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iTunes at Birmingham City University

To reach a new generation of students, Birmingham City University has launched its own content on iTunes U – a dedicated area of the iTunes Store featuring editorial content from leading colleges and universities.

Anybody with Internet access can download podcasts from Birmingham City University's iTunes U area. iTunes U gives learners free access to a library of educational podcasts, similar to the way in which Apple's iTunes store offers flexible access to music.

Birmingham City University, an innovator in hi-tech teaching, has made available 200 podcasts on iTunes U, and more are planned. To find the University on iTunes U visit: <http://itunes.bcu.ac.uk>.

The learning store will be an invaluable resource to both students and the wider community, featuring a wealth of audio and video content which spans a range of sectors, such as the arts, performance, design (<http://www.bcu.ac.uk/podcasts/arts>), the creative industries, health (<http://www.bcu.ac.uk/podcasts/health>), the humanities, green issues and university life.

Content includes:

- A welcome message from Vice-Chancellor Professor David Tidmarsh
- Talks by leading experts such as David Lowe, who has composed the theme music for BBC News
- Showcases by leading Classical

performers, including virtuoso pianist Frederic Rzewski (<http://en.wikipedia.org/wiki/Pianist>).

Visitors will also be able to view award-winning student animation and professional documentaries. Specialist skills workshops for vocational courses, plus tutorials, lectures and round table talks by academics from a mix of disciplines, are available.

Using iTunes U, digital material can be downloaded easily, onto mobile devices such as iPods or iPhones, or simply viewed on a PC or Mac. Users who do not wish to enter the iTunes Store can also access the free material at: <http://www.bcu.ac.uk/podcasts>.

iTunes U enables us to share new knowledge, ideas and applied work with the world outside the University by using the very latest in new technology. Users can access learning material anywhere, anytime. It might be an undergraduate on a train or bus making their way to a real world lecture on campus, or someone on the opposite side of the world who may be eager to watch a podcast on digital audio production.

said project leader Oliver Williams, Head of Birmingham's Screen Media Lab.

Williams has produced and edited much of the iTunes U content. The Screen Media Unit is part of Birmingham School of Media based in Digbeth, Birmingham.

Trade Union History Online at Newport



The history of the Trades Union movement is just one of the subjects being developed as part of an interactive project designed to make online learning easily accessible for all at the University of Wales, Newport.

The innovative project, a collaboration between the University's Institute of Digital Learning (IDL) and the Centre for Community and Lifelong Learning (CCLL), is the first of its kind in the UK. It will allow online learners access to two digitised modules which examine the Trades Union movement and plot the major landmarks in its history.

Our aim was to create a fun, interactive programme to help maximise the support for online learners from both the tutors and their fellow learners

explained Angharad Halpin, Workplace Learning Coordinator for the CCLL. "We are proud to be developing modules which are at the forefront of 21st century learning, and providing something which looks very different from the usual online learning sites. By creating an easily accessible and consumer-friendly curriculum, we hope to bring the essence of university life to distance learners and overcome online students' feelings of isolation by making them feel part of a learning community," she added.

There has been strong support for the programme since it was promoted at last year's Annual TUC Wales Conference. The modules will be publicised via the Trades Union Congress Committee and Trade Union Networks, and piloted regionally, with the hope of disseminating the programme on a national and international scale. Matt Chilcott (above), Development Director for the Institute of Digital Learning, said:

As part of the development of the online distance learning materials, a number of final year students joined the Institute of Digital Learning for work experience in new media education productions. The additional content produced by students was of a high standard and will be used by new students taking their studies online.

This is one of many programmes offered to online learners by the University of Wales, Newport, along with the Combined Open Studies which is offered by the CCLL.

For more information contact Angharad Halpin 01633 432180, or visit <http://trade-unionactivist.newport.ac.uk> and <http://communityactivists.newport.ac.uk>. For details of all courses available at the University of Wales, Newport, contact the University Information Centre on 01633 432432, or visit <http://www.newport.ac.uk>.

Recession Brings New Life for Archivists

The Financial Times (11/08/09) printed an article by Alicia Clegg reporting that archivists are experiencing a new lease of life as major companies like Boots, Bulgari, Marks and Spencer and Audi celebrate their history.

Even HSBC, after successfully establishing an archive for their Asia-Pacific operation, are now considering doing the same thing for North America.

Although much of the archivist's involvement in preserving the commercial heritage of these companies can be considered to be traditional, the point is made that stereotypes are being confounded by a new breed equipped with IT, administration and record management skills.

They are also people who can make the connection between archives and the achievement of business objectives.

The archivists' role in knowledge management is proving critical in many contemporary organisations, particularly as issues like the capacity to learn from past mistakes, develop effective innovation programmes, and preserve the organisational knowledge base – as well as the implications of digitisation – become even more important.

For more information, go to <http://www.managingbusinessarchives.co.uk>.



We'd Like to Hear From You

Please give us your views on the MmIT magazine and the MMIT Group. Is there room for improvement? What are we doing well? Are we fulfilling your needs? How could we communicate with you better? What are your views on the website?

Please email your thoughts to the Managing Editor, Catherine Dhanjal at: catherine.dhanjal@theansweruk.com, or if you'd prefer to comment anonymously, please write to Catherine at 1 Yew Tree Cottages, Slines Oak Road, Woldingham, Surrey, CR3 7EA.

We'd also like to ensure our email list is current, so that we can keep you updated on our programme of events and other news, so please email us at catherine.dhanjal@theansweruk.com and we will add you to our list, or update your existing details.

Many thanks,

The MmIT Team

Routers of the Future

Goldsmiths College, University of London, has been working with TalkTalk to explore routers of the future – what they might look like and how they could be improved. TalkTalk asked Goldsmiths to consider four factors: signal strength, home style, energy efficiency and, finally, pure enjoyment.



TalkTalk's objective was to transform the humble router into something which people would want to shout about. Their Routers of the Future collection is bringing this idea to life. The public are being invited to visit <http://www.futurerouters.com> and vote for their favourite – and TalkTalk will consider the winner for production. At the time of going to press, it is fair to say that the designs, and the project itself, have met with a mixed reception, judging by the postings on the website. (Image Wireless router © Vallentin Vassileff; Agency dreamstime.com)

Dreamweaver and Contribute CS4 Combine to Create a Winning CMS



Adobe Dreamweaver CS4 is the industry standard for developing websites. Together with Contribute CS4, it can be used as a lightweight Web Content Management System (CMS) for small workgroups. With the Contribute Server, the workgroups can grow bigger. Even if a site has been created and Contribute is not available, Dreamweaver's InContext Editing allows end users to carry out simple editing procedures.

For some time now, Dreamweaver users have been able to create templates which other Dreamweaver users, or Contribute authors, could fill with content. These Dreamweaver templates have been part of the application since Macromedia days, and are a convenient means of allow-

ing one team of designers to concentrate on the style of the pages, while other teams concentrate on creating new pages and revising content, without altering the formatted layout. In Dreamweaver CS4, that template code still exists, but now comes in two mutually exclusive forms, one for InContext Editing, and the other for Contribute editing.

InContext Editing is an online hosted service, which allows end users to make changes to already-published web pages. To enable InContext Editing, the Dreamweaver designer must create editable regions on the pages, much as they used to do with earlier versions of Dreamweaver, for which they prepared templates which could be used with Contribute.

InContext Editing relies on an external online service to make the editing features available to end users, while using Contribute CS4 as an authoring application does not. Contribute, therefore, has much to recommend it, especially if the alternative is an expensive Web CMS.

Of course, many web developers will argue that an expensive Web CMS is not necessary because of the availability of free software such as WordPress.

However, in organisational environments, as well as for cross-channel publishers, free Web CMS applications such as WordPress and ExpressionEngine (<http://www.it-enquirer.com/main/ite/more/5/>) are not powerful enough. Alternatives like Drupal and Joomla are available free, but these are difficult to learn, and will require very good programming skills if they are to be used to their full potential.

A completely integrated website creation environment can be created by combining Dreamweaver and Contribute CS4. This combination requires less training and less development skills, especially with the new code hinting for AJAX and Javascript in Dreamweaver CS4. Even Contribute by itself can make it easier, and more efficient, to create and maintain a content web site.

Version CS4 of Contribute has several additional features which make it stand out as an all-round authoring tool. The in-browser support, automatic document saving, support for dynamic websites which use the Atom or Meta Weblog protocols, and Flash CS4 support are examples.

With its built-in review commenting functionality, Contribute CS4 is also capable of workgroup authoring. It is important to note, in addition, that Contribute CS4 integrates

with other Adobe Creative Suite applications such as Bridge, enhancing the ease-of-use and the efficiency of the workflow.

Bridge, used in conjunction with Contribute CS4's review functionality and Dreamweaver CS4's page draft feature, gives small workgroups the capacity to create basic versions. For Windows users, Contribute can convert Microsoft Office documents to pdf files and publish them.

During the preparation of this review, I spent some time working with Contribute CS4. Installing the application involved applying some magical potion, but when that had been done, Contribute's performance was relatively fast. In the past, Contribute has been virtually unusable because of performance issues. That is no longer the case with Contribute CS4, provided that automatic and regular polling of Adobe's server by the application is turned off.

While the application still cannot be described as fast, it is usable. If there are existing Dreamweaver templates on a page created in Dreamweaver, this is also not a problem. When a page without template regions opens, Contribute will create them itself.

Contribute allows authors to use CSS styles, both built-in and custom. Custom CSS styles should be listed in an attached style sheet, and should permit authors to use all the defined styles. CSS style sheets are now fully supported by Dreamweaver CS4, but designers who like to hand-code might still prefer to use CSSEdit (<http://www.it-enquirer.com/main/ite/more/1002/>), or Style Master.

Using Dreamweaver CS4 and Contribute CS4 together makes for a complete web design and authoring system. This will be appreciated by static web site designers, as

well as by dynamic site or blog developers. Perhaps the best feature of this valuable combination is that it allows a neophyte web publisher to scale the web design and authoring system efficiently. When using Dreamweaver and Contribute no longer meets the needs of a growing workgroup, the two applications can still be used separately as tools for the development of even complex dynamic sites.

Erik Vlietinck is the publisher of the IT Enquirer, (<http://www.it-enquirer.com/main/about/>), which is an information resource for creative professionals and cross-channel publishers. It includes free reports on technologies and products used in the publishing process. Go to <http://www.it-enquirer.com/main/ite/reportslist/>.

About IT-Enquirer

IT Enquirer is an online publication for digital designers and multi-media, multi-channel publishers.

The site contains reviews, technical background, product and trend analyses.

