hartley Library, University of Southampton, 2 December 2008 and 17 February 2009

Christine Fowler, Head of Electronic Library Services and Head of Medicine, Health and Life Sciences Library Services, Hartley Library, University of Southampton, 2 December 2008

Richard Wake, Deputy University Librarian, Hartley Library, University of Southampton, 2 December 2008

Appendix B: Summary of revenues and costs

Because this case study examines multiple projects, no single summary of revenues and costs is included here. For financial information, please refer to documents cited in the text.