



Scottish Academic Periodicals Implementing an Effective Networked Service

Final Report – December 2004

Author

Jake Wallis

Lead institution

University of Strathclyde

Contact

Jake Wallis
Centre for Digital Library Research
Department of Computer and Information Sciences
University of Strathclyde
Livingstone Tower
26 Richmond Street
Glasgow
G1 1XH

Tel: 0141 548 5854

Fax: 0141 548 4523

E-mail: jake.wallis@strath.ac.uk

Strategic Change Grant

Final project report

Lead institution:

University of Strathclyde

Project title:

SAPIENS – Scottish Academic Periodicals Implementing an Effective Networked Service

Project manager:

Jake Wallis (jake.wallis@strath.ac.uk, 0141 548 5854)

Collaborating institutions:

Scottish Confederation of University and Research Libraries (SCURL)

1. List the original project objectives and any changes to these.

The primary deliverables of the project, as outlined in the original bid, are as follows -

1. A detailed understanding of the requirements of smaller publishers of academic and cultural journals in Scotland in moving towards the electronic environment
2. A detailed understanding of the financial and technical requirements of a service which might encourage and support this move;
3. A demonstrator service through which a model for an operational service can be developed and evaluated;
4. Strategies to ensure that the service's content and customer base reaches critical mass within a year of the end of the project;
5. The launch of an operational service which is viable and self-sustaining.

2. Have these objectives been achieved in full? Please indicate:

- a) **outcomes for specific objectives which have been achieved;**
- b) **objectives that have not been achieved, and reasons for this.**

1. There is a disparate community of small-scale publishers of academic and cultural periodicals in Scotland. Using a number of trade directories, and contact with the Scottish Publishers Association, a database of Scottish publishers of humanities and cultural periodicals was compiled. This database was used to make contact with this community of publishers and to undertake a survey of their attitudes towards electronic publishing. The survey provided useful qualitative data in this context, on the issues that publishers felt were important in moving into the online environment and the barriers that they faced. It also allowed the identification of a group of publishers who would be willing to move forward with the project to the development of a demonstration service.

Broadly speaking the publishers had various areas of concern:

- Business models – With print sales as the traditional revenue stream, publishers expressed concerns that this would be threatened by the online delivery of content. Electronic publishing would increase editorial and organisational costs with no clear indication of how much revenue it could recover. In several cases (for example the Association for Scottish Literary Studies) a copy of the journal is a benefit of membership of an organisation. In such cases the additional cost of online publication would eventually have to be passed on to the membership.
- Access – several publishers expressed concern that their audience may not have access to the networked computing technology which would allow them to read the publication online.
- Loss of control - Some concern was also expressed about the skills that the publishers themselves would require to fully understand and adequately control electronic publication. To some extent this was a facet of concern over the loss of control of the publication process. The publishers were obviously used to working and thinking within a print paradigm. In follow up interviews publishers expressed anxiety at the prospect of being unable to restrict access to their own content in the online environment, that it might be effectively given away for free, and unease at losing control of the publication's "look and feel".
- Digital preservation – With no clear consensus as to the long-term preservation of online publications, it is understandable that publishers would have concerns on this issue.

Despite concerns of this nature many publishers could see how online publication might offer them certain advantages. Several were attracted to the potential for flexibility that online publication might offer, such as print on demand of out of print back issues and individual article sales.

The project manager worked closely with those publishers who wished to move forward with involvement in setting up a demonstrator service. It was important to address the concerns of the publishers in order to have their participation. This necessitated a period of negotiation and

advocacy, to reassure publishers that their fears would be addressed and to emphasise the potential longer-term benefits of electronic publishing. A move away from a traditional print paradigm, towards thinking of print and online as vehicles for the distribution of content, would require an uncomfortable cultural shift for many publishers. For niche publications, produced on very tight budgets in the same manner for many years, the value of publishing online was not always immediately apparent, and in fact may have appeared threatening (as change often does).

