The National Archives (UK): Digitisation with Commercial Partnerships via the Licensed Internet Associates Programme

London, United Kingdom

www.nationalarchives.gov.uk

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The challenges of digitising, preserving and providing access to over 1,000 years' worth of material held by The National Archives (TNA) are considerable. In recent years, TNA has developed a strategy to digitise content quickly though its Licensed Internet Associates programme. These commercial partnerships, closely managed by TNA staff, have allowed the institution to digitise millions of pages of material at minimal direct cost. This case study explores the model developed by TNA, describing the opportunities that commercial partnerships can provide for public service organisations. This study also highlights the challenges that such partnerships can bring to bear on a number of critical questions, including user needs, balancing mission and commercial partners' desire to maximise revenue, and long-term preservation and access considerations.
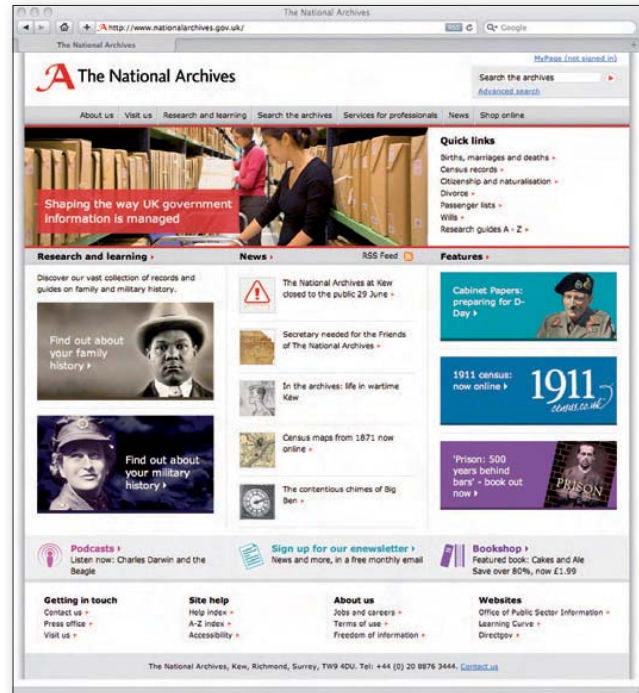
Introduction

The National Archives (TNA) holds an invaluable collection of archival materials from across the UK spanning the past 1,000 years. One of TNA's goals is to set standards and support innovation in information and records management in the UK by providing a practical framework of best practice for opening up and encouraging the re-use of public sector information.[1] A critical part of this mission involves 'bring[ing] history to life for everyone' by providing increasingly universal, realistically priced access to archival documents. In keeping with this goal, the ratio of online to on-site document delivery has grown quickly, doubling to almost 200 to one over the past year alone.[2] TNA's online strategy, and in particular its willingness to create partnerships with commercial entities, has thus become an increasingly critical part of both fulfilling the organisation's mission and maintaining its economic sustainability.

The opportunities presented by the web also create challenges for TNA's leadership: within the constraints of its resources, how can the Archives launch new services online while continuing to fulfil other mandates? How do its digital activities relate to its long-standing preservation mission? How can TNA generate additional resources to pursue these new opportunities, and what role can commercial partnerships play? How does the web change the organisation's relationship with and understanding of its constituents? And what changes in the organisation itself are required to meet these demands? TNA has taken a number of steps to address these questions in recent years.

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1   The broad online and offline goals and mission of The National Archives are described in a set of strategy documents available on its website at **www.nationalarchives.gov.uk/about/operate/plans.htm**. This case study focuses on a subset of TNA's online goals that mainly concern getting content digitised and making it available online. It does not address online goals related to liaising with other government agencies to ensure deposit of digital records, or providing leadership in areas such as the creation of digitisation standards. Nor does this case study address the offline goals and mission of TNA.

2   Oliver Morley, Director of Customer and Business Development, interviewed 6 October 2008. Unless otherwise noted, all quotations from staff members and other individuals knowledgeable about or associated with The National Archives are drawn from interviews conducted as part of this case study from October 2008 until January 2009. A full list of interviewees is included in Appendix A.

Sustainability model

Goals and strategy

This section focuses on two main aspects of TNA's sustainability strategy: generating resources to fund digitisation projects, and pursuing practical ways to outsource or recover the ongoing costs of providing content online. As of early 2009, The National Archives has digitised about 80 million documents, with about 20 million more in the pipeline – an impressive achievement, though this still represents only approximately 9% of TNA's full collection, according to Caroline Kimbell, head of Licensing.

