

*erpa*seminar

Business Models related to Digital Preservation
Amsterdam, 20-22 September 2004

FINAL REPORT

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Introduction

This international seminar focussed on business models related to digital preservation. It explored the practical and theoretical aspects to organisation, funding, and structuring of digital preservation in and amongst different institutes and organisations. Speakers presented practical experiences and theory to provide seminar participants with cutting edge knowledge of digital preservation issues within the often overlooked context of business models, costing and business plans.

Seminar setting

ERPANET co-hosted this event in conjunction with the Dutch Archiefschool, the Netherlands' Institute for Archival Education and Research. The two and a half day event took place at the Vrije Universiteit in Amsterdam and was supplemented by a social programme that gave participants the opportunity to meet and discuss issues outside of the formal seminar setting. This included a walking tour through the historic city centre and a visit to a museum with reproducing pianos, a technique emerging at the beginning of the 20th century which has a remarkable resemblance with the current 21st century issues around digital technology. In fact, some of the punched paper roles with music for these pianos represent original 19th century recordings of composers playing their own music and can be seen as prototypes for the way digital recordings are made and used.

In total, forty-five attendees from the public and private sectors across twelve different countries benefited from this workshop. The seminar was targeted at those involved in the planning, implementation, and management of digital resources, and attendees comprised a range of professions including programme managers, technological architects, archivists, consultants, librarians, and other information professionals. The range of nationalities and professions led to stimulating discussions that revealed national and professional differences in theory and practice, often stimulated by national differences in legislative requirements.

Aims and Objectives

Effective business models for digital preservation depend on understanding the involved work processes and the related costs, yet this issue is often overlooked by organisations that need to implement digital preservation measures for the sustainable, efficient, and cost-effective operation of their business. Furthermore, experience with digital preservation is very recent and still evolving, with most organisations still very much at the beginning of dealing with effective application of information technology and related digital preservation. Insight into possible business models is fundamental to the establishment of a solid digital preservation and sound financial infrastructure, which in itself is necessary to ensure successful and supported preservation implementation within any organisation. This seminar was established to provide insight into business models in relation to digital preservation in a range of organisations, and to help organisations understand these issues by exploring and discussing experiences so far.

Topics included:

- sustainability issues
- different organisational structures, such as distributed and federated archives
- collaboration and partnerships
- funding
- return on investment
- costing in digital preservation

Overview

The seminar commenced with brief words of welcome and introductions by Hans Hofman, co-Director of ERPANET at the Nationaal Archief of the Netherlands and by Peter Horsman, research co-ordinator of the Archiefschool. They touched shortly upon the business model concepts related to digital preservation as investment, costs, and quality, and upon the successful collaboration. After this the seminar launched into the morning session presentations on business planning for cultural heritage organisations and on making a case for digital preservation within business and public sector frameworks. The afternoon session discussed economic factors that cultural heritage organisations must consider when defining and considering digital preservation activities, followed by a case study on business sustainability considerations within the Scottish Cultural Resource Access Network (SCRAN). The day concluded with a breakout session, the first of three, in which attendees were invited to consider and discuss the type of business model best suited to ensuring digital sustainability, and strategies for 'selling' digital preservation in the name of access.

The second day featured a strong focus on costs, funding, and other economic factors related to digital preservation. Three presentations were given on this topic: the first on issues to consider how and when determining the costs of preservation; the second on identifying and securing the requisite resources; and the third on cost categories within a preliminary model framework for a digital library. Also an unscheduled presentation from the Dutch Royal Library (Koninklijke Bibliotheek) was given on its tool for estimating the comparative costs of two different digital preservation strategies; this filled some of the time made available by the late cancellation of the speaker from the Shoah Foundation on Investment, Sustainability and Ethics. Two additional presentations that day examined alternative issues relating to business models: the human factor in digital preservation and the different aspects of it in relation to preservation, and a highly detailed case study on an OAIS based organisational model for a Digital Archive Centre of the French National Space Research Centre, CNES (Centre National d'études Spatiales). This highlighted the services offered and the benefits received within the context of the business model of a specific organisation. The day's breakout session focussed on strategies for documenting costs of digital preservation, asked whether full cost recovery was possible or desirable, and also whether there was proof that resources expended now for digital preservation would result in savings in the future.

