Background

This page contains details of a joint UCISA/UKOLN/CETIS workshop on *Initiatives & Innovation: Managing Disruptive Technologies* which was held at the University of Warwick on Friday 24th February 2006.

Title

Initiatives & Innovation: Managing Disruptive Technologies.

Abstract

Computing, IT and Learning Technology Services within HE institutions must maintain reliable, stable, high availability services whilst undertaking development work on new systems, applications and technologies. All this is done within a framework of new opportunities, and occasionally new constraints, provided by national and regional managed initiatives and development projects.

Additionally, as technology is increasingly used in the direct support of teaching and learning, new ideas and technologies arise not from the Computing Service itself, but from academic staff who, understandably, want maximum flexibility in their ability to introduce and exploit new technologies.

This workshop will explore the issues involved in managing these potentially disruptive technologies and will work towards a framework that can be used to balance the demands for innovation and constant development with the need for stability and security.

What Are Disruptive Technologies?

The Free Online Dictionary defines disruptive technology as: "A new technology that has a serious impact on the status quo and changes the way people have been dealing with something, perhaps for decades. Music CDs all but wiped out the phonograph industry within a few years, and digital cameras are destined to eliminate the film industry. The most disruptive technologies in history have been the telephone, the computer (and all of its offshoots) and the Internet.

Another definition from Christian Brothers University defines disruptive technology as: "Technologies that enable the breaking of long-held business rules that inhibit organizations from making radical business changes."
Learning Outcomes

At the end of the workshop delegates should:

- Have gained an understanding of JISC’s E-Framework strategy and the role of SOA (Service Oriented Architecture) in JISC-funded development activities.
- Have had an opportunity to discuss the implications of the E-Framework for institutional IT Service departments.
- Have learnt about the potential to support teaching and learning and research of a variety of Internet technologies such as instant messaging, Blogs, Wikis, Skype, etc.
- Have discussed some of the potential difficulties in providing, maintaining and supporting such technologies.
- Have explored approaches to reconciling the tensions between the user community’s desires to make use of such technologies and the difficulties in satisfying such requests.

Date and Location

This workshop will be held at Scarman House, University of Warwick on Friday 24th February 2006.
## Timetable

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<td>11:00</td>
<td>'Meeting Expectations - the Web in the 2(.0)1st Century' Robert Sherratt, University of Hull</td>
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Speakers

Oleg Liber

Oleg Liber is professor of eLearning at the University of Bolton.

He has been involved in learning technology development since the early 1980s, exploring how technology can be used to tackle the inertia of the traditional education system. Since 1998 he has directed the JISC funded Centre for Educational Technology and Interoperability Standards (CETIS), as well as continuing to explore the development of innovative technologies. His research interests are in the application of organisational cybernetics to the education system.

Oleg will be giving a talk on "Challenges for Institutions in Adapting to the Global Information Infrastructure".

Oleg can be contacted at <o.liber@bolton.ac.uk>.

Robert Sherratt

Robert Sherratt is Head of Systems Integration for the e-Services Integration Group, responsible for facilitating the development and operation of digital university systems and processes, in particular the services delivered within the evolving framework of the institutional portal. The Systems Integration team are responsible for the deployment of a number of key University services including the portal, content management system, repository and the ongoing evaluation of collaboration and learning environments.

Robert will be giving a talk on "Meeting Expectations - the Web in the 21st Century".

Robert can be contacted at <R.Sherratt@hull.ac.uk>.

Brian Kelly

Brian Kelly is UK Web Focus - a post funded by the JISC and MLA which provides advice and support to the UK Higher and Further Education communities and the museums, libraries and archives sector on Web issues. Brian is based at UKOLN.

Brian was a speaker and co-facilitator for the first joint UKOLN-UCISA event on Beyond Email - Strategies For Collaborative Working In The 21st Century held in Leeds in November 2004.

Brian’s interests include Web standards, Web accessibility, quality assurance for Web services and innovative Web developments, including collaborative Web tools, Web 2.0 developments, etc.
Brian will give a talk on "Managing The Unexpected: Facing Internet Challenges". Brian is also a member of the workshop organising committee.

Brian can be contacted at <b.kelly@ukoln.ac.uk>.

**John Dale**

John Dale is the head of development at e-lab, University of Warwick. He has overseen the introduction of several Web applications, including content management, collaboration software, authentication services and more.

John will be giving a talk on "Being Agile".

John can be contacted at <j.dale@warwick.ac.uk>.

**Organisers**

The workshop is being organised by UCISA, UKOLN and CETIS. Biographical details of the workshop organisers is given below.

**John Heap**

John Heap is Director of e-Learning at Leeds Metropolitan University, co-editor of the International Journal of Productivity & Performance Management, President of the World Network of Productivity Organizations and a member of the Council of the Institute of Management Services.