2. Experimental work was undertaken with content supplied by publishers. This experimental work was used to establish a demonstration service (<http://sapiensdemo.cdlr.strath.ac.uk/>). The original survey had established that publishers used a variety of software formats in their production processes. This created complexities in establishing an electronic publishing process that could suit all requirements. A specific publication process had to be undertaken for each journal, dependent on the software format that it could be provided in and the point in the publication cycle at which the content could be provided. For example, in one case the journal still accepted handwritten submissions. These would be sent to the printers to be typed up. This meant that an electronic version of the publication was not available from the journal editor but instead had to be provided by the printer after the publication had been printed.

There were complexities in moving the content from the software formats in which it was provided (such as QuarkXpress, Adobe Portable Document Format, Microsoft Word), into appropriately formatted and presented HTML for online delivery. Under Part IV of the Disability Discrimination Act, amended by the Special Educational Needs and Disability Act, there is a legal, as well as ethical compulsion, to ensure that online learning resources are provided in an accessible format. The widest approach to the concept of accessibility was taken by the project (as advocated by the World Wide Web Consortium Web Accessibility Initiative, <http://www.w3.org/WAI/>) in the knowledge that the resources it developed might potentially be accessed over low bandwidth Internet connections, using older technology or mobile devices. In order to facilitate this level of accessibility it was decided that the SAPIENS service content standards would be XHTML, with formatting provided by templates and Cascading Style Sheets. These standards are used in the live service.

The textual content had to be extracted from the format in which it was provided and reformatted according to SAPIENS content standards. The costs of creating fully interlinked hypertext e-journals were established through this period of experimental work. We also learnt that a low cost solution using Adobe PDF was useful as an option to be able to offer publishers. The option of publishing in PDF, to some extent, dealt with the concerns that some publishers had about losing control of the look and feel of the journal when published online.

This experimental phase of working with the content provided by publishers allowed us to establish the costs of the publication process which was of obvious importance in developing a sustainable exit strategy. Electronic publishing is not cost free (Tenopir and King, 2000) but this concept is not always understood as the evolution of the Internet has encouraged a perception of digital information as being free to produce and access. There are in fact significant costs involved in producing electronic information. It requires a significant level of technical and editorial skills, as well as a technical infrastructure. In reality the costs of electronic information delivery are often hidden from the end-users, particularly in academic institutions, where access is free at the point of use. The costs of subscriptions to e-journals and databases are a reflection of the costs of producing such resources. It is usually academic libraries who negotiate the commercial arrangements and transactions that allow their user communities to access these resources, as well as ensuring that these resources are constantly available. There are cost implications at each stage in this publishing chain. Nielsen (2001) has pointed out that free content provision on the Web is not a sustainable business model.

In moving beyond the demonstrator to a live service we had to discuss with publishers how we might develop a business model that would cover the costs of electronic publication. Publishers had to decide what they actually wanted to gain from entering the online environment and how to incorporate such a development into their business strategy. One option was to introduce a subscription for online access as a new revenue stream. Some publishers felt that there were various advantages in making content freely available online (such as meeting accessibility requirements, promoting their organisation and publication in the global information environment, potentially meeting the requirements of the Freedom of Information Act (Scotland) through pre-emptive publication) and therefore to cover the costs from other revenue.

3. In order to launch the demonstration service the technical infrastructure on which it could run had to be implemented. This necessitated an assessment of the server and network requirements, an investigation of access control and authentication (in order to implement the publishers business models), the design of the service's information architecture, indexing and search facilities, and content management procedures. Technical solutions were found and the demonstrator was launched. Access was restricted using password controlled authentication. Editors of the publications involved (Scottish Studies Review from the Association for Literary Studies, Res Musica from the Music Research Group at the University of Aberdeen, Proceedings of the Society of Antiquaries of Scotland, WIDWISAWN from the Centre for Digital Library Research, Information Scotland from the Chartered Institute of Library and Information Professionals in Scotland and Strathclyde Modern Language Studies from the University of

Strathclyde) were provided with access to the demonstrator in order to give feedback. The project steering group which included librarians from the University of Strathclyde, University of Glasgow and Heriot-Watt University, as well as the Development Director of the Scottish Confederation of University and Research Libraries, was able to provide an end-user perspective.