The final day was cut slightly short by late-notice absence of one speaker due to present on the DigiZeit Digital Journal Archive (Staats- und Universitätsbibliothek Göttingen; Germany). This absence allowed for an extended case study presentation by a speaker from MIT Libraries (Massachusetts University, USA) and a Question and Answer session on business models as experienced and developed by the DSpace community to promote and develop this open source software tool further. The breakout session that followed considered the business advantages of shared, federated or other organisational models, how this could affect a business model, strategies for identifying, developing, and sharing tools for automating processes, and recommendations for further research and activities on these issues.

In all, most participants felt the workshop to be a clear success. The fact that no real business models were shown, however, can be seen as an indication that we are still very much at the beginning of the curve. Furthermore, the landscape of business models as it currently appears, is hugely complex and hardly any practical experiences are so far available to help clarify it. Apart from the complexity of the issue and the lack of proven experience, varying levels of knowledge and understanding to business models shown by both speakers and participants, and the range of sectors and professions represented by attendees supported the idea that still a lot of work has to be done. The presentations and

discussions during the seminar helped the attendees in getting a better focus and provided them a first introduction into this important and often underestimated topic.

Introduction to Preservation Issues and Business Models within the Public and Cultural Heritage Sectors

Commercial re-use of information within the context of a business model can result in timely recuperation of resources and savings. This has even wider repercussions within the public sector, especially given the recent adoption and publication of a European Parliament and Council Directive on the re-use of public sector information. This Directive deals with the way in which public sector bodies influence the market by allowing the re-use or selling of their information resources, with the aim of facilitating the establishment of European data-products based on public sector information, enhancing an effective cross-border use of public sector information and limiting distortions to competition on the European market¹. Rob Davies, Human Network Co-ordinator of the ePSINet Accompanying Measure, introduced the Commission's interests in the access and re-use of public sector information and described them the main provisions of the Directive in relation to its availability for re-use by external businesses. A comparison with the USA shows how the choice for easy and free access to public sector information over there can stimulate economic activity with subsequent considerable tax income. Such factors have to be considered as well in determining the best strategy.

Davies focussed mainly on how aspects of access and re-use to digital information could play a role within a public sector organisation's business model. This exemplified the multi-faceted role of good records management – the foundation for successful preservation – within a competent business plan, and how successful records management and back-office redevelopment was required in order for a business to function effectively. He raised many issues related to this, including copyright, policy and service requirements, and the impact of direct legislation and web publication. On the issue of sustainability and preservation, he highlighted the contents of the ePSInet website², the portal site for the European Public Sector Information Network. Their standards map, case studies on best practice in public sector mandating, and guidelines on PSI management issues were all discussed, and particular reference was made to ePSInet and preservation standards. The importance of making a case for preservation within an organisation's business framework was identified, in terms of increasing its role and raising the profile of sustainable records management from a secondary to a core-supporting process. The question of further implications for preservation and access strategies or policies associated with the Directive on PSI-re-use was raised and attendees were encouraged to make known their own views on this issue by becoming members of the ePSInet.

This presentation on public sector perspectives was followed by Nancy Allen of the University of Denver and the Colorado Digitisation Project (USA) who presented an interpretative summary of case study research for the recent CLIR publication on Business Planning for Cultural Heritage Institutions³, based on the results of a survey of these organisations. Cultural heritage institutions were notably excluded from the European Commission's Directive discussed above.

Allen's detailed presentation offered an outline framework to assist cultural heritage institutions with business planning for the sustainability of digital asset management programs. Business planning was placed firmly within the context of overall the strategic planning process, cited as a very familiar process to most museums and libraries. However, she observed that it was often the case that this process stopped short of business or

¹ For more detailed information on this directive, see the European Commission Information Society website: http://europa.eu.int/information_society/topics/multi/psi/directive/index_en.htm.

² ePSIgate: <http://www.epsigate.org>.

³ Business Planning for Cultural Heritage Institutions, available at: <http://www.clir.org/pubs/reports/pub124/pub124.pdf>.

operational planning, due to a faulty observation that non-profit organisations are not supposed to work in a business-like manner. The premise should not be that a business plan should focus on profit, but that it alternatively may focus on providing a service. As more than just a budget, a business plan should consider the longer term and reflect organisational sustainability strategies as well as budgetary information.