John represents UCISA in maintaining liaison with other UK educational agencies with an interest in Web services and Web support.

John was co-facilitator for the first joint UKOLN-UCISA event on *Beyond Email - Strategies For Collaborative Working In The 21st Century* held in Leeds in November 2004.

John can be contacted at <j.heap@lmu.ac.uk>.

**Brian Kelly**

Brian Kelly’s details are given above.

**Natasha Bishop**

Natasha Bishop is Events and Marketing Manager at UKOLN with responsibility for all events undertaken by the organisation along with marketing the organisation to the wider community. Natasha has over 6 years of experience at organising events and has been at UKOLN since October 2003.
Natasha is responsible for the administration of the workshop.

Natasha can be contacted at <n.bishop@ukoln.ac.uk>.

Matthew Garrood

Matthew Garrood is the Information Systems Officer at UCISA. Matthew works for the UCISA Executive and Operational Support and is based at the University of Oxford.

Vashti Zarach

Vashti Zarach is coordinator of the CETIS Enterprise Special Interest Group. The Enterprise SIG is for people exchanging data between college systems such as VLEs and Student Record Systems; developing Managed Learning Environments; and with an interest in e-learning frameworks and architecture. She is also studying part-time for an MA in Heritage Management.
Discussion Group Notes

Discussion Group 1A: E-Framework: Technical Issues

Few of the group knew what the e-Framework was - clearly the JISC need to put more effort into publicising it.
[I had made lots of notes of the discussion, but they were lost when I saved them and replaced by this other edit above]

What technical benefits will the E-Framework and an SOA development approach provide?
Inter-operability; - with students who're more mobile.
Insti's are moving further apart - competition - ...but, to compete effectively, we need to use some things (IP, telephony) that ARE invented elsewhere.
Standards outlined are useful. Why just for education? What's the scope?
Works both ways with commercial vendors - keeps community aware of their developments, but also influences them.
Does eF indicate how well specific technologies comply with standards? Would be more useful if it could be used as a guide when selecting products to fit boxes/roles in the eF. Would this attract too many lawyers?

What technical challenges need to be addressed in order for the E-Framework to be successful?
Is it meant to be exhaustive? (yes?)
Interoperability of identity - between institutions. Digital schizophrenia.
eF currently shows a predominance of 'politically correct' products (e.g. Jabba & Oscar for chat, but not MSN Messenger)
Where is 'security' in general? (and encryption as a more specific common service)

What skills will be needed in order to address the technical requirements in building and deploying the e-Framework?
What will happen to messaging with mobiles in the next few years. This will have a major impact.
Skills to structure & navigate thru eF, customise for own use.
How will primary schools adopt it?

Discussion Group 1B: E-Framework: User Issues

Trying to get an understanding of what "e-framework" actually means.

It relates to the interoperability of systems/services and business processes.

A set of rules to help to build the interoperability so that all things are "speaking the same language" so that we can bolt them together.

It will become a reference tool catalogue for sourcing services and utilites that will work together.
It is at a high level, so how will it apply as you get further down? How does this dovetail with existing standards? Danger of reinventing the wheel?

Open standards are key to it working along with buy-in from all or most stakeholders.

**Who are the main stakeholders?**

It's not just an IT thing. Management boards must be supportive. They must understand that the interactions are key. They supply the resources and the strong direction - "official strategy of the organisation" An organisation needs A framework linking people, processes, systems and information owners - this could be the one they adopt. The Information Strategy should fit into this framework.

Everyone in the institution needs to buy in to the framework. The framework needs to identify all processes and how they transfer information and what that information is and what tools are needed to access and make use of that information.

There are implementers and "customers" or users whose needs the framework needs to address.

Information owners and process owners are often hard to identify in Universities and indeed actually identifying and acknowledging the existence of processes may require culture change and is probably a pre-requisite for being able to implement an e-framework.

Workflow engines could help to trigger analysis, definition and understanding of processes.

**How do we sell an e-framework to a VC?** We are solving a lot of our issues about the joined up simple view for students already - despite the lack of an e-framework. But it can help reduce costs by helping to establish consistent component-based approaches to issues and save re-inventing the wheel. It can empower development and future integration of new developments and provide flexibility to adopt and adapt. There will be faster adoption of new technologies as a result. Better reporting and management of systems and processes.

**How does this plug in to lifelong learning etc?**

Could empower transfer of student information between institutions by getting a more level playing field.

**Resistance?**

Cultural - relinquishing ownership of information and processes Resource required to get from where we are now to where this may lead Ongoing support for newly adopted technologies - does Open Source have issues with sustainability?