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Downturn Hits Intute Hard From 2010 as Spending Review Leads to Cuts

Following the JISC REVIEW of spending priorities for the academic year 2010-11, a decision was taken to reduce significantly the current funding to Intute. This decision was taken in the light of an expectation that JISC will be required to find genuine savings.

JISC will continue to support some aspects of Intute, especially its Internet research skills activities, but they have also recommended that the organisation should refocus, and examine its current business model. In the current economic climate this will be one of many difficult funding decisions.

Through agreements with many UK higher education institutions, and key bodies in the sector, Intute employs a number of people

and contributors. Following a period of consultation with other parties, and with due regard paid to the potential impact on staff, Intute will have to develop a scaled-down programme for the period 2010-2013. By the time this issue goes to press, the JISC Infrastructure and Resources Committee will have considered this in detail.

The implications of this, in particular for organisations which integrate Intute into their websites, library catalogues and virtual learning environments, could be significant, but it is likely that no changes will be made before the end of this academic year. Virtual Training Suite and Informs will be available until at least 31st July 2010.

It is likely that plans for 2010-2013 will be announced by the end of 2009, following consideration of the input from focus groups and surveys.

No changes before end of 2009-2010 academic year

Scaled down programme for 2010-2013

3M Software Improves Performance of Checkout Systems

Diversified technology company 3M has developed a bespoke system to increase the productivity and performance of library checkout systems.. The new 3M Centralised Stats, Status and Configuration Software has been designed to help maximise the performance of the system, as well as save time, when the software is used alongside the SelfCheck System from 3M.

Monitoring each SelfCheck device, the software provides libraries with real-time access to statistics and hardware status. This means that if a problem, such as a fault with the monitoring scanner, the coil (if EM), the reader pad (if RFID), or the scanner, occurs, the cause is highlighted instantly. The

performance of the SelfCheck System and other networked devices, at either a single branch, or multiple locations with a central site, is therefore improved, and the effectiveness of the entire system, for staff and users, is enhanced. The overall benefits of using the software are that it will:

- Save time and effort spent gathering and reporting statistics
- Record system-wide usage across individual stations, regions and at branch level
- Provide detailed item, patron and financial reports
- Accumulate statistics for specific time periods – daily, weekly, monthly and

- annually
- Duplicate aspects of configuration across the SelfCheck System from a central location
- Reduce the time needed to configure the SelfCheck System across all locations
- Provide information on the connection status of other networked devices
- Instantly update the dashboard status indicators to alert staff to interruptions or changes in status.

David Fletcher, Marketing Manager of 3M's Library Systems division, explained:

This product will help save valuable time and effort in any library. The new real-time detailed status screen has an intuitive dashboard which updates instantly, providing a green, yellow or red status indicator to create an alert for interruptions in status. It also shows the connection status of other networked devices. By using the new Centralised Stats, Status and Configuration Software, the time needed to configure the SelfCheck System across all locations is reduced, and reporting statistics are instantly available for library staff.

3M offers a wide range of technology options to suit all libraries, including RFID systems, Self-Check systems, Tattle-Tape Security technology and applications, detection systems and circulation accessories.

For more information on how 3M can help in the development of library services, go to <http://www.3M.co.uk/library> or send an email to: library-uk@mmm.com.



The Natural History Museum Darwin Centre – Audiovisual Innovators

The new state-of-the-art communication centre for the Attenborough Studio, in the Natural History Museum's New Darwin Centre, opened to the public on the 15th September 2009. As part of a £28million project, IVC Media designed and implemented the technology supporting a 64-seat, communication centre for the general public. Known as the Attenborough Studio, the project leads the way in the use of educational presentational technology, and includes five full-sized digital screens and 5.1 surround sound. The 8-storey high building houses the most significant expansion of the Natural History Museum in almost 130 years.

The Natural History Museum sees the Darwin Centre as representing the future for the Museum as a world leader in researching the burning issues facing humans and the natural world.

The Centre will be an important part of the public interface with the major science infrastructure of the Museum. It will help articulate the Museum's authoritative voice on issues to do with the natural world, and, hopefully, help inspire better care of the environment.

The Centre is a combination of broadcasting studio and presentation suite, integrating live audio, video conferencing and outside broadcast feeds. The facilities will enable the scientists at the Darwin Centre research laboratories to showcase their activities to museum visitors for the first time. Those involved believe that the facility will set standards for the "future practice of public education and engagement with science" said Patrick Stewart-Blacker, business development manager at IVC Media.

One of the programmes available in the Attenborough Studio of the Darwin Centre gives students the opportunity to listen to scientists based at the Centre, while they explain their current work in discussion and question-and-answer sessions. The new audio-visual technology offers a considerable advantage in facilitating these sessions. Topics covered with the students include forensic entomology, fossil research and malaria. The programme for schools provides full details of this and other activities. Go to <http://www.nhm.ac.uk/education/school-activities/schools-programme/index.html>.

Cultural Innovations, Panasonic, Medialon, Bose, Adder, Dell, Halivision and Paradigm worked alongside IVC Media on this project. Established in 1993, IVC Media has won recognition for innovative systems design, and provides design, installation and maintenance services for broadcasting, AV Services and Information Technology. Go to <http://www.ivcmedia.co.uk/>. Brochures can be downloaded. (Additional material and image Natural History Museum).

New Managing Editor for Multimedia Information & Technology

Catherine Dhanjal of TheAnswer will take over as Managing Editor of Multimedia Information & Technology in time for the first issue of vol 36 in February 2010. She will be only the third editor of the journal in almost 20 years, following in the footsteps of Dr. Anthony Hugh Thompson (1991-2000) and Lyndon Pugh (2000-2009).

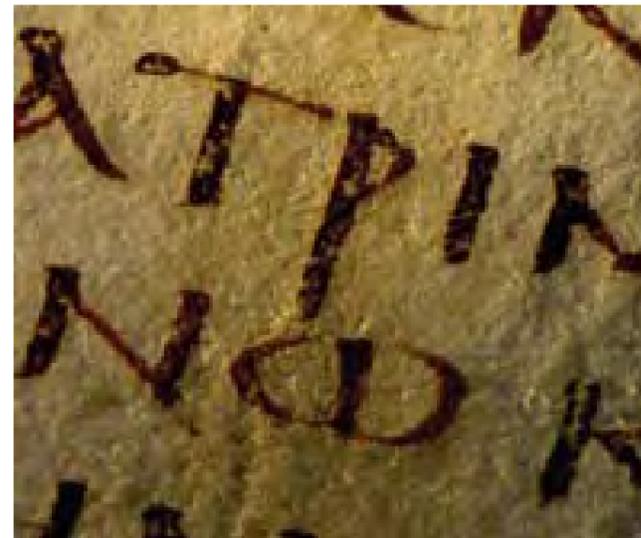
With a strong background in professional journalism and marketing, Catherine is a member of CILIP and the Chartered Institute of Public Relations, and her knowledge of the information services sector, especially its public relations and marketing needs, will stand the editorial board in good stead in what promises to be a challenging period for the journal and for the Multimedia Information & Technology Group. Her current and past clients include a number of major organisations in the information services sector. For all editorial matters, Catherine can be contacted at: 1 Yew Tree Cottages, Slines Oak Road, Woldingham, CR3 7EA, or by email at catherine.dhanjal@theansweruk.com. The url for the TheAnswer is: <http://www.theansweruk.com>.

International Collaboration Delivers The Virtual Codex Sinaiticus – the World's Oldest Surviving Bible

After four years of work encompassing institutions in the UK, Germany, Egypt, and Russia, the Greek parchment representing more than 800 pages of the world's oldest Bible, is now accessible online. The Codex Sinaiticus is the result of collaboration between the British Library, Leipzig University, the Monastery of St. Catherine (Mount Sinai, Egypt), and the National Library of Russia.

A remarkable collaboration, funded by the UK's Arts and Humanities Research Council (AHRC), between institutions in the UK, Germany, Egypt, and Russia has succeeded in creating a virtual presentation of more than 800 pages and fragments from the world's oldest surviving Christian bible, Codex Sinaiticus.

For the first time, people around the world can now explore high resolution digital images of all the extant pages of the 4th^c book, which was written, in Greek, on parchment



leaves, by several scribes, and had its text revised and corrected over the course of the centuries following its completion.

The virtual reunification of Codex Sinaiticus is the culmination of a four-year collaboration between the British Library, Leipzig University Library, the Monastery of St Catherine (Mount Sinai, Egypt), and the National Library of Russia (St Petersburg), each of which holds different parts of the physical manuscript.

The British Library marked the online launch of the reunited Codex with an exhibition and a conference, which was held on the 6th-7th July 2009. Entitled Codex Sinaiticus: text, Bible, book, a number of leading experts gave presentations on the history, text, conservation, palaeography and codicology of the manuscript. Go to: <http://www.codexsinaiticus.org/en/project/conference.aspx>.

By bringing together the digitised pages online, the project has enabled scholars worldwide to research, in-depth, the

Greek text. This is fully transcribed and cross-referenced, including the transcription of numerous revisions and corrections. Researchers into the history of the book as a physical object can also examine, in detail, aspects of its fabric and manufacture: pages can be viewed either with standard light, or with raking light, which, by illuminating each page at an angle, highlights the physical texture and features of the parchment.

"The Codex Sinaiticus is one of the world's greatest written treasures," said Dr Scot McKendrick, Head of Western Manuscripts at the British Library. "This 1600-year-old manuscript offers a window into the development of early Christianity, and first-hand evidence of how the text of the bible was transmitted from generation to generation. The project has uncovered evidence that a fourth scribe – along with the three already recognised – worked on the text; the availability of the virtual manuscript for study by scholars around the world creates opportunities for collaborative research that would not have been possible just a few years ago."

The Codex Sinaiticus Project was launched in 2005, when a partnership agreement was signed by the four partner organisations which hold extant pages and fragments. A central objective of the project was the publication of new research into the history of the Codex. Other key aims of the project were to undertake the preservation, digitisation and transcription of the Codex and thereby reunite the pages, which have been kept in separate locations for over 150 years.

Professor David Parker of the University of Birmingham's Department of Theology, who directed the team which made the electronic transcription of the manuscript, said:

The process of deciphering and transcribing the fragile pages of an ancient text containing over 650,000 words is a huge challenge, which has taken nearly four years.