With an emphasis on digitised collections, she identified the different elements of a business plan and discussed how each one should be approached within the context of digital services by cultural heritage organisations. Elements included:

- Mission, vision, value, and goals
- Product or service description
- Market research
- Pricing
- Distribution
- Communication
- Organisational Structure
- Operations (for example facilities, equipment, management, staffing, legal), and
- Evaluation and usability.

She noted that very few of the survey respondents actually carried out proper business planning, which was necessary to turn their digitisation projects into ongoing and sustainable programmes, and observed that museums were often better able to determine the needs of their users than libraries. In conclusion, she considered that incorporating plans for sustainability (including preservation) into the business plan was considered essential if the plan were to function effectively, in any cultural heritage organisation dealing with digital resources.

Financial issues related to digital preservation and business models

With a total of five presentations explicit considering financial issues, this was undoubtedly the most popular topic. The first of these focussed on economic factors underlying business models for cultural digital content. Gerry Wall of Wall Communications Inc. (Canada) provided an interesting presentation examining economic factors underlying business models relating to the utilisation, creation, preservation and accessibility of digital cultural content. The premise of this presentation was that economic choices related to making decisions wisely should incorporate four main issues:

- Identify which digital preservation opportunities should be pursued
- Justify choices within budgetary requirements
- Consider whether budgets can be expanded (if necessary), and if so how
- Consider short term requirements as opposed to long term requirements.

Identifying digital preservation opportunities to be pursued is the most complex of the three issues, with the main problem identified that not everything can be preserved and thus qualitative decisions must be made. This requires consideration of what exactly digital preservation is attempting to maximise, including steps to maximisation, identification of stakeholders and their needs, identifying characteristics of digital materials and the requirements for preservation, and finally cost issues. Priorities must then be set and content selected in relation and according to the organisation's business plan. Furthermore, the consideration of the long term requirements is very valid: business plans tend to focus on the short term (and often will only be valid for a maximum period of five years, even if they are longer-sighted in vision). Digital preservation is very much about the long term, and the choices made in this respect may not be recognised as valuable, good, or bad, for several decades from now. Digital preservation also requires that we consider in the short term the technological landscape of the future, for this affects the digital preservation choices we should make today, though this will be very difficult taking into account the fast technological developments. All of these issues must be considered when developing a business model for cultural digital content, and choices regarding digital preservation should be made, at least in part, the same way that other scarce resource choices are made.

Maggie Jones of the UK Digital Preservation Coalition spoke on the second day on issues to consider when determining the costs of digital preservation, something that should be done within the context of organisational business planning. Acknowledging that lack of knowledge about costs of digital preservation has sometimes been seen as a barrier to developing digital preservation programmes and that there is no 'magic formula' available for working out costs, she discussed a range of factors that impact the cost of a digital preservation program. She also identified several complicating issues from previous research, such as the observation that it is virtually impossible to segregate costs that are only for digital preservation from costs which are only about access⁴, and that any significant time delay between the creation of a digital object and its ingest into a digital repository may have adverse costs implications as there is a possibility that significant information will have been lost such as suggested in the CEDARS project.⁵ Motivation to preserve was considered key to the successful incorporation of digital preservation within a business model, as she experienced during her time at the National Library of Australia. She noted in this respect that for institutions like National Libraries and Archives, digital preservation is a realistic and logical progression from their responsibilities and that it is not something that can be ignored, no matter what the cost.

⁴ See the Digital Preservation Management Handbook: <http://www.dpconline.org/graphics/handbook/>.

⁵ Cedars project website: <http://www.leeds.ac.uk/cedars/>.

Central to Jones' presentation was her model of factors influencing costs, a Venn diagram of four inter-related factors that might help reduce costs if successfully managed. The four factors are;

- Collaboration – sharing the burden
- Responsible stewardship – more active engagement in managing resources from more stakeholders to ensure that all parties are aware of their responsibilities
- Services and Tools – provision and awareness of internally developed services and tools to external parties
- Research – to help improve efficiency and effectiveness of digital preservation strategies and knowledge.

To conclude, she questioned not only the cost of preserving, but also the cost of losing information, and posited that we cannot afford not to find workable solutions to preserving digital information and that it will become increasingly cost effective as we harness practical experience, collaboration, standards, and services, and research. All of these points and issues are relevant when developing a business model that requires provision for digital preservation.