4. The Society of Antiquaries of Scotland was the only publisher from the demonstration phase who decided not to move forward to the live service. They decided that publishing current content online did not fit with their business strategy as it would threaten their current subscription income (Proceedings of the Society of Antiquaries is a benefit of membership of the organisation). The Society decided that their approach would be to restrict online publication until five years after initial publication and to do so through the Archaeology Data Service (<http://ads.ahds.ac.uk/>). All of the other publishers involved in the demonstration phase agreed to move forward to a live service.

The editors of Scottish Studies Review and Strathclyde Modern Language Studies decided that due to the substantial cost difference between publishing in XHTML and Adobe PDF they would have to opt for the low cost PDF solution and that they would have to introduce subscription charges as a means of recovering the costs of online publication. We were able to implement this solution whilst retaining the benefits of publishing online (accessibility, retrievability of content, wider audience) by creating XHTML “wrappers” for the full text PDF files. The XHTML wrappers allowed us to add metadata so that the individual articles could be retrieved by local and global search facilities, and to make the article abstract openly available as a taster whilst securing access to the full text PDF file for subscribers only. The other publishers involved decided that open access publication suited their agenda and business strategy.

The service has been promoted through presentations, leaflets distributed at events and conferences, and widely on the following jiscmail mailing lists; lis-e-journals, lis-serials, lis-scotland, scotslink. The aim of the marketing strategy has been to generate interest in the project at both ends of the publishing chain; amongst publishers initially as they would provide the content and later, amongst institutions and librarians as they would be the end-users and subscribers. It is electronic marketing that has generated the most interest with enquiries being received from Spain, Germany and the United States. The Universidad de Oviedo in Spain receives print copies of Scottish Studies Review through its membership of the Association for Scottish Literary Studies (ASLS). We have provided Universidad de Oviedo with online access to the journal as a goodwill gesture following an enquiry and have proposed to the ASLS that they introduce an institutional membership fee which includes online access to the journal. To some extent it is now up to the publishers themselves to market the online version of their journals in order to generate a level of

interest and uptake that will produce sufficient revenue to cover the cost of publishing through SAPIENS. It will be difficult to ensure the sustainability of the service without a clear idea of what the uptake will be. It is this uncertainty as to the online market that has necessitated lengthy periods of advocacy and negotiation with publishers in order to ensure their involvement.

5. The live service (<http://sapiens.strath.ac.uk/>) is up and running, delivering current content, as it has been since January 2004. Sustainability based on subscription income may prove difficult. Commercial publishers themselves are aware of this difficulty. Business models for electronic publishing are not yet stable. Pricing in the non-traditional online market proves difficult as cost recovery has to be balanced against an uncertain marketplace, making it difficult to gauge the level at which to set subscription charges. We are in a position to inform publishers who wish to publish through SAPIENS what levels of cost to expect and the various options and services that can be provided. As the SHEFC funding runs out at the end of October 2004 publishers would, from this point forward, have to be able to commit to paying the electronic publishing charges before SAPIENS can put their publication online. This requires a leap of faith on the part of the publishers. This element of uncertainty may be a factor in encouraging small scale publishers to view the risks of the uncertain environment as outweighing the benefits of online publication, and to continue with their traditional production processes until their audience forces them to do otherwise. On the other hand the growing awareness in the importance of knowledge transfer, the global reach of the Web and gathering momentum of the open access movement may provide significant encouragement to those prepared to manage this level of uncertainty.

References

Nielsen, J. *The Web in 2001: paying customers*. Fremont: useit.com
Available URL <http://www.useit.com/alertbox/20001224.html> (checked 25 October 2004).

Tenopir, C and King, D.W. *Towards electronic journals: realities for scientists, librarians, and publishers*. Washington: Special Libraries Association, 2000.

3. How has this project helped with the implementation and further development of institutional strategic plans and future strategies?