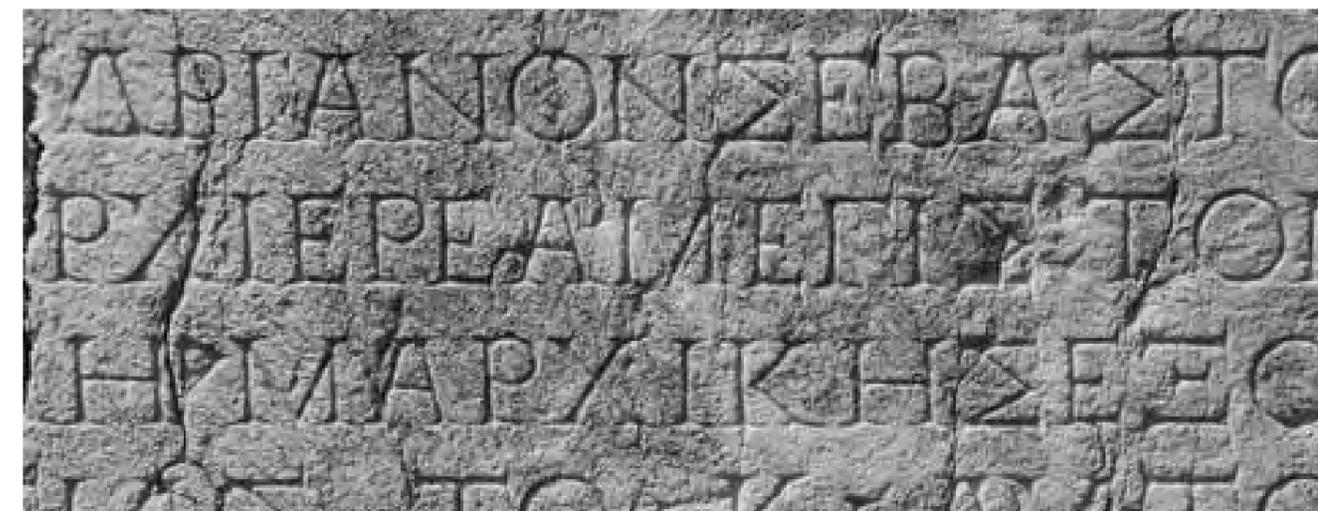
The transcription includes pages of the Codex, some of which were in poor condition, which were found in a blocked-off room at the Monastery of St Catherine in 1975.

This is the first time that they have been published. The digital images of the virtual manuscript show the beauty of the original and readers are even able to see the difference in handwriting between the different scribes who copied the text.

We have even devised a unique alignment system which allows users to link the images with the transcription. This project has made a wonderful book accessible to a global audience.

The Codex Sinaiticus is also a landmark in the history of the book, as it is arguably the oldest large bound book to have survived. For one volume to contain all the Christian scriptures, book manufacture had to make a great technological leap forward – an advance comparable to the introduction of movable type or word processing. The Codex was huge in length – originally over 1460 pages – and large in page size, each page measuring 16 inches tall by 14 inches wide. Critically, it marks the definite triumph of bound codices over scrolls – a key watershed in how the Christian bible was regarded as a sacred text.

See: <http://www.codexsinaiticus.org>.





Reviews

Edited by Lyndon Pugh

Christine Urquhart reviews *A Field Guide to the Information Commons*



Lina Coelho reviews

Going Beyond Google



A New Text on the Information Commons Which Accepts Assumptions too Readily

Forrest, C., and Halbert, M. (eds). *A Field Guide to the Information Commons*. Scarecrow Press, 2009. isbn 978-0-8108-6100-8. £39.95.

This edited volume is in two parts. Part One discusses changing ideas about the purpose and functions of an academic library and information service. Part Two then gives details of the arrangements for the information commons (or learning commons) at a variety of North American and Australasian libraries (no European examples are included).

In Part One, Elizabeth Milewicz discusses the shift from information provision to learning – a shift which took place alongside developments in ICT, which required spaces for library users to use workstations or their own laptops.

Joan Lippincott sets out the various components which might be expected in the information commons, and considers the impact on the ways of working, not just by the users but library staff as well. Staff at Shepley Bulfinch Richardson and Abbott set out the fundamental design questions which need to be answered by the academic institutions which are contemplating this change to information commons or learning spaces. They stress that the physical size of the campus, and the population, will influence what can, and should, be done, and note how some cost effective solutions can be found.

The next chapter, by a member of the Vantage Technology Consulting Group, provides an overview of the technological solutions. The final chapter in Part One, by James Duncan, describes a case study in customising information commons at the University of Iowa's Hardin Library for the Health Sciences.

Part Two describes, systematically, the various exemplars. After brief details covering the statistics (number of workstations, student enrolment, physical size, for example) the framework headings are:

- Purpose
- Services
- Software
- Print resources
- Staff
- Funding/budget
- Publicity/promotion
- Evaluation

Perhaps there was limited space, but some of the stated purposes do read as articles of faith, rather than strategies based on some evidence about user behaviour or learning theories. Unsurprisingly, the details of the evaluation are correspondingly limited. User satisfaction surveys and gate counts predominate here.

I found this disappointing, as more details about strategic planning and evaluation would have

been interesting for me, but the editors cannot be blamed for this omission.

The introductory chapter comments on the framework of cultural values, assumptions and judgements that surround the concept of library.

Sadly, most of the descriptions of the case studies exhibit complete and unwritten acceptance of assumptions. It is easy to equate customer satisfaction with customer value, but the two are not the same.

Useful though this book is, as a practical guide to what is happening in North America and Australasia, I am left with deep unease about the way academic libraries may be reacting rather blindly to technological trends, with little attention being paid to the way in which such changes are really having an impact on the work of their users, or their staff. That is acknowledged in the epilogue in the book, but there is much, much more work to be done.

Dr. Christine Urquhart
Department of Information Studies
Aberystwyth University

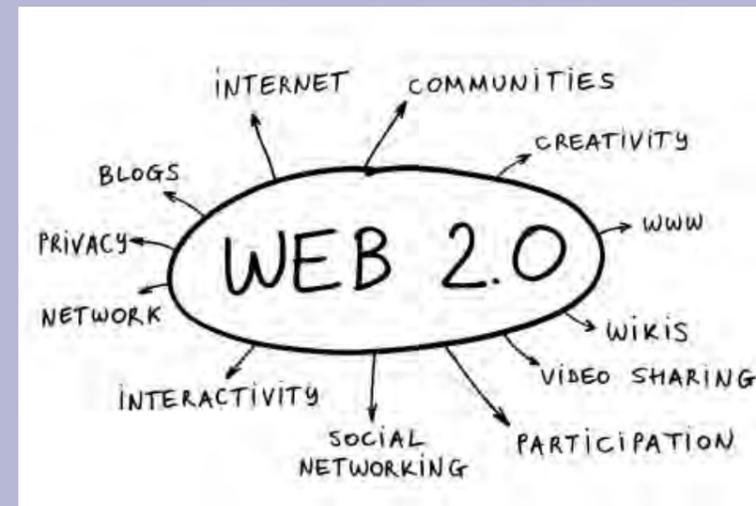
More to the Web Than Google Search Box

Devine, J., and Egger-Sider, F. *Going Beyond Google: The Invisible Web in Learning and Teaching*. Facet Publishing 2009. isbn 978-1-85604-658-9. £44.95. (£35.96 to Cilip Members).

This book shares the collective professional experience of the Chief Librarian and the Technical Services Coordinator of the LaGuardia Community College, New York. Their main purpose might have been to encourage librarians and lecturers to take every opportunity to point out to students that there is more to the Web than the Google search box. However, the material would appeal to any reader who is willing to explore the sites and tools presented.

As with any other book about the Web, readers should be prepared to deal with the fact that some of the comments will inevitably, by now, be out of date. This, in itself, might be of benefit, as time helps to reveal what is worth knowing, and distinguishes it from the temporarily interesting.

There are many challenges for anybody trying to persuade the Google generation that what lies beneath the surface of the Web might fall into the former category, and prove worth knowing. The comments on user searching behaviours are not only based on the authors' observations, but their



views are supported by reference to relatively recent research, which reinforces many of the points they make.

The Google generation's short attention span, their tendency to view only the top ten results and their belief that everything important is available free of charge and is accurate, are more than enough to frustrate even the most dedicated educators. The mere fact that only 25% of what is available on the Web can be retrieved – even by the best search engine – might not be persuasive enough for them.

Developing an understanding of how search engines operate, and how they index sites, provides further instructive evidence aimed at converting the superficial searcher, and turning surfers into divers.

User studies research is presented in easy-to-consult tables, and although, inevitably, some things have moved on and some results appear to be dated, the picture which emerges is still relevant: Searchers are often naïve and lazy, and are not even prepared to use the advanced features on a general purpose search engine.

By demystifying the process of retrieval and automated indexing, the authors show it to be restricted by prescribed parameters which can make the range of a search engine unacceptably limited. Although capabilities are constantly improving, they inevitably have to play catch-up with the technological developments, which are continually putting new formats and challenges in their way.

The book is divided into three parts. Part One describes the difference between the invisible and the visible Web; Part Two focuses on techniques for finding, and utilising, invisible Web content, and Part Three discusses developments which are narrowing the gap between the two, as technology shifts the dividing line between them.

The authors explain, clearly, the significant points that search engines cannot enter databases where answers to queries are dynamically generated, and that assembled files do not necessarily have fixed URLs. Many databases also require subscriptions.

Attempts by search engine providers to enable filling out HTML search forms, and to capture database content, are under way but there is still a long

way to go. Not every page on a website is indexed, and new search tools are necessary for new media, whilst current material is also difficult to capture.

Although the authors admit that any in-depth research on the hidden Web will be time-consuming and demanding, they draw attention to tools, techniques and tricks which can simplify the task.

For introducing students to the concept of the invisible Web by demonstrating the limitations of general purpose search engines, a number of different scenarios are presented.

The worked examples have inevitably become out-of-date, as referred to earlier in this review,

but following them through can still be useful in the difficult task of persuading both students and staff of the clear limitations of any approach which ignores the invisible Web.

The research case studies offer reflections on basic website evaluation criteria, related to authorship, sponsorship, purpose, audience and currency. The ideas put forward are well-presented, and introduced in a straightforward and structured way. There are clear illustrations, tables and interesting facts related to the topic.

Readers will find it worthwhile exploring, at their leisure, the sampler of tools which will help in the task of mining the invisible Web. There is no need to reproduce the list here, but try them, save them in your favourites, and use them. Numerous databases – some of them free – are also listed.

And as for those paid-for databases, being aware of what you are missing, even if you cannot afford it, may also be useful.

There is a review of specialised search engines, and the concepts of vertical and niche searching are explored with examples. Finally semantic web search tools such as hakia are presented.

The authors look at the growing industry aimed at narrowing the gap between the visible and hidden web. Commercial giants like Google have to continue to develop products which narrow this gap; an example of this is crawling using HTML forms.