By 2011, TNA 'aims to provide digital copies of all of its most popular records online, through commercial partners and its own DocumentsOnline system'.[3] By the organisation's estimation, the 'most popular' records include about 100 million documents, and as of early 2009, it is 80% of the way towards reaching this goal. According to Director of Customer and Business Development Oliver Morley, TNA is pursuing a 'portfolio' approach to generating resources for digitising content, which involves the following strategies:

- Developing commercial partnerships, referred to as the Licensed Internet Associates (LIA) programme, as well as granting secondary commercial licences and academic licences, all of which are on non-exclusive terms

- Raising grant funds

- Employing institutional funds for projects deemed important but for which good external sponsor candidates are lacking

- In the longer term, harnessing the work of visitors to the Archives (taking advantage of 'user generated content')

Morley believes that TNA's current balance of strategies is 'about right for a public-sector organisation'. He is optimistic about the potential for 'scanning-on-demand', although he recognises some significant challenges with this approach (explored below).

The LIA programme is by far the primary route for digitising content at TNA, accounting for roughly 90% of the documents online. The second major source of funding for digitisation comes from grants, which may be available particularly when a strong case can be made for the academic or public service value of putting a collection online. Sources of grants include government agencies such as the Joint Information Systems Committee (JISC), research councils and private foundations. One major project just completed is the Cabinet Papers, for which TNA received a grant of £600,000 from JISC. The project entailed digitising 60 years' worth of records, totalling over 500,000 pages. This content is now freely available on TNA's website.

TNA also houses some series of documents that are unlikely to appeal to commercial or academic partners, but that in TNA's view must be digitised because they have strategic or particular historical significance, or are heavily used and suffering damage from repeated handling. Documents of this nature are selected for digitisation throughout the year by a system of proposals by staff and academics; they are voted on by the Digitisation Forum, and the digitisation is paid for through the annual operating budget of the Archives. These in-house digitisation projects provide content to TNA's digital document collection 'DocumentsOnline', and this material is freely searchable and accessible to all on-site and online users of the archive. In most cases, the cost to download is £3.50 per document.

For the future, TNA is considering ways to harness the energies of its users to contribute to digitisation. For example, when visitors come to the Archives and scan documents, they could be asked to put their digital files into a user-contributed collection. This approach has the potential both to digitise large volumes of content at low cost, and to allow users a very direct voice in determining what should be put online. At the same time, according to Morley this practice would require major organisational rethinking and 'a huge cultural shift', as TNA would need to deal with incompletely digitised series/collections, and there would be 'no real way of validating the information'

of some of the scans contributed by the public. That said, this approach has promise, and some user pilots are already under way.[4] The Archives already hosts a wiki catalogue called 'Your Archives' which allows users to post metadata and research papers about its collections.

A practical solution for digitisation and delivery: the LIA programme

The Licensed Internet Associates programme is a cornerstone of TNA's mission to digitise its content in order to provide the public with greater access to its documents. The LIA programme contributes in two ways: the companies chosen to digitise content pay an ongoing royalty to TNA, based on all sales of the records made from the service, equalling between £1 million and £2 million in revenue per year.[5] This revenue, though, is not seen as the programme's primary benefit. While the commercial entities that participate in the LIA programme see the value of The National Archives' content as a source of revenue generation, the TNA, as a public service organisation, sees the real value of its commercial licensing agreements as the cost savings the organisation enjoys when commercial partners undertake the digitisation process. Morley stated that up-front digitisation costs are far higher than long-term hosting and maintenance, though preservation of digital surrogates could be very expensive depending on what approach is taken. According to Caroline Kimbell, head of Licensing, over the past six years TNA's partner companies have invested about £53 million in the digitisation and ongoing support of this content, 'so that's where the real value for TNA comes from'. Moreover, Kimbell believes that vendors are able to do far more with this level of funding than TNA could do internally, given its high cost structure as a public organisation. She estimates that as a public entity, with public sector working practices and high overheads, the digitisation costs would be 'exponentially higher' if TNA did the scanning itself, probably costing as much just to do scanning as vendors spend 'on the entire cycle' including marketing and customer service.[6]

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LIA partnerships are structured as renewable ten-year non-exclusive licences whereby partners are responsible for digitising an agreed set of content and hosting it on their websites; in exchange, the companies secure the right to exploit the content for commercial gain, and they benefit from TNA branding and

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3 The National Archives Digitisation programme, 2005–2011, **www. nationalarchives.gov.uk/documents/digitisation-programme2005-2011.pdf**

4 TNA's Digital Express programme allows users to request any document they require via the website, and for a fee, TNA will scan the document and supply page images to the user. These images (with few exceptions) are not uploaded, however, into the online collection.