Anne Kenney of Cornell University Library (USA) followed this with a presentation on 'Identifying and Securing the Requisite Resources for Digital Asset Management'. Beginning with the question of how we can identify and secure the requisite resources to maintain a digital repository, she led the audience through four essential steps, illustrated with real cost experiences and figures based on ArXiv project at Cornell University library, an automated electronic archive and distribution server for scientific research papers that was established in 1991 and continues to operate today.

The four essential steps were listed as:

1. Identify cost categories
2. Identify cost centres
3. Calculate costs
4. Secure resources.

The figures provided were detailed and instrumental in providing an accurate gauge from which attendees could base their own cost calculations. Furthermore, both the presentation and the Question and Answer session that followed epitomised the importance of providing cost information at a very granular level so that others could understand the exact costing implications and see exactly which objects and issues had been considered at which stage of the process – or not, as the case may sometimes be. Kenney finished her presentation with some salient reminders of factors affecting the sustainability of resources, noting amongst other things that digital preservation is more sustainable when preservation costs are directly tied to access, and also when the focus is on cost *benefit* rather than on mere cost.

Seamus Ross of HATII at the University of Glasgow, and principal director of ERPANET provided a detailed presentation of his report concerning costs in the Preliminary Model Framework for Digital Library Construction at the National Library of New Zealand.⁶ Starting with the premise that a digital library includes the infrastructure, policies and procedures, and the organisational, political, and economic mechanisms necessary to enable access to and preservation of digital content, Ross outlined a number of key steps in establishing a digital library and stated that any business model for a digital library must be seen within the context of its objectives, as those objectives have a direct impact on the costing framework. It is integral to the success of the model that the purpose, aims, and objectives of the institution

⁶ This report can be found under the e-prints service of ERPANET: <http://eprints.erpanet.org>.

be defined from the very outset. He identified a number of items and processes that must be established for a digital repository to function within an organisational framework, then introduced several cost categories that related to the successful implementation of the aforementioned processes and items. Cost categories were identified as:

- Management
- Services
- Selection
- Acquisition
- Ingest
- Cataloguing and Metadata creation
- Processing
- Documentation
- Archiving
- Access
- User support
- Technical co-ordination
- Implementation.

As well as discussing each of these categories in further detail, he made some suggestions for further reading, particularly the ESDIS⁷ Data Centre Best Practices and Benchmark report that provides a staff costs analysis against a suite of metrics, such as terabytes ingested annually and number of users at fifteen different data centres, and the SEEDS (Strategic Evolution of Earth science Data Systems) cost estimation model.⁸ The last one offers one of the very few, if not the only, more detailed cost models.

Finally, Simon Tanner of King's Digital Consultancy Services at King's College in London (UK) provided an abstract presentation on the perceived value of digital information by humans and its relevancy to digital preservation activities. He noted that humans define the economic factors by which digital information is valued, used, and ultimately retained, leading to his conclusion that humans are indeed the ultimate tool for preserving digital preservation. On the basis that preservation without access is economically not viable and unsustainable, he highlighted the need for those involved in digital preservation to attract the attention of the users, without whom there would be no one to preserve for and thus no business case in preserving.

⁷ ESDIS homepage: <http://spsosun.gsfc.nasa.gov/eosinfo/Welcome/index.html>.

⁸ SEEDS cost estimation model available from: http://lennier.gsfc.nasa.gov/seeds/LOS_020116.pdf.

Practical experience relating preservation to specific organisational business models

Three case study presentations provided insight into how organisations practically dealing with digital preservation saw it featuring within their business models.