The last section of the book also touches briefly on next-generation library catalogues and federated searching.

To find out what would be missed when all searches are restricted to the customary general purpose search engines, this book is a good place to start. No doubt things have moved on since its publication, but it will provide ideas, motivation, and footholds which can take searchers wherever they want to go.

As any good book written by a librarian should demonstrate, it has an excellent index and correct references.

Lina Coelho BMA Library

Finding Videos, Audio and Images

on the Web: Search Tools

Cindy Chamel reviews a number of options for multimedia searches

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Do you remember the old days, when search engines could not find the content of a PDF? They are long gone, and, in their place, searchers will find an embarrassment of riches.

Search engines for non-text media abound, with one list of video search engines alone topping 150. Add to that the image and audio search sites, and the opportunities are boundless.

Setting aside the recreational value of non-print media, it is worth looking at some sources which will improve search results for multimedia information, including videos, audio and images for both competitive intelligence and more general applications.

Figure 1: Search Engine Results for epaper Search

Search Engine	Images	Videos
Google	734000	590
Yahoo!	104280	930
Live	523	502

In the modern multimedia world, text-only information will no longer suffice in any organisational context. Useful business information, for example, will be found in speeches, product demonstrations, interviews, factory images, in product diagrams, photographs and so much more.

Consider this example, based on an actual research project. The enquiry was concerned with the development of insights into the business strategy of a privately-held, non-US company which was well-known for its ability to keep a low profile. Neither the website, nor the news, nor trade literature, yielded anything of substance.

A search of video sources through the use of YouTube eventually uncovered a 30-minute interview with the CEO, which was conducted at a conference. It was a mine of information.

Here is another example. The goal was to find an image of a particular aircraft known to be in development. The manufacturer had multiple reasons for maintaining the confidentiality of the design, so there was clearly nothing on the website, in journals, magazines, nor trade publications. Image

searching with multiple specialised search engines led finally to an aerial shot captured during a test flight.

Retrieving multimedia information requires the use of multiple search engines, as most will specialise in one format or another. I can recommend only one which searches for video, image and audio files, and this is **SamePoint**. According to its site, SamePoint will search for images, video, and podcasts across tens of thousands of social media sites. Bearing in mind the recent growth of interest in electronic paper and e-readers such as Kindle, I did a sample search on e-paper. The term epaper describes the technology used to create displays designed to look like ink on paper, while also retaining the characteristics of paper. Unlike the displays found on computer screens or mobile telephones, epaper is not backlit, so it requires an outside light source to see the electronic page. It is generally lightweight, thin and, sometimes, flexible. It should be noted that electronic paper and e-paper are synonyms for epaper, and that all these terms can also be used for comprehensive searching. For the purpose of this article, I ran some searches using the term epaper, since it is simple and mostly unambiguous. In SamePoint, the search produced 3,010 video hits, 93,239 images, and sadly, no podcasts or audio-only files.



In the modern multimedia world, text-only information will no longer suffice in any organisational context. Useful business information, for example, will be found in speeches, product demonstrations, interviews, factory images, in product diagrams, photographs and so much more.

When I started researching, the Yahoo! search engine would permit searches limited to video, audio or images. By the time you read this, Yahoo! will have long disabled its audio search engine. However, it, along with Google and Live, does facilitate image and video search. To give an idea of its scope, the search results for epaper are summarised in Figure 1 (left).

For this article, dozens of search engines were investigated, and many perfectly good search tools, generally focused on music, television shows and movies, are not included here. Specialised Search Sites for video include TubeSurf (searches YouTube and still in beta testing at the time of going to press), MySpace Videos, Google Video, and Yahoo! Video. TubeSurf search results are powered by Google, and can actually be searched with Google if required.

Our epaper search would look like this in Google:

epaper site:youtube.com OR site:vids.myspace.com OR site:video.google.com OR site:video.yahoo.com.

In the TubeSurf box the search would simply be: epaper.

The Google search produced 1,330 hits, while The TubeSurf box produced 461 hits.

Exploring the reasons for the difference is beyond the scope of this article.

Searchvideo.org makes the bold claim that one search engine can retrieve all online videos. The fine print says that the sites searched include YouTube, Veoh, Grouper, ifilm, Yahoo! Videos, Google Videos, MSN Videos, Metacafe, movie clips, video television and many videos from news outlets. It is powered by AOL, but has no connection with AOL, nor is it endorsed by that organisation. The site offers the opportunity to sort by rank, most recent, most relevant, highest rated and by title. A bar on the left side of the screen groups results by source, category and tag.

The epaper search retrieved 158 of the 234 videos from YouTube. Sixty-six were in the technology category and 15 were news. This functionality makes Searchvideo a useful option.

Blinkx is a popular and well-known search engine for videos. Founded in 2004, it claims to be the largest and most advanced, covering over 35 million hours of video. Its search technology was conceived at Cambridge University, and is protected by over 100 patents. The epaper search yielded 346 hits. The first 10 came from a variety of sources, including blip.tv, Web Video, YouTube, BBC News, All 5 Min Videos and Reuters. The results include an active thumbnail showing the first few seconds of the video. For the local search option, try Yidio, which is based in San Diego, California, USA. This search engine features Internet TV and online videos, as well as local news. Search results are transparent, in that they include a still view of the video content, the date added, runtime, the number of views, the assigned category and source (channel), as well as tags or assigned terms. Sorting by date, or highest-rated, is possible with one click. The epaper search yielded 234 hits.

For directories of media search engines or sites, the Digital Librarian, Yahoo! Directory, About.com (<http://websearch.about.com>) are good places to start.

The search optimisation (SEO) sites should not be overlooked either, as they are some of the best sources of specialised search engines

For the searcher, the value here lies in the local search option. Searches can be limited to specific local news sources in many US cities, as well as SKY News, CNN, and BBC.

Videosurf offers searching within videos. According to its website, it uses a unique combination of new computer vision and fast computation methods, to “see” inside videos and find content in a fast, efficient, and scalable way. Although epaper retrieves only 67 matches, they appear to include videos



not found elsewhere. The results show a still-shot along with a highlights reel which permits users to access any video at a point which looks interesting or relevant.

Specialised audio music search sites will obviously dominate the audio file category on the Internet, and a recent change at Yahoo! illuminates that fact.

After a warning posted on Sunday, April 19th, Audio Search closed on April 21st 2009.

Yahoo! thanked everyone for using the product and said “You can continue to find the music you are looking for on Yahoo! Music.” That clearly points toward the dominance of music in Internet audio files.

Of all the audio search tools I tried, the **PodcastDirectory** seemed to be the most useful. According to the site it scours thousands of podcasts daily to build an easy-to-use directory to the works podcasters are creating.

The results lists shows the source, the date, the length and the beginning of the content. The PodcastDirectory did not return any useful results on epaper, but electronic paper proved fruitful.

The **Internet Archive** collects audio files, and has organised the resources into sub-collections. Categories include

- News & Public Affairs with 6,034 items
- Non-English Audio with 561 items
- Open Source Audio with 235,551 items

The Podcasts sub-collection contains 1,851 items. History.com contains a collection of speeches searchable by keyword.

Categories here include

- Presidential Speeches & Audio
- Audio Clips from American History
- Audio Clips from World History
- Military Speeches & Audio
- Cultural Speeches & Audio
- Scientific Speeches & Audio.

Note that Podscope was not included in the list of recommended sites, in spite of the fact it has long been recommended as the one tool which searches the words within a podcast, and not just the tags and titles.

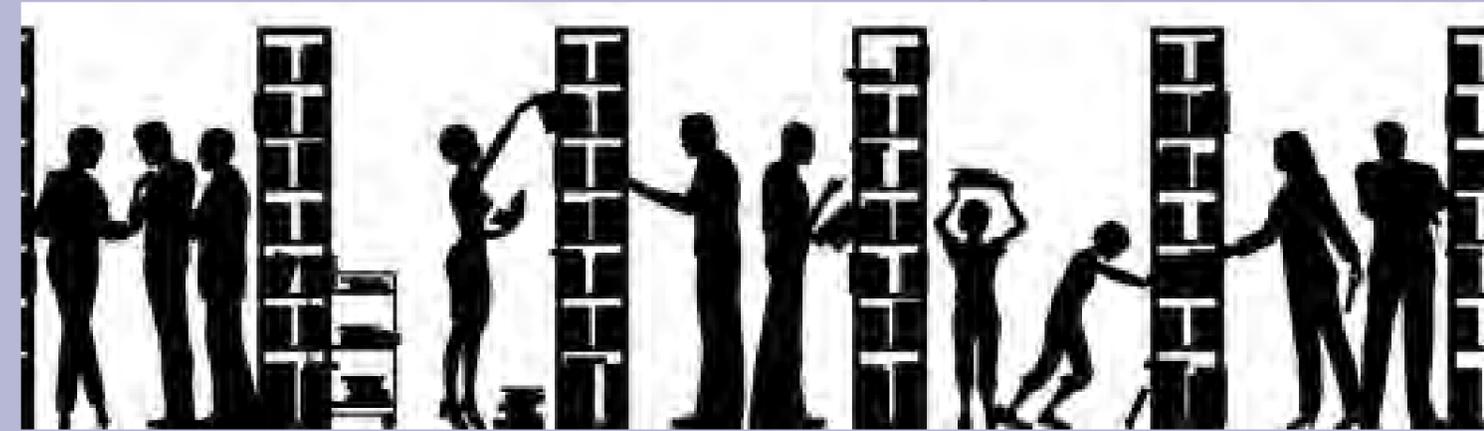
Podscope did not return any results for our epaper search, or for any synonyms including ereader, electronic ink, e-ink, and electronic paper, and its development appears to be stalled. The copyright date on the page footer is 2005, and the latest blog entries are from 2006.

Specialised Search Engines for image searching include Icerocket, which is probably best known as a blog search engine, but, in addition, it is also an excellent image search tool.

The epaper image search produced 388 hits. The results are mixed, but the search engine is probably still worthwhile. The first page showed 40 images, but less than half of these appeared to be relevant. Nevertheless, the relevant ones were interesting.

Flickr, owned by Yahoo!, is a very well known photo-sharing site, so it is a good place to turn to for image searches. In addition to the millions of photographs uploaded by users, Flickr has a partnership agreement with Getty Images, covering its stock photo library. The copyright and intellectual property policy must be checked before using images found on Flickr, or any of these sites.

smartsm Offers a Hand to Collection Management



Smartsm™ is a complete lifecycle stock performance improvement software package which is designed to revolutionise the way in which many public library services procure, manage and promote their stock. It is a proven product based on the powerful Evidence Based Stock Management (EBSM™) approach developed over the past 18 years.