5 All financial data were either supplied by project leaders or drawn from external sources cited in the text. For further detail on the financial data presented in this report, please see Appendix B: Summary of revenues and costs.

6 Kimbell estimates that vendors spend 15–20p per frame for scanning, 8p per frame for human transcription, and less than 5p per frame for preparation of documents to make them 'scannable'.

Researching – the National Archives, Kew

linking to the TNA site, which receives about 20 million visits per month. Other companies are also permitted to digitise the same records, but they do not benefit from the TNA association in any formal way. According to Morley, if TNA's only interest were the maximising of revenue, it could charge more by seeking bids for ten-year exclusive licences for a body of content, but the organisation would 'never do it because it would conflict with public-service obligations'. Rather, all licences are non-exclusive: while the partner that wins the bidding process is permitted to digitise the content first and benefits from a special affiliation with TNA, any number of other private companies may subsequently arrange to create their own digital copies, to use as they will. While they do not enjoy the benefit of being permitted to link to the TNA website, these secondary licensees are still obliged to pay a royalty to TNA, based on a percentage of sales of their product. All partners are permitted to charge subscription fees for the products they create, but their pricing must be approved by TNA to assure that it is not beyond the means of most potential users, and access to the material must remain free to on-site visitors to TNA. Oliver Morley noted that free on-site access at the Archives' location at Kew helps the organisation fulfil its commitment to making records available to the public. Partners are also required to provide TNA with image files of the scanned material, which TNA can choose to make available after the expiration of the agreement, but the partners retain full ownership of the metadata they create.

Of the £53 million in in-kind contributions generated during the four years the LIA programme has been in place, 90% represent licences for content related to genealogy and family history. The remaining 10% of licences are for academic, military and other kinds of records. Materials that are of interest to genealogists and family historians, such as census records, ships' passenger lists, military service records, and birth, marriage, death and burial lists, tend to be licensed by commercial websites such as Ancestry.com and Findmypast.com. According to Kimbell, these companies have limited ability or desire to proactively seek out valuable content from the Archives; instead, the TNA's licensing team puts together information packs for each defined set of content, describing the materials and the market opportunity. Vendors are then invited to submit bids for rights

to these packages, providing information about their technology platforms, business plans and corporate profile, and other relevant details. Kimbell estimates that the up-front sales process costs about £10,000 per project in staff time.

Although academic content attracts far less interest from licensing partners than does family history content, the academic content is still seen as important from a mission perspective. While commercial partners prefer to bid on packages of material that TNA presents to them, academic publishers have their own views about what archival materials have commercial potential in their sector (usually based on the number of postgraduates in a particular field). They typically approach TNA regarding a specific collection that they believe will be of interest to academic libraries and scholars, and thus ask less of TNA in terms of staff time to research and describe the content. While it is not uncommon to have several commercial partners eager to use the same set of content for different competitive projects, the academic publishers tend to work in specialised fields, and therefore it is rare for more than one of them to be interested in the same documents. 'They tend very deliberately not to compete for the same content, but rather try to offer unique selections of records,' says Kimbell. Royalties from this type of content tend to be much smaller, as they are targeted to niche academic audiences rather than to the general public. At the same time, TNA's preparation costs are lower, as TNA does not have to prepare information packets for the organisations involved.

TNA effectively outsources hosting, maintenance, customer service and the underlying technology development for all content digitised through the LIA programme. This enables the organisation to keep its own costs for providing access to content extremely low: it spends roughly £30,000–40,000 per year to support ongoing LIA projects, basically covering staff time for customer enquiries and some marketing support for partners (most of which is concentrated around the initial launch). Up-front sales and marketing costs are also around £30,000–40,000 per year. That said, TNA is now evaluating options for storing the copies of digital surrogates they receive from partners, and the organisation expects that this cost will be in the millions of pounds.