The first of these focussed on SCRAN, the Scottish Cultural Resource Access Network established in 1996. *From Database to Learning Service – the Technical, Cultural and Political Issues in SCRAN's Sustainable Future* was presented by Alan Blunt, Chief Executive of SCRAN (UK). He identified the various development phases of SCRAN from an initial basic supply-driven database project with availability and accessibility issues, to an established charitable company with a user-driven web service that must provide an ever increasing range of educational resources and types of material for a dedicated, but growing user base. Initial block funding for digitisation activities has been replaced by a subscription based business model complemented by contribution from the New Opportunities Fund (NOF). An in-depth knowledge and understanding of their market development drivers, user requirements, service layers and information re-use or re-presentation allows SCRAN to maximise its business potential and become self-sustaining, whilst simultaneously developing itself and its resources with sustainability in mind. The sustainable future of SCRAN is affected by demands across a number of levels, including cultural, technical, political and organisational, all of which must be accounted for within the business model and plan of the organisation. Fundamentally, although it is a charity, SCRAN's business driven emphasis on cost-effective user services, business and collaboration, and standards, have allowed it to successfully integrate aspects of sustainability into the business model so that preservation of resources is an integral part of its overall success.

Claude Huc presented in a second case study a detailed overview of an organisational model for a digital archive centre based on the experiences and model in place at the French National Space Research Centre in Toulouse, the Centre National d'Etudes Spatiales (CNES). After placing the organisation in context and providing a brief description of its work related to archiving space data, which has been produced in digital format since the 1960's, he introduced the organisation's justifications for preserving space data and the importance of its preservation to the organisation and to space research. This placed the long term preservation of the data firmly in the overall strategic business framework of the organisation. After elaborating on some of the lessons learnt at CNES over the past forty years and the problems they have experienced with obsolescence and development of pragmatic, but often time consuming solutions, Huc turned his attention to the reference model for an Open Archival Information System⁹ (OAIS), used by CNES for identifying the several different aspects of establishing a digital archive and for helping it to subsequently address these aspects. The essential functions in the OAIS model were isolated and re-addressed as services that a digital archive must offer, developing thus a service-based preservation business and organisational model that is directly related to and supports the core functions of the centre. Three essential, core, and co-ordinated services were identified:

- Ingest
- Data Management and Access
- Archival Storage

'Service' was defined as an administrative unit consisting of people, technical facilities, and resources given a clear assignment. Each of the services was discussed in further detail, with explicit references to the separate long-term sustainability and availability of the resources, infrastructure, and skills required for their successful operation. The sheer level of

⁹ See the OAIS model for more details: <http://www.ccsds.org/documents/650x0b1.pdf>.

detail in this model unfortunately resulted in insufficient time to address all aspects completely during the seminar; however, this was undoubtedly one of the most extensive models arising from actual practical experiences in a specific business context that so far has been encountered.

The seminar concluded with a presentation from Julie Walker of MIT Libraries (USA), project liaison officer to Cambridge University for the DSpace @ Cambridge project. She described the current activities of the DSpace project in relation to digital preservation and examined how DSpace can support automation and facilitate co-operation. Furthermore, she offered a vision for how its adoption as open source software, and the subsequent development of a DSpace federation community, could serve as a possible business model for digital preservation and explored a range of factors including the technical platform, available resources, research initiatives, service models, and economic factors.

Focussing on libraries and cultural heritage organisations, Walker first approached the range of problems surrounding digital preservation, identifying not only the commonly recognised and primary problems of technological obsolescence and the growing complexity of digital preservation resources, but also the resource-intensive curation process and the need for funding and business models to ensure that the primary problems can be addressed and dealt with in a sustainable way. The number and range of organisations that must deal with digital preservation solutions could mean that the market for such solutions is actually very large and, especially for public sector and heritage organisations, thus ideally suited for federated or shared preservation business models and repositories. After placing the DSpace project in context with other known projects researching and developing solutions to aspects of preservation, Walker introduced the DSpace project and highlighted the open source and institutional natures of the DSpace repository that feature prominently in the case for how DSpace can support a certain business model for preservation. The institutional nature allows for deposit almost immediately after the records have been created (unlike the current situation with traditional archival institutions), and the use of open source software means that it can be relatively easily adapted to suit each contributing or utilising organisation's requirements. Furthermore, this allows for shared development and contributions from a wealth of sources to further alterations, releases, and iterations of the software as the preservation context and institutional requirements are more clearly understood, which in turn means faster development and decreased costs. Walker made a strong case for how the DSpace Federation could provide a potential digital preservation business model, or infrastructure upon which many business models for other types of organisations could be developed. The structure of the federation was described as comprised of four essential elements:

- DSpace software, at the core of the Federation
- DSpace installations (Universities, corporate and government sectors)
- The DSpace Open Source Software Community (comprised of developers working to enhance system functionality and architecture)
- Service providers/Value added resellers (for example, library service organisations, consulting firms, hosting companies etc).