EBSM is a complete methodology for Library Stock Performance Improvement – a methodology which assists librarians in making the management of stock more effective, more customer focused, less wasteful, and more measured and more performance-based.

Developed over the last 15 years by George Kerr, library consultant for Bridgeall Libraries, EBSM evolved from the dissatisfaction of having to purchase new stock and plan stock movement with totally inadequate data.

The widely-applicable EBSM framework, which has been developed to address this problem, uses data from a library service's own library management system, along with local target-setting, as its evidence base.

The power of the methodology comes from the EBSM toolset, which uses this evidence base to perform complex comparisons between the locally-set targets and the current situation, and then to provide a series of action plans to help the library improve performance and meet its targets.

Today, EBSM is practised by many Library Services across the globe, and they are all now able, as a result, to demonstrate superior stock performance and save time, and also money, thanks to the evidence-based improvement framework.

More important, libraries are helped in the delivery of improvements in stock provision to meet ever-increasing customer demands.

ebsm.com, the authoritative guide to EBSM, charts the history of its development from its inception to the present time, and contains

a detailed exposition of the principles of the methodology.

ebsm.com also acts as the definitive guide to commercial EBSM applications and training courses available.

Uniquely, smartsm provides guidance on what action to take to improve stock performance in public libraries.

However, one thing it does not do is provide more data. We are all already drowning in data, so this is not necessary.

The benefits of smartsm for public libraries can be simply stated: On average, smartsm customers can:

- Improve their stock turn figures by 23%
- Eliminate financial waste
- Free, for other purposes, approximately three person-years in resources per annum.

Work to validate and quantify the savings, efficiencies and performance improvements which smartsm can deliver for users is nearing completion.

As part of this process, a targeted national marketing campaign will share these findings with senior management teams within the UK public library services sector.

The heart of the software is a non-fiction module which allows libraries to assess



Cindy's Recommendations

Multiple Search Engines

Samepoint – images, video and podcasts across tens of thousands of social websites
Google
Live

Specialist Video Sites

TubeSurf
MySpace Videos
Google Video
Yahoo!Video
Blinkx
Yidio – good for local search options, eg. local US city news, SKY News, CNN and BBC
VideoSurf – searches within videos

Specialist Audio Sources

Podcast Directory
Internet Archive

Image Searching

Icerocket
Flickr – in partnership with Getty Images
Picsearch (Stockholm-based)
TinEye

Directories

Digital Librarian
Yahoo! Directory
About.com – <http://websearch.about.com>

For Fun

Picollator
Findsounds – for sound effects

On a lighter note, I found the following search sites fun, but not necessarily all that relevant. Notwithstanding this caveat, they are worth exploring. **Picollator** says it is the sole web and multimedia search and indexing engine which has a real-life understanding of digital images, (whatever that might mean:Ed). The site scans the Internet, collects digital pictures and creates an index, using pattern recognition to match visual objects in the images. Picollator will find what a user wants, with or without the words.

This tool offers a capability similar to TinEye, except that it focuses on faces. I searched on my own face as it appears on the **Shamel Information Services** website. First page hits included pictures of the lovely Shania Twain and a rugged Texas college instructor named William. **Titomo** is based on a visual image search technology which allows users to find similar images to the ones they have already selected. It draws on the Flickr database of photographs, and matches colours, themes and subjects. This

Picollator will find what a user wants, with or without the words. This tool offers a capability similar to TinEye, except that it focuses on faces. I searched on my own face as it appears on the Shamel Information Services website. First page hits included pictures of the lovely Shania Twain and a rugged Texas college instructor named William.

site, being extremely visual, is very hard to describe in words, but it is fun to try. **Findsounds** searches for sound effects, so this is the place to find bells and whistles, or whatever other light-hearted effects which might be needed.

For directories of media search engines or sites, the Digital Librarian, Yahoo! Directory, About.com audio search, image search and video search (<http://websearch.about.com>) are good places to start. The search optimisation (SEO) sites should not be overlooked either, as they are some of the best sources of specialised search engines. For instance, the list of over 150 video search engines mentioned above comes from ReelSEO, posted to the Slideshare site at <http://digbig.com/4yqdr>.

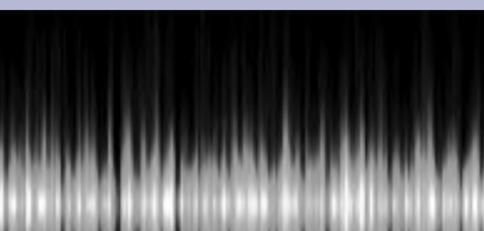


Figure 2: Icerocket Results Page

As an indicator of its success rate, Flickr returned 636 hits. and these can be sorted according to the most relevant, most recent, and most interesting.

Picsearch, based in Stockholm, searches over 3 billion images. According to the site, the search results will link to third party sources, but what those sources are is not transparently clear. It is obvious that searches can be limited by images or animations, colour or black and white, and by size or shape. The epaper search yielded 107,121 images, but duplicates abounded because the same image was delivered in various sizes. Nevertheless, images which I did not see at the top of any other search results list appeared here.

TinEye is a reverse image search engine. If an image is submitted, TinEye attempts to establish its origin, the nature of its use, the existence of modified versions of the image, or the availability of higher resolution versions. (See feature p9).

On its website, TinEye admits that its search index is very small, but it is growing. Our epaper search was not really suited to this search engine, so instead, I uploaded the logo image for Diigo, the social bookmarking site. TinEye searched over 1 billion images and returned 13 results. As a result, I found out that the Diigo image appears on several blogs from around the world. Interestingly, the Diigo website did not appear in our results list.

I also searched on the Association of Independent Information Professionals (AIIP) logo, and TinEye offered four results which were interesting but off target, and did not even include the AIIP website among the hits. My conclusion is that TinEye may not be the answer to a researcher's prayers, but are definitely worth keeping an eye on.

current, and past, use of locally defined discrete subject groupings of stock. This can then be followed up with recommendations about appropriate future provision of material. The exercise is intended to match demand, or need, with supply. The main objective is to attempt to maximise the use of new stock, and avoid unnecessary purchasing.



Where very low use of existing stock is identified, smartsm matches this data with low use subject groups in other libraries within the authority, and produces lists of material for exchange between libraries. Previous experience with this procedure in West Lothian Libraries showed clear evidence of regenerated interest in this material, once its locations had been established. This was material which had previously been relatively unused in its original locations. Up to 30% of such material then found new borrowers.

In developing the software with Bridgeall Libraries, it became clear that looking only at existing stock as the basis for future purchase decisions, while obviously a very powerful and detailed tool, has the inherent danger of dumbing-down book collections, and narrowing the range provided. For this reason, an essential component of smartsm is the Experimental Purchase module.

This has been developed as a work flow tool. Local librarians are encouraged to submit their suggestions for stock acquisition for their own libraries, based on local intelligence-gathering. Information is collected, for example, from the local users, local interest groups, disadvantaged groups, and the results of community profiling. This data is then submitted online to a stock purchasing manager, or other appropriate fund holder. An example of this in action concerned a branch library request for 50 items on job-finding options, with resources covering the preparation of CVs, interview techniques, career change and other techniques. This was partly inspired by a local support group for unemployed people, whose comments indicated that existing stock might not meet their needs.

Stock managers retain the option of agreeing, or disagreeing, with the proposals. Where purchase is authorised, a code is allocated to all the items in the group, and smartsm automatically tracks every experimentally-purchased group of items as the resources are put into use. Targets for expected use can also be set.

It is then an easy process to identify use patterns for each group, and measure the achievement of targets. Where use is disappointingly low, librarians can be aided in reviewing promotion policies for the target groups, building in a sharper focus on the appropriateness of separate items, reviewing demand, and modifying procedures appropriately – including measures to cope with increased demand.

The Experimental Purchase software and procedure represents a valuable tool for librarians concerned with minority interest material, and, in particular, librarians seeking to improve provision for socially excluded groups in the community.

Experimental Purchase is part of the standard smartsm package. Being designed specifically for use by librarians in the field, it requires no help or assistance from database administrators or IT experts.

A key feature of the smartsm and Bridgeall approach is that the software complements the existing library management system. In this way, it assists library services in maximising the use and value of their existing investment in technology.

The smartsm product also derives its powerful performance from the fact that it is beginning to represent the collective experience of the library community. From the innovative introduction of smartsm in June 2006, the software is now in use at Bournemouth, Stirling, Westminster, East Dunbartonshire, Essex, Poole, North Lanarkshire, Cornwall and Bristol. Many of these developments fall under the aegis of the South East Library Management System (SELMs) consortium led by Wokingham Borough Council Library Service. The Wokingham system is provided by Civica, and their partnership with Bridgeall offers significant efficiencies in areas such as stock performance management and acquisition, as well as improved performance and customer service levels.



Civica's Spydus library management system provides automated data extraction for use within the smartsm system. The result is a seamless flow of information, which helps library managers make time and cost saving decisions, and achieve performance improvements across their service.

Wokingham District Council is the first Civica customer to subscribe to the smartsm Service. The Council is part of SELMS, the

UK's primary library services consortium model, which is working to introduce online, automated library systems across the South East. It enables local authorities to share expert resources and to help deliver system efficiencies in response to the government's efficiency agenda and Department of Culture, Media and Sport (DCMS) accessibility requirements. A number of other library authorities are involved.



From time to time, MmIT offers space to library suppliers who are developing and marketing products of potential interest to information services. Neither the journal nor the MMIT Group endorse any of the equipment, or services, covered in these pages. Readers interested in a demonstration of smartsm™ should contact ian.

The authors review the response of the Centre for Dental Technology at UWIC to changes in the learning delivery requirements of dental technicians. This project was initiated in the wake of a reduction in the number of dental technology departments, and the consequent need for further development of distance learning.

After considering several possible solutions, Adobe Acrobat Connect, coupled with the use of relatively inexpensive PC and webcam support, was chosen.

A number of resource and pedagogical benefits have been identified, and the system is now used for inter-institutional collaboration in course delivery.

The background to this feature is the decline in the number of dental technology institutes in the UK, from 13 to 7 in 20 years. To minimise the affect of that reduction in numbers, distance learning was introduced with some success, and block release from the workplace became an essential part of the programme.

Under Jeffrey Lewis, then Head of the Centre for Dental Technology at UWIC, the work of the Centre involved delivering training to students from as far away as Cornwall, with Cardiff being their nearest centre. Distance learning students at the time did not enjoy the benefits of online support and personal computing to a great extent, so they were faced with, among other challenges, the problems of commuting between their home bases and Cardiff. The whole educational process therefore became cumbersome and inefficient.