Meanwhile, Kimbell estimates that LIA partners spend roughly 30–40p per image for ongoing costs such as customer service, hosting, linking, marketing and outreach. The breakdown of this cost varies widely by vendor. This is roughly half of the total in-kind value contributed by these partners, which comes to 60–70p per frame. Therefore, of the £53 million in value created through the LIA programme, nearly half is in the form of ongoing cost savings. In addition, TNA receives approximately £1 to £2 million per year in royalties through LIA contracts, though this revenue goes into the Archives' general operating funds and is not used to directly offset the costs of running the LIA programme (which are, in any case, a small fraction of these revenues).[7]

On the other hand, for those digitisation projects that are funded internally or by grants, TNA must host content and support users itself. In at least some cases it plans to cover these costs by charging for access. For the Cabinet Papers project, JISC requires the organisation to provide free public access to the digitised papers for five years, but subsequently TNA plans to

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[7] TNA's typical licensing agreements are based on 'industry standards', according to Caroline Kimbell: 14% of base revenue for licences to LIA partners; 7% of base revenue for secondary non-LIA licences, and 15% of base revenue for licences to academic publishers.

start charging for access.[8] The organisation's current thinking is that users affiliated with institutions that subscribe to the content will have user IDs to enable them to access that content from anywhere, while the general public will be able to purchase access to the Cabinet Papers on a pay-per-view basis. TNA anticipates a substantial drop-off in usage once access is restricted, but believes that this is a necessary evil to support the service.

> **❝***Therefore, of the £53 million in value created through the LIA programme, nearly half is in the form of ongoing cost savings.***❞**

Morley cautioned that 'it is easy to underestimate the process costs of running a paid service – e-commerce facilities and help-desks are a considerable investment, and for marginal content, it might actually be more cost-effective to simply provide content free'. He also said that there are not always economies of scale in setting up the infrastructure for charging – it can be very 'transactional'. So, for example, people expect help to be available when they are paying for content, and a service call can cost £10–15 in staff time. If the content is free, he explained, users tend to make fewer calls for support.

Key issues influencing the success of the sustainability model

Content decisions

The question of what to digitise is critical to the sustainability strategy. Morley stated that although TNA has extensive customer demographic information, 'digitisation decisions haven't been taken in the direction of "we have a customer base who could really do with having this content"'. Instead, the main goal has been getting records digitised based on the general observation that 90% of the on-site visitors to TNA are genealogists. Morley believes this has been 'a little opportunistic, but you have to admire TNA for taking the opportunity because quite a few haven't. The driving force really has been to digitise, and that's a good thing, although we could probably pay more attention to the customer base'. Name-rich materials have been pushed to the fore, because the institution is more confident of the commercial interest in family history. For other content, TNA looks for non-commercial sources of funding. According to Jess Ahmon, preservation officer in Collection Care, the main criteria used to determine digitisation priorities are commercial viability, demand, copyright issues and any sensitivity issues. Collections are rarely selected for digitisation based solely on condition or desire to preserve.

These decisions may grow more difficult. Morley noted that much of the 'low-hanging fruit' may have been digitised already – 'most of the really commercially attractive stuff is tapped out…[There is] an incredibly long tail of documents delivered on-site' and not much of a 'fat front'. As the most commercially attractive material is digitised, people are becoming more interested in other sorts of records that will supplement or enrich basic genealogical data. But while royalties from new digitisation projects will probably be lower than those from past projects, the partnerships will still be worthwhile because of the value of getting the content digitised.

In the meantime, TNA staff have already taken steps to capitalise on the demand for the name-rich documents, to the benefit of other, less sought-after content. By requiring commercial vendors to bid on pre-set bundles, staff can make sure to include some less attractive archival series alongside the highest interest ones. This allows TNA to ensure that each digitised package truly represents a thorough survey of a topic – for example, all surviving documentation on immigration to the UK, not just the lucrative transatlantic traffic. A rigorous process has been devised to prioritise materials for digitisation, taking into account possible funding sources as well as mission. A number of TNA stakeholders, including Collection Care, Customer and Business Development and the person responsible for grant proposals, are included in the process.

Optimising value to users

To assure interest in the LIA programme, TNA takes great care in creating value for its potential licensing partners when it carefully selects and packages the sets of archival series that it puts up for public bid. The team works to design the offering, from selection, to research and rights clearance, to presentation of the offer to potential commercial partners. This effort is seen as a requirement for attracting the LIA partners. In turn, the UK public gains web access to millions of pages of archival documents they would otherwise not have.