It is this structure and the relationship to other projects that were deemed suitable to provide grounds for digital preservation business models. A federation of DSpace installations provides many critical advantages and can serve as a focal point for examining economic issues, with collaboration producing greater impact than individual initiatives. As the DSpace technology platform is explicitly designed and positioned to address preservation, the onus is removed from each of the participating organisations, thus reducing costs both in fiscal and material terms.

Practical Sessions

Three practical sessions took place over the course of the seminar, in which participants were separated into three smaller groups and presented with a small number of questions intended to stimulate discussion on matters related to the presentations.

The first session focussed on sustainability and access, asking:

1. Does sustainability depend on a broadcast business model (governed by what the organisation thinks is useful) or an on-demand business model (what do users need)?
2. What strategies exist for selling digital preservation in the name of access as a public good?

The three groups returned a range of answers. All groups discussed the meaning of the questions and the terms they used, such as 'sustainability' and 'broadcast model'. Some thought the business model had to be user-driven, with broadcast business models offering only limited usefulness. Others believed that a combination of the two was needed and that both aspects should be featured in an organisation's business model. Some discussion related to what the user groups are and to what extent it is necessary to make a distinction between those groups. Do we need to distinguish primary and other users for instance? In an initiative as SCRAN enabling users to personalise access and use of information is very important to attract them. It helps to actively involve those users. All groups identified a range of issues that must be considered when developing and selecting a particular type of business model, based on the requirements of the organisation concerned. Regarding selling preservation in the name of access, the same semantic discussions took place to identify the differences and similarities between the two. Strategies were broad, ranging from using access itself as a strategy for selling digital preservation, to using the legislative environment, user requirements, authenticity and emotional appeals, selling stories, mission statements and investment return. It was noted that new structures emerge that are overlaying (e.g. to institutions) and providing basic services, such as used by RLG or at the EU level. They focus on added value and require more standardisation and best practice how to implement them. The range of discussion and answers, and the need for semantic discussions to determine exactly what was meant, reflected the range of professions participants represented.

The second session asked:

1. Must business planning result in full cost recovery?
2. What proof exists that resources expended now for digital preservation will result in savings down the road?
3. What strategies should we follow for properly documenting digital preservation costs?

Answers to the first question depended largely on the types of organisation attendees represented. It was widely recognised that different organisations had different requirements for cost recovery, and that it was generically more important for all types of organisations to be able to discover or justify costs rather than recover them. One group particularly noted that cost recovery would be difficult for many organisations in the short term, until sufficient demand emerged. Mostly the current situation is taken as a given, but that may change when new organisational structures emerge that may have an impact on costs. It raises also questions, such as how to compare to traditional preservation? It seems most of the savings can be achieved in the area of use. Making information digital will not only help research and use, but may also be more efficient and stimulate activities that will generate income.

Regarding proof that resources expended now will result in savings down the road, several discussions hinged around the term 'savings'. Many thought it was difficult to obtain proof, but that the absence of proof should not be sufficient reason for not preserving. 'Savings' should be considered from several perspectives, for example, explicit financial savings resulting from less physical storage space, anticipated savings resulting from a reduction in the need for expensive digital archaeology, and potential savings resulting from future revenue from multi-accessible and usable digital resources. Suggested strategies for properly documenting costs ranged from sound business planning and appropriate levels of granularity, to education, flexibility, knowledge sharing, and the use of comparable cost components.

Finally, the last breakout session summarised the contents of the seminar and asked:

1. What can be shared amongst different domains involved in digital preservation in order to relieve the burden of digital preservation? To what extent may this influence the choice of a business model?
2. What strategies exist for identifying, developing and sharing tools for automating processes?
3. Where should we go from here? Recommended post workshop activities.

Common terminology and notions were cited as the most immediate requirements before organisations could begin to share work across different domains. In this respect a quote was mentioned, saying that 'collaboration is an unnatural act practised by non-consenting adults'.¹⁰ This shows that collaboration very much depends on human beings and that is not always works out very well.