The situation was transformed by the development of web-based communications, which helped organisations to respond to the growing course demands from both students and employers in the dental technology sector. Distance learning began to assume a different

character, and the resulting changes led to a range of benefits across the board. Students, tutors and lecturers, employers and the profession in general all gained.

The Welsh Video Network launched its Videoconferencing facilities in June 2001, in all HE and FE institutions in Wales. This was seen as a natural component in distance learning programmes. Yet the difficulties inherent in the development soon became obvious, with the process depending,

Synchronous Learning and Web-Based Communication With Adobe Acrobat

Ken Cheetham, UWIC Student Support, Jeff Lewis, Head of the Centre for Dental Technology, UWIC, and Adrian Clarke, Learning Development Officer (Media Specialist) UWIC

The Problem

Reduction in number of dental technology institutes
Accessibility of courses and institutions
Development of virtual classroom

as it did, on access to a similar facility at each end of a communications chain. This support was not easy to provide for students and employers, nor was it always easy for colleges to provide the necessary facilities and services.

More realistic solutions were clearly required, and one possibility was the use of MSN Messenger and Skype. These were both subjected to close examination. However, in their basic forms, both of the applications only allowed two sites to talk to each other, and, as the ideal solution required the creation of a virtual classroom, both were, therefore, discarded.

Viacom Escort/Cruiser was another possibility. This offered a relatively cheap solution, at £250 per machine, but it suffered from the disadvantage that every machine would need its own copy of the software.

Early in 2007, UWIC's Learning and Teaching Unit submitted a bid for funding to support developments in the project, now entitled Enhancing Learning Through New Technologies. Almost simultaneously, attention became focused on Adobe Acrobat Connect, which appeared to offer a number of advantages. It required minimal support in the form of a PC and a webcam, and possessed the capacity to host meetings with more than 250 participants, with the whole process running on an Adobe server. The funding bid succeeded, and £4000 was provided for research and development. This was quickly matched by the relevant professional body, the Dental Laboratories Association, and the project moved ahead with some speed.

The first phase was based on the teaching of two modules, one theoretical – in Anatomy and Physiology – and the second practical, in Partial Dentures. Trials of the equipment and software were held between campuses within UWIC in the first instance. The second stage involved trials between UWIC and the University of Bristol Hospital Trust, and the team reached the point where they were capable of delivering the module in about three months.

Technical matters, concerning sound and vision, were largely the responsibility of UWIC's Learning Development Officer (Media Specialist) Adrian Clark. Working closely with the Centre for Dental Technology, three camera types were tested, and the cheapest of these, at £18 each, proved to be the most successful. The most expensive, at £90, was significantly over-specified and too eye-catching and contrived.

The most significant problem encountered was ensuring a consistent and acceptable standard for the audio system. The microphones built into the cameras did not work at all well with audio output from speakers, even though the systems were equipped with echo and feedback cancellation. The use of headsets provided the best solution.

There was little or no difference in performance when connecting via USB or analogue mini-jack systems, with both working well.

Possible Solutions

Video conferencing network
MSN Messenger
Skype
Viacom Escort/Cruiser
Adobe Connect



As users became more practised in using and understanding the system, they found that the software was inclined to be unpredictable, and a number of patches were provided.

A full year of teaching with the equipment and the system followed, with licences hosted on the Adobe server in the USA. Feedback to UWIC's Learning and Teaching Fund providers, and to the Dental Laboratories Association, along with ongoing work with Bristol, led to another award of £16,000 from the Department of Health.

Difficulties Encountered

Audio system standards

Inability to support simultaneous online communication for all students

Difficulties with varying bandwidths

Sector-wide resource problems in dental technology

Lack of opportunities for social and cultural interaction

This was for the development of a delivery model, which would be tested with nine students instead of two, as originally planned. All of the current cohort have been taught in this way, and a further £16000 should be available for Year 2.

The project leader is committed to the view that the aim is not to teach a whole programme at a distance, but to reduce radically the number of expensive visits to the Cardiff centre by students working remotely.

The virtual classroom scenario has not worked as envisaged, as, currently, it does not allow all nine students to interact online at the same time. Adrian Clark has commented on this, ascribing it to an as yet unresolved bandwidth problem, as opposed to a possible software issue. UWIC is of

course connected via Janet, but students would not be able to match that bandwidth, nor each other's bandwidth. The norm in these circumstances is for the whole system to fall to the lowest bandwidth available, which is, obviously, that of the least well-connected user.

Meanwhile, in the industry in general, there were some resource problems. The University of Bristol Hospital Trust had a Dental School, but no dental technology teaching facility. Negotiations between the Trust and UWIC led to UWIC taking responsibility for the delivery of their course material, through the Adobe system, to Bristol's team for use with their students.

This is proving as successful as the programme in Cardiff, and, for Bristol, is a more viable alternative to the lengthy and expensive process of course development and approval. It is now clear that UWIC's material can be delivered to any dental school in the country.

The successful implementation of the scheme by UWIC's Centre for Dental Technology has brought additional benefits for the university. Following dissemination of the results through UWIC's annual Learning and Teaching Conference, other schools and departments have taken up the idea, with the result that the software was eventually purchased for location on a server within UWIC's IT services, rather than on an Adobe server in the USA.

Adobe Connect is now used by the Schools of Art and Design, Education and departments other than Dental Technology in the School of Health Sciences.

The executive summary of the project concludes that the key strengths in the application of this system are:

- Reduced travel to and from the educational provider
- Reduction in actual student contact time
- A stronger emphasis on the employer's mentoring role
- IT skills development
- The scope for lecturers to deliver a traditional lecture with minimal additional training or workload

It was found that students enjoyed the virtual

experiences, and were content to continue with the system, while academic staff found it simple to operate. They also believed that the system helped them to develop and deliver material quickly.

While considering the system to be successful, Lewis and Clark felt that technical issues regarding PC set up and audio/visual connections needed regular monitoring. They also conceded that more importance should be attached, in the planning process, to student inductions to the system and the nature of the materials used for electronic delivery. The resources commonly used were audio, whiteboards and overlays, video clips and internet links.

At the same time, there are three modes for displaying information:

- Opportunities for student interaction via voice or chat
- File sharing by download
- Record and playback for all sessions, accessible via a URL as often as required.

Apart from these practical issues, the experience underlined the view that the more philosophically-oriented aspects of university – or other institutional – education should not be ignored. Students who depend on a distance learning system, however good the technology and the material, will still not enjoy the benefit of social interaction with their peers, academic or otherwise. They will not benefit from the experience of living away from home, and both of these factors provide opportunities for learning the value of other cultures and ways of life.

The chance to discuss all kinds of issues with students and staff on other programmes may influence the quality and scope of a student's learning and academic performance, as well as their subsequent behaviour after leaving college. These opportunities should not be denied to learners, and awareness of these issues colours investigation of how the broadest range of educational requirements can be met, while using a distance learning programme with such obvious advantages.



The Conclusions

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TinEye Reverses the Search Process for Image Creators

TinEye (<http://tineye.com/login>), launched in 2008, and acquired Google Images earlier this year, has gone from strength to strength.

TinEye is a reverse image search engine, which establishes the origin of an image, how it is being used, and whether modified, or higher resolution, versions exist.

It is the first image search engine available which uses image identification technology rather than the standard processes involving the use of keywords, metadata or watermarks.

This is based on a technological breakthrough in image identification and tracking,

and is applicable to print publications and the Internet.

PixID is a comprehensive, automated image monitoring service which uses advanced image identification algorithms to identify where images are being used in print or on the Internet.

PixID does not use watermarks, so there is no additional data for image creators to add to images, and nothing which can be removed to prevent detection. (PixID, IDée Inc.)

The TinEye search process works by creating a unique, and compact, digital signature or "fingerprint" for the image, then compares this fingerprint to every other

image in the index, and retrieves matches, even partial fingerprint ones.

Exact matches are also retrieved, including those which have been cropped, edited or resized. Images which have been modified, colour adjusted, resized, heavily edited or slightly rotated are also retrieved.

TinEye does not commonly return similar matches, and it cannot recognise the contents of any image. This means that TinEye cannot find different images with the same people, or subjects, in them.

Nevertheless, the application has many uses:

- Identifying the image source
- Tracking the appearance of an image online
- Finding higher resolution versions
- Locating pages which make use of images created by other web designers or authors
- Identifying modified, or edited, versions of an image

Images uploaded to TinEye are not added to the search index, neither can they be retrieved nor downloaded by other users.

Copyright for all images submitted remains with the original owner or author, whose permission is required for reuse.

Search images submitted by unregistered users are automatically discarded after 72 hours. Links to these searches are also disabled after 72 hours, unless a registered user happens to save the same image.

Search images submitted by registered users are saved if the search history option is enabled in their user Profile.

Saved searches are available from the History page, and permanent URL links to any saved search can be bookmarked or shared.

Firefox or IE users can install the TinEye browser plugin, which allows searching by right-clicking on the relevant web image.

Users of Opera, Safari (including Safari on iPhone), or any other javascript-enabled browser, can install the TinEye bookmarklet. This facilitates searching any web page.

TinEye works best with images which are at least 300 pixels in either dimension, but the site can also accept images as low as 100 pixels in either dimension.

The default for sorting results is the best match, but sorting by worst match, biggest image or smallest image are also available.

TinEye remembers the selected option for the duration of the session. To date, TinEye has indexed over 1,121,525,514 images.

There is also a Cool Searches page (http://tineye.com/cool_searches) containing some of the most interesting TinEye searches. An embeddable widget page, which demonstrates the image identification technology behind TinEye, can be found at <http://tineye.com/widgets/display>.

This displays over 150 different, retouched, variations of the same image. They were all found on the web using TinEye, simply by searching for an untouched version of the original.

The technology allows users to scan the images and see the differences between them.

The url below each image is clickable, pointing to the web page where that particular version of the image can be found.

Common Craft Videos Make it Simple

Common Craft (<http://www.commoncraft.com>) is a video website which uses paper cut-outs and straightforward language to produce, and sell online, educational videos. A fun – and light-hearted – approach hides a commitment to clear explanation. Their first video, called RSS in Plain English, has been followed by videos for Google, Ford and LinkedIn. Over 30 productions have been viewed online over 10 million times. Their current focus is on building a library of educational videos designed to help educators save time. They introduce topics like Saving Money, Computer Software and Electing a President. Key issues like green technology and money and society are covered, alongside blogs, computer hardware and software, phishing scams, social networking, twitter, searches and wikis. For instance, Web Search Strategies (www.commoncraft.com/search) covers best practice in using search engines. Wikis in Plain English (<http://www.commoncraft.com/video-wikis-plain-english>) introduces wikis as a resource for organising and coordinating information, explaining why email is a poor choice for group discussion, and also covers the basics of using, and editing, a wiki page to take account of diverse needs.