The value TNA creates for all of its users is an important part of its case for public funding, and the number of users served online increasingly dwarfs on-site visitors. For example, in November 2008, 12 million TNA documents were downloaded from the web, compared to 42,800 physical documents delivered in the reading rooms – a ratio of 283:1. Therefore, TNA has worked to optimise the value created online through its efforts to understand online user behaviour and to design services that address the needs of online users. This focus on users is prominent throughout TNA's set of online strategy documents, which call for efforts to examine user intelligence from across the organisation, fill gaps through research and testing and involve users in the development of online services.[9]

Gemma Richardson, head of Customer Experience, was hired three years ago to address these goals. Since June 2008 she has been designated as leader of a Customer Experience 'Team' which is to consist of herself and two staff members to be hired in 2009. She says that in the past TNA had had direct contact with its users, who visited the site in person to access archival materials. But as online usage grew, there was no mechanism in place to find out who these online users were or what they were trying to accomplish. The Archives tended to build out the website and then do some user testing, but by then it was too late

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[8] TNA uses its existing DocumentsOnline platform for this purpose, though it will need some improvements.

[9] See the National Archives Online Strategy Executive Summary, 'Provide and Enable', available at **www.nationalarchives.gov.uk/documents/provide-enable-summary.pdf** and The National Archives Online Strategy, available at **www.nationalarchives.gov.uk/about/operate/online-strategy.htm**

to change anything. Richardson has pushed for a more iterative approach that involves smaller groups of users of the TNA site at multiple stages of development.

This change of approach has impacted content decisions as well as website design. One example is the revision to plans for the Cabinet Papers service. The original grant proposal to JISC, which was drafted quite hastily, said that TNA would develop six 'study packages' targeted to a mix of secondary and university students. Once the grant was awarded, further efforts were made to determine whether this approach was, in fact, the best use of resources – and the conclusion was that it was not. Educational materials for A-level students (16- to 18-year-olds) are structured around National Curriculum standards, so study packages work well for this cohort. Through an informal process of about 20 telephone interviews, TNA staff learned, however, that study packages would not be appropriate for undergraduate students, as instructors at this level do not work from pre-set curricula. So TNA's new plan is to develop two study packages for A-level students and about 100 higher-level entry points for undergraduates. These entry points provide some context but do not attempt to lead students through the content in a prescribed way. For this cohort and other advanced researchers, general introductions and browsing by theme are provided, but mostly the site will be geared to help such users do their own research. User input has also led to the development of a new resources section, which includes features such as a timeline map that allows users to see how borders within Europe have changed over time, and 'whiteboard' interactivity. These features were conceived through talking with teachers about how they would use the materials in class.

A second example demonstrating the importance placed on user needs is an ethnographic research project that was instigated by the redesign of TNA's website. There was a realisation that the generic market segments used to describe users – academic, family historians, military historians, etc. – did not tell TNA staff anything about how users behave or what they are trying to achieve. Richardson noted that 'if you design for everyone, you end up designing for no one – or worse, you end up designing for yourself'.

So Richardson led a project to develop a new behavioural segmentation that would inform the redevelopment of TNA's main website. She worked with a vendor called Amberlight through a five-stage process:

- Shadowing people in the reading room

- Conducting an online questionnaire to screen for level of expertise across a number of dimensions, such as archival understanding and computer literacy

- Recruiting 34 people to do a one-month diary study

- Interviewing these people in their homes to understand or recreate their behaviour and working environment in more depth

- Performing cluster/trends analysis

The outcome was the identification of three behavioural groups: a) *ramblers*, who tend to be beginners, love finding things serendipitously, and are not very goal oriented; b) *explorers*, who tend to be more intrepid, want to further their knowledge, are often academics, relish the untravelled route, and take the time to do exhaustive searches, eg reviewing 10,000 records; and c) *trackers*, who are usually professional, paid researchers, have their own methodology, and know exactly what they want and are vocal about it. These three groups were then translated into six 'personas'. With these personas in mind, TNA staff found it much

easier to prioritise the needs of certain groups; for example, they determined that some 'ramblers' should be directed to other, more accessible websites. They also determined that serving 'trackers' tends to consume a disproportionate level of resources.

This market research exercise cost nearly £90,000. To justify this expenditure, Richardson had to ensure that the exercise was practical and results-oriented, as opposed to doing research for its own sake. Now there are a handful of projects throughout TNA using these personas, so the benefits are becoming clear.

Organisation and culture

By several accounts, the organisational culture and leadership of TNA has been a key factor in the success of the LIA programme to date, and thus a critical factor in TNA's progress toward its digitisation goals. With the appointment of a new chief executive three years ago, TNA has experienced a great deal of change both structurally and culturally. CEO Natalie Ceeney's background includes private sector experience at the management consulting firm McKinsey and Company, and public sector experience at the National Health Service and the British Library. According to one interviewee she has brought a 'corporate' approach to the institution; while an enterprise division existed prior to her coming, she is credited with having 'picked it up and run with it'.