The work of the project has been in line with a number of national and institutional agendas. SAPIENS furthers the aims of Scottish Executive's Digital Scotland initiative (<http://www.scotland.gov.uk/digitalscotland/>):

- to improve the competitiveness of Scotland's businesses and create opportunities to sell Scottish goods (in this context 'knowledge

products' such as Scottish research) and services (their delivery over the Web) across the world.

- to ensure that Scotland obtains and retains maximum economic and social advantage from information and communication technologies.
- to provide greater access to knowledge and opportunities to improve skills.

SAPIENS is also in line with the Scottish Confederation of University and Research Libraries' strategic aim (<http://scurl.ac.uk/about/scurl.html>):

- to improve services for users and maximise resource through collaborative action.

SAPIENS complements SHEFC's strategy relating to knowledge transfer (Aiming Higher and Further, Scottish Funding Councils for Further and Higher Education, Joint Corporate Plan 2003-2006) by making the output of innovative research available to Scottish publishers in order to promote economic growth.

SAPIENS is a supporter of, and a vehicle for, the open access movement in Scotland. SAPIENS fully supports the aims of the recently launched Scottish Declaration on Open Access

(<http://scurl.ac.uk/WG/SSISWGOA/declaration.htm>):

"We believe that the interests of Scotland will be best served by the rapid adoption of open access to scientific and research literature"

SAPIENS equips the Further and Higher Education sectors in Scotland to improve and retain control of the knowledge that they produce. The project has developed the infrastructure, identified the appropriate content standards and business models, and established the costs of offering such a service. It illustrates the value added services that the digital environment can provide in this context. Essentially SAPIENS offers an infrastructure for the branded dissemination of the knowledge produced by Scotland's colleges and universities.

4. What are the expected benefits of the completed project both to your institution and the higher education sector:

- a) in academic terms?**
- b) in financial terms?**
- c) in other terms?**

- a) The SAPIENS service makes the products of Scotland's knowledge economy available to a global audience. This should produce intangible benefits by raising the profile of Scottish universities and research, whilst heightening international awareness of Scotland's distinct identity. Scottish academic and cultural publishers provide a valuable contribution to the diversity of publishing. Many interesting aspects of Scottish culture are explored by small independent Scottish publishers. SAPIENS enables such publishers to have a presence in the international information environment. The importance of this is

that without a vehicle for raising its profile and making its content available, Scottish cultural and academic publishing may find itself pushed to the fringes of the modern learning environment. If the work published by Scottish publishers cannot be retrieved in the digital environment it will become increasingly marginalized. As methods of teaching and learning continue to evolve based on the use of networked technologies to access learning materials, this issue will become increasingly important. SAPIENS facilitates enhanced access to the output of Scottish academic and cultural publishers. SAPIENS content is accessible to a wider audience in the digital environment and, due to the project's application of metadata, it can be retrieved by both local and global search systems. Articles are catalogued as we publish them online and the records are uploaded into OCLC WorldCat (<http://www.oclc.org/worldcat/>), a worldwide union library catalogue, which makes the records available to its 9000 member institutions. Dublin Core metadata is applied directly to the articles, this allows for interoperability with web-based search systems, as well as effective retrieval using the SAPIENS service's own search facility.

With the threat of marginalisation comes new opportunities. The global reach of the World Wide Web allows Scottish publishers to provide content online that will be of interest to the Scottish diaspora overseas. Internationally there are many universities with departments of Scottish Studies; in Europe as well as the United States, Canada, Australia and New Zealand. Libraries at these institutions will be interested in electronic access to learning materials related to Scottish culture and heritage.

The Scholarly Publishing and Academic Resources Coalition (SPARC) Europe advocates work such as that undertaken by the SAPIENS project; "We advocate change in the scholarly communications market, support competition, and encourage new publishing models that better serve the international researcher community" (<http://www.sparceurope.org/>). SPARC Europe has given SAPIENS its explicit support

The work that SAPIENS has undertaken has produced valuable outcomes in terms of the understanding gained in content standards, accessibility, metadata and usability. This understanding has been disseminated through a variety of publications and presentations.