News of Copac Developments

Over the summer, Copac has loaded the catalogues of the Royal Botanic Gardens, Kew, the University of St. Andrews' Library, City of London Libraries (Guildhall Library and London Metropolitan Archives) and York Minster.

These additions greatly enhance the already rich and diverse collections recorded on Copac, and will be of enormous benefit to the research community:

The Library and Archives at Kew hold one of the largest collections of printed and original material relating to botany in the world. The Library is the national collection for botanical literature and is international in its coverage.

St. Andrews has over one million volumes. The catalogue includes special collections covering areas such as theology, classics, history, English and Scottish literature, philosophy, science and medicine.

The City of London, Guildhall Library has the most comprehensive collection of printed works on London history and outstanding resources on diverse subjects such as food and wine, gardening, law reports,

English parliamentary papers, local history, marine history, clock and watch-making and archery.

York Minster Library is the largest cathedral library in the UK. It holds over 130,000

books with collections covering topics such as Theology, Art History, Stained Glass, History, Literature and Religious texts.

Information about further collections being added to Copac can be found at: <http://copac.ac.uk/libraries/forthcoming/>.

Copac has also introduced a development blog at <http://copac.ac.uk/development-blog/> to keep interested parties up to date with their activities.

Copac can be searched at: <http://copac.ac.uk>.

Advisory and help services can be contacted either by please emailing the helpdesk at copac@mimas.ac.uk.

To keep up to date with Copac news by subscribing to the Copac Blog, go to: <http://copac.ac.uk/blog/>.

The Aarhus mashup strategy concentrated on three issues:

- Digitisation, to open up the library archives and databases
- Rethinking library space, using technology to reinvent the physical library
- Involving people as partners in the project



The Mashup Library

Sidsel Bech-Petersen Aarhus Public Libraries

The concept of library 2.0 covers a number of developments which could form part of the architecture of the library of the future. This paper provides an overview of Danish projects ranging from websites, through user-driven innovation to new types of IT experiences. The mashup library in Aarhus is a powerful example of the approach in Denmark, embodied in MEDIASPACE, the new harbourside library which will form the centre piece for the redevelopment of the area. Flexible and dynamic, the result will be an open and accessible multimedia learning environment, reflecting the tenets of the Aarhus model for citizen involvement in the project. This was achieved through the input of a number of user groups from Citizens Services and Libraries.

The mashup library covers a range of activities. It can be a web application which combines data from more than one source into a single integrated tool. Here it is used in a broader sense. Mashing up is to do with opening up the closed knowledge silos, and making access to the library – both physical and digital – more fluid and dynamic. It is about presenting data in new ways, and, crucially, about a new dialogue with library users. To realise the mashup library, it is necessary to think on several different levels.

The Aarhus strategy concentrated on three issues:

- Digitisation, to open up the library archives and databases
- Rethinking library space, using technology to reinvent the physical library
- Involving people as partners in the project

Opening up the library archives and databases means presenting information in a way which brings together all the relevant library sources and services. For example: printed books, the bibliographical and subject expertise and experience of the staff, relevant events in the area, videos, blogs and Wikipedia content. With Danish commercial library systems unable to do this, the State Library in Aarhus decided to develop a search engine – Summa – to do this. It has now been released in an open source version.

Summa can be used to access simultaneously a number of different data and data sources. Results are presented in a single list sorted by relevance. A number of different criteria can also be used to also prioritise the enquiry.

Silkeborg Public Libraries have given their service more impact for users, by releasing their new website incorporating Summa. A simple, Google-like, search integrates different sources to retrieve content from their website, external resources, the library catalogue and the library staff. A search on an author retrieves not only resources in various formats, but also a member of staff who knows about the subject. Combining this with Wiki technology is the next step. Open source systems mean that everyone can join in and participate – and that there is no need to wait for the commercial systems.

Rethinking the library space is exemplified by the new library building in Aarhus. MEDIASPACE will be an interactive building which combines digital and physical material and gives the user a unique experience. Experiments in combining the physical and digital library began several years ago, as library services migrated from physical buildings to the internet and digital resources. Many library materials have become digitised, and many resources, such as periodicals, come as digital-only. In many libraries, physical shelves are placed centrally to display new books and new issues of periodicals. The problems with digital developments include reduction in serendipity – the facility to make happy and unexpected discoveries by accident – and the difficulty of displaying digital material. Many library visitors never consider digital resources unless they have a targeted need, and ask a librarian, or perform a targeted search. There are challenges in making the selection of a digital resource a natural action, and in using physical and digital materials to reinforce each other.

The **Hybrid Library** project was the first experiment in providing new kinds of displays to support serendipity and physical access to digital material. InfoColumn was developed as



Left: The new MEDIA CENTRE at Aarhus (centre)

part of this project. This can be seen as a digital version of a poster column, where librarians post announcements via a web interface. The posted announcements then appear as animated objects in an aesthetically-appealing graphic environment on the column. A visitor interested in a digital resource can place a Bluetooth-enabled mobile phone on specific spots on the shelf surrounding the column. Selected references to library materials are transmitted to the phone via an established Bluetooth connection. Adjustable range Bluetooth base stations from BlipSystems (<http://www.blipsystems.com>) were used.

An *InfoGallery* (below) displays an animated collection of InfoObjects on a large plasma monitor or projection surface on walls, floors or ceilings. This features a number of InfoObjects, each consisting of a snippet of text and some graphics. At random, an InfoObject may zoom to large scale, and



appear in the centre of the display for a while before changing back to its original size and position.

InfoGalleries are interactive. As the display is enabled, visitors may then click, or tab, on the touch-sensitive surface to explore displayed information in depth. Again, references to the information may be dragged to a Bluetooth phone or sent to the visitor's email address.

The intention is that the interface will be striking, rather than transparent, to the library visitor. The contents can be RSS, podcasts, or manually edited news.

The InfoGallery system is in use at all libraries in the Aarhus area. The system also allows content-sharing with other institutions.

The goal is to be visible to other places in the public space. Current projects involve the music hall, the city hall, the swimming baths, sports centres and also the citizen

service centres, of which there are a number.

Content-sharing means that, for a concert at the music hall, for example, information from the library catalogue and digital services, displayed outside the hall or sent to mobile phones, is available to support the concert and maybe surprise the audience. This kind of exchange can also take place between libraries.

iFloor (below) displays current information about available resources, and it is interactive. It houses a camera which is used to track users' shadows from the ceiling. The iFloor interaction is based on collective dragging of a single cursor to stimulate social interaction and knowledge exchange around the floor display. This attracted much attention during the progress of the pilot test period.

The iFloor camera tracking is integrated into the InfoGallery infrastructure via the sensor layer, and provides each user with a cursor to make selections in InfoGallery, by finger or pointing devices in the wall-based displays.

From 2004 to 2006 the Main Library in Aarhus managed The Children's Interactive Library project, focusing on two major issues of children's libraries of the future: novel design of space, and innovative ways of engaging and communicating. Two features of this project were the Story Surfer and the Bib Phone, both demonstrating how to combine digital material with physical space, and make it relevant for users.

Story Surfer, conceived as a way of discovering what the library can offer, is a browser for children's literature. Children step on buttons on the large interactive floor, and by doing so send the book of their choice to their table.



The Story Surfer integrates theories on tangible design, pervasive computing and the child's natural urge to explore. It endorses the use of multiple intelligences. It encourages the children to engage in collaborative search sessions by using their bodies.

By making use of pervasive computing, the searching of materials becomes detached from the traditional keyboard and computer screen. Instead, the Story Surfer (above right) offers physical objects as tools – objects with which children can search, investigate and play.

The technology in itself was of secondary importance, and the target group for this service was children of 9-14 years of age.

Another way to mashup physical and digital content is the *Bib-phone* (in English the Library phone), shown below. Library 2.0 is also about taking advantage of whatever the user can contribute to the service. Comments from readers, information on how



they rate the service, and other information they possess, can be used by the library. Bib-phone allows people to talk to books and listen to what other people have told them – a new, entertaining and different way of reviewing, and commenting on books, or even hiding secret messages inside books. The messages are stored in the book allowing other users to hear them. The target group for this facility was from 6 years of age.

The Bib-phone concept enables children to annotate physical material by means of digital recordings. They are able to speak into the books by placing the bibPhone over an RFID tag on the book. By using the BibPhone as listening devices, previous recordings are revealed.

The concept originated from children's reluctance to take part in written reviews, and from the growth in use of RFID technology. The BibPhone can also be used for hunting for messages left in books. A secret layer of information for children, attached to selected books, is an imaginative way of engaging with young readers.

Aarhus has a vision of becoming a digital city space, and libraries play an important role in this. *The Augmented City* is a mashup of digital material and the relevant physical



space. For example, archive material – old pictures from Aarhus and stories about Aarhus – can be accessed on the actual physical location in the city. In this case, the digital information is provided via mobile phones, and data is then made available as geo-tags, or saved in semacodes which can be read by a camera phone.

True to the principles of collaboration and the exploitation of readers' resources, users should also be able to add content to the digitised city, either by adding comments or new knowledge.

Co-creation embraces the concept of opening up digital databases, and of developing cooperation. In the same way, the library of the future also has to open up the organisation, and involve users. Traditionally, libraries have been transaction-based: delivering a book or delivering an answer. In the mashup library, relationships replace transactions.

Users are an important external resource. The question is: how do we mashup people? The answer includes new ways of involving users. Other sectors provide examples of opening up organisations to user input. An example is the news media, with sites where users write the articles and, on most news sites, comment, or offer opinions.

Libraries have to find their own ways of engaging and involving users. It is about gradual customer engagement.

The **Transformation Lab** challenges the notion of the physical library. The digital revolution asks the question: when everything is available online, why come to the library at all? The Transformation Lab project has taken on this challenge in order to create new images of the physical library of the future. Experiments were carried out publicly in the foyer of the Main Library in Aarhus. Here, ideas and tangible

models have been tested in a situation of close interaction with both staff and library users. The Transformation Lab consisted of five subsidiary projects which occupied the physical space in turn:

- Literature Lab
- News Lab
- Music Lab
- Exhibition Lab
- The Square

This project has contributed to the task of making the users visible in the library. In *The Square is Yours!*, users were allowed to make use of the Square, for example, for a workshop on an interest or hobby. This was regarded as a chance to open up a new form of communication between users and the library.