First, there has been substantial restructuring of the organisation, and now only one of the original set of directors is still in place. The TNA's size, around 600 employees, has remained fairly constant, while the mix of responsibilities has changed substantially, with the creation of new departments such as Customer Experience, Licensing and Commercial Delivery. Second, people with experience in the commercial sector have been hired for key positions within the organisation to reflect the growing importance of its online strategy.[10] As one interviewee pointed out, it would not have been realistic to expect records specialists to take on completely new tasks, such as negotiating licences. A few key hires in strategic roles were needed to implement the new strategic direction.

Third, the culture has changed 'dramatically'. There has been a big 'hearts and minds campaign' to transmit the new vision and values. The goal of offering broad, reasonably priced access to materials online is a key element of the organisation's vision and strategy. One interviewee stated that it has become far easier to get things done that involve cross-departmental cooperation, as people 'are coming around to the idea that their job is to support the broader organisation's goals'.

This results orientation is reflected in the types of decisions TNA has made in its digitisation programme. A pragmatic, 'good-enough' mindset seems to prevail in many cases. For example, digital surrogates created through the various digitisation programmes are not intended to be of preservation quality. For an organisation with archiving as its mission, this choice may have seemed incongruous to some. Furthermore, according to some, Ceeney's five-year planning horizon precludes long-term strategic planning, though others suggest that the quickly changing landscape makes longer-range plans impractical.

10 Some examples include Oliver Morley, brought in from Reuters to lead the Customer and Business Development group, which encompasses online strategy. Caroline Kimbell was brought in from Thomson Learning, where she had extensive experience in commercial licensing. Gemma Richardson came over from the Home Office, where she gained expertise in user-centred design. Another member of Morley's team came over from Barclays Bank, where she was responsible for handling customer complaints, and the new commercial services manager is from Amazon and WH Smith Online.

Similarly, the ten-year contracts with commercial partners leave longer-term questions open-ended. What if commercial partners do not want to renew their contracts, and no other bidders are forthcoming? How will TNA ensure that the investments that have gone into these digital projects are not wasted, especially since partners retain ownership of all metadata? But the licensing team has taken a practical view that they should resolve such issues if and when they arise, rather than trying to push through licensing agreements now that protect TNA from such risks, but are unpalatable to partners.

> " *There has been a big 'hearts and minds campaign' to transmit the new vision and values.* "

These choices do lead to occasional friction. The Collection Care group, which sees its mission as the welfare of the collections, sometimes needs to fight for a place at the table to make sure that materials are protected. It is, by its own admission, perceived as somewhat of a bottleneck in digitisation projects. The very concept of a five-year planning horizon augmented by ten-year planning is discordant for staff in preservation functions, where they normally think in terms of 100 years.

Measuring impact

Performance measurement is a critical part of the new culture. Kimbell noted that tracking usage is 'really important, really key'. Because TNA's website does not require registration, it cannot track usage by demographic characteristics of visitors to the site, so a number of other methods are used.

Different kinds of projects are evaluated on different criteria. The success of commercial partnerships is measured by revenue, how well the contract is managed and user statistics, which LIA partners are required to provide; these statistics include the number of images downloaded, the number of transcripts viewed, the number of unique visitors per month and other measures. TNA also uses key performance indicators that aggregate data across partners to evaluate the overall performance of the LIA programme. The Cabinet Papers project, which is essentially publicly funded through JISC, uses a variety of government-endorsed methodologies, including Web Trend software to track usage by category of content, and Prince2 as a project management tool to manage benefits, successes and measurement. In addition to tracking these metrics, the project will bring in an independent evaluator who can provide 'colour' on some of the less tangible, more difficult-to-measure benefits.

Some of these measurement activities are required because TNA is a public body. Richardson cited a directive on measuring Return on Investment (ROI) from the central government, which is providing guidelines on how to quantify subjective or mission-based goals. Financial measures alone are not adequate; for example, increasing website traffic could actually increase costs by attracting more people to the physical site. Goals have to be more about satisfaction.

Benefits and challenges

This mix of approaches to digitisation has yielded a number of advantages for TNA. First, it has already been able to put 80 million pages online. Some of this content is freely available to the public, and all of it is freely accessible to on-site visitors. According to Kimbell and Grants Manager Christine Lawrence, TNA is far ahead of most other European archives. In part, this is because TNA's content is very commercially attractive – genealogical records can be sold to English-speaking people all over the world. It is also because many national archives are not willing or allowed to form commercial partnerships or to charge for access, so they simply do not have funds for this scale of digitisation.