- b) SAPIENS is in a position to cost various options in relation to knowledge transfer. This financial understanding of the process of knowledge transfer will be important for universities if they wish to become more directly involved in the dissemination of research. An understanding of the cost of electronic publishing is vital for universities if they are to make well informed decisions about how research should most effectively be disseminated.

Electronic publishing will enable SAPIENS partner publishers to explore new business models and this may produce significant economic benefits in the longer term. The Web offers access to a global marketplace for their content. Through its partnerships with Scottish publishers the project provides an example of knowledge transfer between academic research and industry.

- c) In cultural terms SAPIENS adds to the diversity of content available online. The project has heightened the presence of Scottish research and culture. It provides a branded service to highlight the activities and output of Scotland's cultural and academic institutions.

5. What was the original completion date of this project? What was the final completion date? If any slippage occurred in the timetable please give details.

The original completion date was 30 September 2003, the actual completion date of the project is 31 October 2004. There were a number of factors which caused slippage in the project timetable. To some extent, the processes involved in moving digital content (the text of journal articles in this context) from one format to another were more complex than originally envisaged. As described above, for each publisher an individual electronic publishing process had to be developed in order to extract the required textual content from the proprietary software format that they could provide it in, into the open standards used by SAPIENS for online publication. The process of extraction combined with the formatting required for usability and accessibility in the online environment necessitated manual involvement from staff skilled in these areas, the process could not be completely automated.

It was vital that a technical officer was found with the right skills to implement the infrastructure and value added services that the SAPIENS service would require. The Centre for Digital Library Research was able to employ an appropriately skilled member of staff by pooling the funds provided for this resource with other research funding. This process took some time but was vital to the successful development of the service.

A significant factor in the later completion date was that the project had to move at the publishers' pace. The perceived and potential threats to existing revenue streams and business models that publishers identified in their views on electronic publishing have been outlined above. For the publishers involved with SAPIENS, moving into electronic publishing would require some degree of organisational and cultural change. The disruption that electronic publishing can have on existing business practices has been noted as a significant challenge by the Budapest Open Access Initiative, who suggest that projects such as SAPIENS may have to "overcome considerable systemic inertia to change the perceptions of various stakeholders" (Budapest Open Access Initiative, 2003).

Publishers had to be reassured that the project would move forward at their pace and that they would not lose control of their content. Negotiation and

advocacy in this regard was a factor in the slower than anticipated pace of the project. The project had to negotiate with publishers in order to find business models for the electronic environment that they were comfortable with. The gentle pace of these negotiations, combined with the development of the demonstration service, were crucial in retaining publisher involvement. The Open Access movement has members of staff, such as David Prosser, Director of Sparc Europe (<http://www.sparceurope.org/>), who undertake this sort of advocacy on a full-time basis.

References

Budapest Open Access Initiative, *Guide to business planning for launching a new Open Access journal*, 2003. New York: Open Society Institute. Available URL <http://www.soros.org/openaccess/oajguides/index.shtml> (checked 25 October 2004).

6. Describe any future programmes of work which may be based on outcomes of this project.

The SAPIENS infrastructure may be utilised in a number of ways. We will continue to offer the e-journal publishing service on a commercial basis to the existing group of publisher partners. The service may provide a vehicle for further exploration of Open Access publishing models. Another potential dimension to the service is assisting institutions to meet the requirements of the Freedom of Information Act (Scotland) 2002. The Centre for Digital Library Research is committed to continued support of the SAPIENS service as a test-bed and component of its holistic framework for digital library research. Should the Open Access movement in Scotland continue to increase in momentum and the cultural change in attitudes towards research dissemination reach its tipping point, the SAPIENS infrastructure will be available as an alternative publishing model.

In terms of further research, the service provides scope for exploring issues surrounding the evolution of scholarly publishing in the electronic environment and the ways in which the environment can enhance the process by facilitating interactive processes of knowledge transfer.

7. Any other comments.

Signed: (Project Manager)

Date:

Signed: (Principal/Secretary)

Date:

Please return to:

Margaret Henderson
Project Administrator, Strategy
Scottish Funding Councils for Further & Higher Education
Donaldson House
97 Haymarket Terrace
Edinburgh EH12 5HD