The clapping screen of the *Exhibition Lab* also offered users a chance to leave traces in physical space. Whenever a person clapped his/her hands before the screen, a digital impression, lasting until another person clapped in front of the screen, was created.

The Gobelintapestry consisted of a photo mosaic, depicting the library's users. Individuals contributed to the installation, via web cam, with their own portraits. The photo mosaic also responded to people's movements. One user commented:

I feel drawn to the Exhibition Lab because it stands out from the rest of the library. The fact that the Gobelintapestry is interactive and dynamic fascinates me. It convinces me that the library can be used for recreational purposes – as a breathing space.

The innovation process in many libraries was once closed. Aarhus rejected this, seeing improvement – and indeed survival, as requiring an open innovation process. The project *voresbibliotek.dk* (ourlibrary.com) is a website inspired by Dell's Ideastorm. The site acted as a focal point for new ideas, and allowed users to vote for suggestions, as well as discuss them. Set up as an experiment, the site is no longer available, but the library is considering whether or not it should be a permanent feature. The website was live from October 2007 to July 2008.

Litteratursiden is a Danish fiction website. It is one of the most popular library sites in Denmark, but in order to retain this popularity, the site is continually redesigned. The intention is to open the site to user comments, and introduce new features which will support dialogue. Possibilities include blogs and comments, user profiles, and many features Amazon patrons will already be familiar with.

Another important notion is that the dataset for this project should be open to allow easy importing into other systems, including websites, the infogallery system, mobile phones, other fiction websites, author websites and bookshops.

Mindspot is a project at the Main Library in

Aarhus. Its purpose is to establish what the future library for young people would look like. As part of this, six young mindspotters have been hired. They work on the project and are ambassadors for the library, as well as acting as guinea pigs to test what is likely to work with young people. They help create a network and bring new competencies – knowledge of web 2.0, skills in moviemaking and photography for example – to the project.

Web 2.0 is a line of thought centred on the integration and presentation of data and dialogue in a new way.

In the same way, Library 2.0 is a cultural movement away from the traditional dissemination of the library's own resources towards an expanded service, embracing the integration of external resources and additionally providing an opportunity for users to relate to various issues and to express opinions.

Library 2.0 makes new demands on libraries and librarians, due to new ways of thinking, working, and relating to users.

The development so far has mainly focused either on the libraries generally, or on the digital services of the libraries.

The MashUp Library gives occasion and opportunity for merging the physical library with the digital. It has now become possible to integrate external data with internal resources, and, because of this, libraries can provide users with an experience which is completely different from the one they have been used to so far.

In addition to this, the digital possibilities involve entirely different dynamics, and provide an opportunity for users themselves to contribute in innovative ways, which other users can benefit from.

Another lesson learned is that the library should be visible wherever the users are. The *Spotmobile* is a technology-filled camper which does just that. Mobile, it is present at events attended by young people, and it uses the tools used by youth – such as Flickr, YouTube, Wikipedia, and Facebook.

Users have different needs, and often have difficulty expressing these needs. User-driven innovation has to overcome this difficulty. *Unleash the Library Users* explores different methods for engaging with users and ensuring their involvement. Workshops, and touch point interviews with non-users are employed.

The project has also created Personas. These are model users which can be deployed to help refine communication with users, and involve them, when a new

development is being under consideration.

The Village Square (right) provides a space where citizens have the opportunity to create their own agenda. This has proved an effective way for the library to initiate communication, and give the citizens an opportunity to make an input.

There are also other ways in which technology can be used in the library space to ensure that users' voices are heard, and that the opinions of the citizens are sought and considered. Through the *Voices of the City* channel, important core values relating to developments and services in MEDIASPACE were gathered, and acted upon.

An interactive table (below) with various scenarios was devised, and placed in the Main Library. Sound scenarios, and the opportunity to record comments, were built



into the table to permit interaction. The content of the table was regularly changed. In the Main Library in Aarhus, visitors began to speak to the table, and their views were collected. The table also formed the centre point for 10 focus groups, again with the responses analysed. The results were incorporated into the seven core values of MEDIASPACE. Some of the statements also inspired ideas about what further changes should be made.

The current situation is that the new library search engine in Silkeborg is operational, and Aarhus and Copenhagen will develop their new interface over the next year. The InfoGalleries have been in use for over two years at Aarhus, and usage statistics for a wide range of activities can be collected and analysed. The iFloor has been further developed, and is in use in schools in Denmark. The BibPhone and Story Surfer prototypes are not yet in use. The new website for Litteratursiden, providing new possibilities for users, opened in January 2009. MEDIASPACE itself will open in late 2014. Other projects, such as Families and Play in Libraries, are planned. In Spring 2009, Mindspot and Unleashthe Library users presented their work. Unleash the Library has prepared a guide to user-driven innovation, and this will be available for downloading.

Many lessons have been learned, but the most important ones are to forget about silos and portals, let the data work for us, and think dialogues and web services.

The rethinking of library space has helped to refine our ideas about how to design interactive installations. These have functioned as links between the physical and the virtual library.

In future, we will see a variety of new kinds of displays, and new ways to present digital information. The overall goal of interactive installations like ours is to help people discover useful information or inspirational material, and there is still work to be done to increase our understanding of how awareness of digital information in the physical library can be enhanced.

Aarhus is also planning to include sensors capable of supporting more advanced interaction with the infogalleries. In particular, it is desirable to provide multi-user interaction with the large-scale displays on columns, walls and floors.

The cell phone will be the interface of the future, and further investigation is required in this area to establish how it can be combined with the physical library and the extensive range of interactive installations which

are now deployed by the library.

An installation like iFloor mashed up the knowledge of the library and its users in the physical space, but it also brought about new forms of communication; people found it easier to talk to each other about iFloor, and the installation introduces a more relaxed interaction into a library setting with some success.

There was some reinforcement for Spool's (see further reading) idea of using "seducible moments": that is, trying to catch the users' attention at times when they are willing to receive information.

Spool's examples are from website dialogues, where seducible moments occur while closing a dialogue, for example, in an online shop after confirming the transaction. In the physical context, there are many potential seducible moments in queue situations. This is where people hate spending time idly, but where they have the opportunity to watch, or even respond to, interactive installations.

A final lesson is that playful and visible interaction obviously helps create awareness of an installation, and stimulates interest. Experiences with the iFloor, and with installations like TextRain (<http://www.camilleutterback.com/textrain.html>) show that unusual interactive behaviour by users attracts the attention of other users.



[camilleutterback.com/textrain.html](http://www.camilleutterback.com/textrain.html)) show that unusual interactive behaviour by users attracts the attention of other users.

There is a general trend away from transparent "easy to learn and efficient to use" interfaces towards more aesthetic interfaces with more impact. This is why the physical library should engage the user in different ways.

The success of the TransformationLab confirmed that users want to be involved in the library of the future. This is best done through creating a flexible, open space, where experimentation can take place. It will change conceptions all round, and allow users to claim the space. The key lesson learned was that it is often the simple techniques which produce the greatest impact. User involvement depends, to an extent, on designing a process which offers an instant result. Users have to be regarded as a developmental resources, and their input sought. This will require new roles and practices in libraries.

To maintain momentum, Aarhus Public Libraries are about to launch a wiki to collect the experience and knowledge gained. This will be open for comments and input from everyone who is interested in the library of the future. It will be available at <http://www.multimediahouse.dk>.

The mashup of the digital and physical has just begun. In the future it will be easier and cheaper to acquire technology which can be built into our surroundings. It is important to remember that new displays and new ways of interaction do not make the mashup itself – it is first essential to discover what kind of digital content can be provided, and how it can supplement physical material held by the library. Finally, we need to understand how technology can initiate relationships and not simply facilitate transactions.

Acknowledgements

Other libraries collaborated with Aarhus: The Bib-Phone, iFloor, Story Surfer, InfoColumn and InfoGalleries were created in cooperation with ISIS Katrinebjerg Center for Interactive Spaces and the Alexandra Institute. The Clapping Screen and the Gobelin Tapestry were made in cooperation with interaction designer Signe Klejs. Litteratursiden was the result of cooperation

between several Danish libraries. Summa is an open source search engine developed at the State Library in Aarhus. The Silkeborg website was developed at Silkeborg Libraries. Voices of the City was made with FO Aarhus and the project Voices of the City. The idea for Vores Bibliotek was originally conceived at Roskilde Libraries, and implemented in cooperation with several libraries in Denmark.

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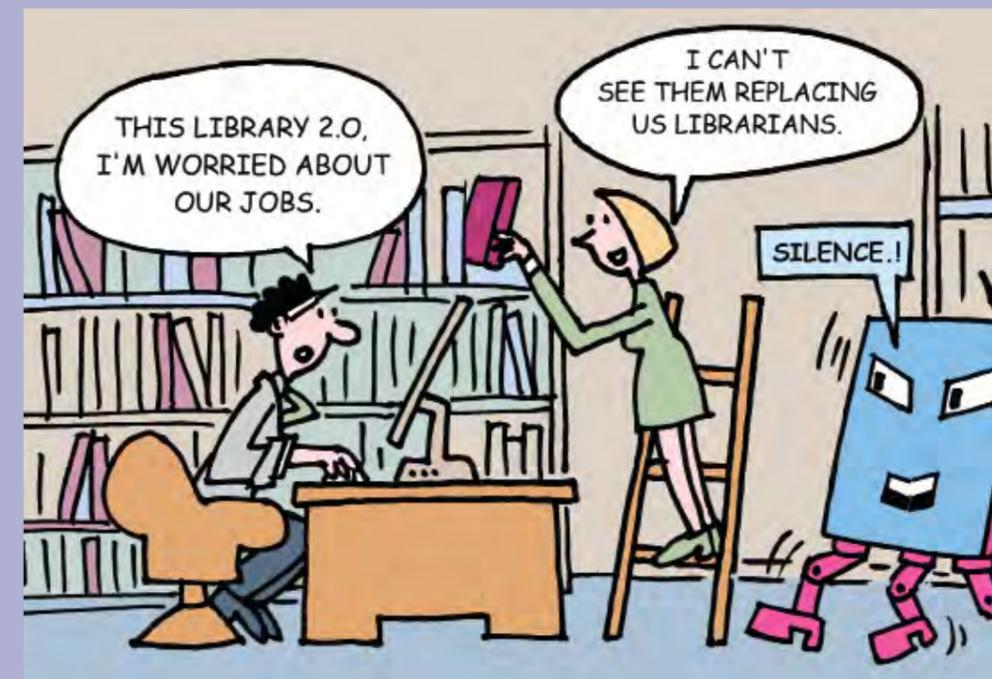
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