An ancillary benefit is that putting content online can advance TNA's preservation mission. Jess Ahmon, preservation officer in the Collection Care department, noted that monthly accesses of 1911 Census materials have fallen from hundreds of requests per month to single digits. It is also possible that storage costs can be reduced as digitised content has been shifted to lower-cost off-site storage. Ahmon says, however, that the net impact on costs is probably mixed: while many potential users no longer visit the Archives in person, interest in the materials has grown substantially due to increased awareness and accessibility, so visits to TNA itself are at least as high as they were before all this content was put online. At the same time, this increased awareness and usage is surely an advantage for the institution's sustainability, as its case for public funding is strengthened.

Finally, TNA has learned valuable lessons by implementing these strategies and has adjusted its processes accordingly. For example, during the first commercial licensing arrangement (for 1901 Census data), the organisation did not allow time to review the condition of the archival materials. This oversight resulted in substantial cost and time overruns, as the documents needed a fair amount of preparation before they could be scanned. Subsequently, the Collection Care group has been involved from early stages in the process and estimates preparation requirements as part of the bid solicitations.

There are also some drawbacks to the approach TNA has taken, particularly with regard to the LIA programme.

First, several people acknowledged that the selection of materials has been more opportunistic than mission-driven, leaving the important work of understanding customers in the hands of the commercial partners who bid on the packages TNA creates. To what extent, then, do the content demands of the commercial vendors who sell to the general public mirror the demands of the overall base of users of the Archives? And where the content demands most likely diverge – for example, where the needs of scholars differ from the interests of commercial vendors – are the Archives still able to create alternative sources of funding to cover these needs? This is increasingly mitigated by a partnership with Essex University's UK Data Archive, which takes census metadata from the commercial providers and cleans and re-brands it for free use by the academic sector, whose research needs are more statistical and analytical than dependent on individual name searches.

Second, the user experience of the digital archive could be compromised, because content is housed in different programmes, on different platforms, with no one way to search across all of the digitised content at once. As a result, users are required to conduct individual searches on the partner sites, which, as one staffer explained, means that the 'user

experience can get a bit fragmented'. A related issue is that this hosted arrangement can lead to some branding confusion, as commercial partners and TNA are required to link to each other, and users may not realise sometimes that they are going to a new site.

Third, while TNA screens partners extremely carefully and imposes a great deal of control on the business models the vendors propose, the vendors' creation of metadata may be to lower or at least different standards than TNA would like. And in any case, TNA does not have rights to this metadata, which is the intellectual property of the private companies. TNA is currently experimenting with free hosting of images in the form of 'digital microfilm', inviting users to create and post metadata in the form of databases and analytical work – so far with remarkably successful results (see 'DocumentsOnline').[11]

Looking to the future, there are concerns that the sustainability of LIA content could be compromised should the partner companies choose to change policy or direction at the end of their ten-year agreements. Though TNA itself does not have plans to host this content, it mitigates this risk by keeping sets of the document images for unlimited future use, and by licensing multiple versions of the same high-demand content to a growing number of companies. Nor does TNA currently have rights to the metadata created by partners, specifically that relating to named individuals, as this is the partners' intellectual property. While this metadata provides the basis for the searching that visitors to the partners' sites become accustomed to, TNA is likewise mitigating this risk by improving its own catalogue data, among other initiatives.

Broader implications for other projects

In-kind contributions may play just as great a role as revenue, if not a greater role, in the overall sustainability model. One must be realistic about how much revenue can be generated through commercial licensing agreements. TNA receives £1 to £2 million per year in royalties for tens of millions of pages, a far greater content base than most organisations are likely to have at hand. Moreover, TNA's content is particularly rich in names, which attracts a huge general audience interested in researching family history; those with content that primarily appeals to niche audiences cannot expect the same level of interest (or of revenue generation). TNA's focus on in-kind contributions rather than actual revenues may be a good model for other enterprises.

Collaborating with outside partners can help an organisation accomplish goals more efficiently than it could on its own. TNA's strategy of working with commercial partners acknowledges that the organisation itself should not try to do everything internally – including hosting its own content. There may be cases where outside organisations can accomplish tasks more efficiently than the project itself can, particularly when tasks such as sales and distribution can require costly infrastructure and expertise that may not exist within the organisation or is not consonant with the institution's mission.