Once this was established, many aspects could be shared, including software, information, tools, guidelines, lexicons, and services. These would naturally all require some element of tailoring for different domains, but the basic work and knowledge was deemed transferable by many participants. Suggestions of strategies for identifying, developing and sharing tools for automating processes ranged from setting up federations, coalitions and communities to share and build infrastructure, to establishing shared testbeds, utilising open source software where possible, and driving for more publicly funded research efforts. Outsourcing was discussed as one option, but the suitability depends on the level of control one wants to have.

It was noted that business models themselves are not static, but contingent. Each business context may adapt them, but they will also evolve over time with new insights.

Regarding next steps, many participants were of the opinion that more seminars, workshops, and courses were needed, including online training services. Ongoing communication of activities was considered key to eliminating duplication of efforts, and the development of building blocks for developing business models related to digital preservation was deemed highly useful by a number of attendees from a range of different backgrounds.

¹⁰ Steve Knight, New Zealand National Library.

Conclusions

In concluding the seminar, Seamus Ross offered some summary points regarding several of the presentations and provided some insight into what seminar participants may have learned and could take away with them. Whilst no explicit business model for preservation had been presented, the seminar allowed participants an increased understanding and recognition of just *why* there were no business models, namely because of just how complex the preservation issue is and how it differs so broadly in different types of organisations and institutions. As pointed out, it are not just the financial issues, but also the vast array of organisational, human, and cultural issues, compounded by the many differences in business contexts as well as in related organisational practices and structures, that must be considered.

Regarding the presentation on Public Sector information by Rob Davies, in which the PSI model resulted in generation of external businesses, it would be desirable that the European Directive will be extended to cover cultural heritage institutions in the future. Ross also noted that this is very important in terms of how the cultural heritage sector develops new business models in the preservation area and how organisations come to perceive the value of the information they hold. The sustainability issues highlighted during Nancy Allen's presentation were also discussed, with Ross agreeing that in his experience it is very true that too many organisations failed to consider preservation and sustainability when establishing their digitisation projects. Additionally, more emphasis should be placed on the user requirements than was currently being considered when projects commenced. This led neatly into the presentation of Gerry Wall, which exemplified the need for a move into a demand- rather than supply- driven economy to build appropriate business models for the future. Similarly, an emphasis on selection and appraisal (i.e. to ensure user needs and requirements may be met) was deemed necessary to produce preservation businesses and services that are sustainable and usable and for which the required products can be developed.

The several presentations on cost issues made a significant contribution to the current lack of cost models and it was heartening to see several presentations including cost issues at a very granular level. Claude Huc's presentation on the organisational perspective provided a tremendously valuable view of how organisations need to change and respond to the new challenges of digital preservation, and Simon Tanner's presentation provided an interesting perspective on the roles that human beings had to play and on the presentation landscape. Finally, Julie Walker's presentation on the DSpace model and federation, featuring explicit collaboration between different groups as a possible and usable business model within the preservation area, offered yet another perspective.

The question of the business benefits of preservation was largely absent from discussion, a point to which Ross was keen to draw further attention. He raised the issue that there are few good benefit models that staff working on preservation activities can present to senior managers to draw attention to the integral position and importance of their work as related to the organisation's overall business activities. The recent British Library conference on 'Demonstrating Value' is one the few conferences to have explored this topic and which explored ways in which public and voluntary sector organisations can measure their value and demonstrate the benefits they deliver.¹¹ Most benefits as they are currently understood tend to focus on the long term, whereas we actually need to pay more attention to the short term benefits in order to draw sufficient business attention and relevance to preservation activities in any developing business models. Relating non-essential company documents (i.e. not those documents that the company is legally required to keep, but ones which allow a company to track it's progress in developing a certain section of their business or business

¹¹ See the British Library website conference report and presentations:
<http://www.bl.uk/whatson/valueconf/value.html>.

plan) back to the relevant part of a company's business plan and highlighting the short term benefits of such retention in identifying goals and objectives that may or may not have been met, and their relation to future business plans, may be one way to begin achieving this.

In closing, the seminar participants agreed that much work was yet to be done regarding business models as they relate to digital preservation, and that it was desirable to organise further opportunities for discussion. Thanks were given to all those involved, from speakers to attendees to seminar organisers, all of whose input was invaluable to the success of the seminar and to raising the vital importance of introducing digital preservation into business models to ensure long term sustainability and of resources from not only financial, but also organisational and cultural perspectives.