When making business decisions in a rapidly changing landscape with no 'right' answers, a 'good-enough' mentality can be important. A pragmatic mindset underlies many decisions at TNA, whether they be about quality of digital surrogates, the way content is selected for digitisation, terms of commercial licences, the need to charge for access to some content to cover future operating costs, or the usefulness (or lack thereof) of trying to see too far out into the future. There is an acceptance that technology and business models change quickly, so allowing for some uncertainty is considered okay.

Certain key positions require expertise that may need to be brought in from outside the organisation. TNA seems to have done well by bringing in people in key positions with a mix of backgrounds and skill sets that are needed to provide a successful online service, while still relying on the core of the existing staff. It is sometimes possible to change the mix of responsibilities among staff, thus creating a more responsive and effective organisation within an existing budget, while limiting new hires to a few strategic managerial positions.

Within an organisation, a culture of accountability and results orientation can aid the progress of mission goals. By inculcating a results-oriented culture, TNA staffers have found it easier to work across departments toward common goals. The staff understand the need to attain digitisation targets and create strong services, as opposed to focusing on the narrower needs of a specific department.

The commercial value of one's content is not necessarily obvious, especially to mainstream vendors. Initiatives may need to invest some of their own time in packaging and pitching what they have. At the same time, it is important to keep track of selling costs to ensure that they are commensurate with the revenue being generated.

In a partnership, elements important to the mission of the organisation can and should be carefully spelled out at the outset. By requiring a thorough, competitive bidding process, TNA is able to control some very important aspects of the digitisation and dissemination of its content, including pricing, to assure that the finished resource meets its standards and provides wide access, even to users beyond TNA's walls. That said, other elements, such as creation and retention of metadata, are beyond the organisation's control, which may cause complications later on.

Appendix A: Interviewees

Note: An asterisk (*) denotes a primary contact.

Jess Ahmon, Preservation Officer, Collection Care Department, 17 November 2008

*****Caroline Kimbell**, Head of Licensing, 6 October and 17 November 2008; 13 and 29 January 2009

Christine Lawrence, Grants Manager, 6 October 2008

Oliver Morley, Director of Customer and Business Development, 6 October 2008

Gemma Richardson, Head of Customer Experience, 17 November 2008

Laura Withey, Project Manager, JISC Cabinet Papers project, 6 October 2008

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11 Partners do deposit archival surrogate copies with TNA in the form of uncompressed, raw TIFF images (**www.nationalarchives.gov.uk/ documentsonline**).

Appendix B: Summary of revenues and costs

The National Archives (UK): Licensed Internet Associates programme (LIA)

Revenue Category	Description	Approx. amount
Royalties from LIA partners	Based upon a percentage of LIA partners' sales	£1,500,000
Total revenue		**£1,500,000**

Cost Category	Budgeted Costs				In-kind/volunteer contributions
	Description		Approx. cost		
Personnel		FTE	Included in budget?		
Management/content selection	Proportion of management team attributable to LIA	1.4	yes	£54,600	
Finance	Proportion of finance & contracts team attributable to LIA	0.32	yes	£12,500	
Content selection	(included in management role)	0	yes	£-	
Sales & marketing	Proportion of media & press team attributable to LIA	0.5	yes	£19,500	
Technology		0	no	£-	LIA partners are responsible for any technical development of their own sites
Total personnel costs		2.22		**£86,600**	
Non-personnel costs			Included in budget?		
Administration & overhead			yes	£26,600	
Scanning, metadata, etc.			no		LIA partners conduct scanning and metadata creation at their own expense
Hosting & technology infrastructure			no		LIA partners host content on their platform
Other					
Total non-personnel costs				**£26,600**	
Total budgeted costs				**£113,200**	

Explanatory note

The information presented in this table is intended as a broad picture of revenues and costs associated with the project, not as a detailed financial report. The financial data, which are presented in the currency in which the project reported the information, were compiled as part of the interview process with project leaders and staff, and in some cases were supplemented with publicly available documents, such as annual reports. Project leaders were asked to review the information prior to publication. The column labelled 'Included in budget?' indicates whether or not the organisation includes that category of cost in its own definition of its budget. In many cases, the information was difficult for project leaders to provide because their institution does not record information in these categories, or because the project was combined with other projects in a larger department or unit. As a result, many of the figures are rounded or best estimates. Some leaders preferred not to offer figures at all, but suggested percentages instead. Frequently, certain types of costs are provided as in-kind contributions by the host institution. Although we did not attempt to place a value on these contributions, we felt it was important to highlight the significant role they play in many projects. Because of the variability in the way each institution estimated the various categories of revenues and costs, the information presented in the table is of limited value for detailed cross-project comparisons.

Document Nº: 564a