**Benefits?**

Collaboration between institutions Information flow between institutions Mix and match degrees across institutions? Weight of numbers brings benefits and a voice in development, costs etc. from external vendors Helps you to fit in those people who "don't fit"

There will be minimum requirements for people to join in.
How should concerns be best addressed? Increase understanding. Educate people. Allow adoption of parts. Use simple terms and language - must be understandable.

Discussion Group 1C: E-Framework: Deployment Challenges

- What level of granularity do we go, would a university want to buy a service?

- Google maps api not a standard, services provided by a commercial company are a risk.

- What is our reason for doing SOA, we have to do it otherwise we will go increasingly homogenised.

- Do we stop being ISPs?

- What are the metrics for is the benefit of SOA and what does it provide?

- What is the business relationship to an SOA?

- How do you cost a SOA service?

- Institutional repository the idea that all their publications are in an institutions repository instead of a publishers.

- What is the end question, what is the role of the institution, to make money? To educate?

- Could we get side tracked by the technology and not the reason why.

- Technology gives us options and other flexibilities, it gives us chance to rethink however the core values must still be in place.

- Are there simple areas in which experience of E-Frameworks and SOA developments?

- Track the e-framework website and to check the process of the creation of toolkits, edina was involved with geoip services, performance, reliability, security were looked into.

- What is a reference model, we need clarification on this. Nobody is clear what a repository actually is? Perhaps we should be goal directed instead of technology driven.

- How can an SOA approach be applied to the procurement process of enterprise systems within your institution?

- You can't simply ignore existing long term investment in products.

- What is the distinction between outsourcing and SOA? Message labs in an example of an outsource.
- SOA architecture is based on webservies, the granularity is the difference, with your webservies.

- The big challenges are security, scalability and granularity and with that comes dependability.

**Discussion Group 1D: E-Framework: Building The E-Framework**

The group felt it wasn’t in a strong position to address the e-framework in an informed capacity – they were not familiar enough to engage with it at a deep level.

- Users not able to hook it to it very easily (the brick model/metaphor)
- Low visibility of exemplars/demonstrators
  - Monolithic systems – the group discussed the advantages of CMS’s – in particular the current popularity with institutions, staff and learners of Moodle – in providing seamless, self contained functionality as well as being manageable to staff
  - Definitions, middleware layer – easy to interface

User-defined matrix – students/teachers --- researchers – confident users/unconfident users User's as a group far from well articulated and very different.

We can’t just abandon frameworks and tools that have developed and that are successfully entrenched in institutions already. Re-engineering business processes.

Reengineering business processes- implementing tools and processes before responsibilities and frame works are in place.
- emphasis on the student journey – academics not buying in to reengineered processes
- FAA to come in and make sure it’s done – it’s all guidelines at present not regulations

Collegial framework doesn’t sit well with a business type process approach

Doesn’t necessarily inhibit innovation if there SOA – standards would help develop this

Recommendations about the service to Jisc: Level of sophistication not necessarily familiar to the audience/institutions
- they re doing a user study –
- need case studies, funding/projects, time & resources - Architectural structure

Building a brand new house vs. Barn conversion – most of us are in the barn conversion business. Have to show them being used as a service in a institution in which it wasn’t developed – not just as a small project - proof of concept's – limitations of small scale, short term funded projects at user level, pick tools that are needed in those moments, flexibility, that's the good part

Issues about staff by-in, skills levels, willingness to apply skills in the classroom.
Discussion Group 2A: Web 2.0: Management Challenges

**What are the managerial challenges to be faced in exploiting innovative new Web / Internet innovations in order to support your institution's needs?**
Managing expectations - of students, of what the inst can provide.

Distinguishing between responsibilities of service provider and author (e.g. for offensive content) depends on having clear policies; and procedures (such as a "I find this offensive" checkbox) so that content can be managed according to policy.

A blog/wiki is a better-managed environment than a university-owned wall, because the originator of content (or the objector, or the graffiti-adder) can all be identified if necessary.

Costs and benefits: (IDEAL c-b analysis - JISC project at Strathclyde). Identifying benefits may be hard before trying a new technology. Elearning & VLEs started via enthusiasts, without good business cases.

New technology appearing 'bottom-up' (a server under the desk) may become indispensable - before establishing the budget to keep it running. Organisational & cultural inertia. But if students like it enough, pressure will help it happen.

Risks: Bringing down the campus network. Getting sued. Not having an effective way of monitoring or identifying risks.

Balance between resourcing the student's university experience, and the rest of their lives.

If only a certain proportion of users use a NT/DT, how much cost and risk does it justify? Issues of ownership of the means of production, distribution & exchange (and communication).

How would you address those managerial challenges? (see above)
AUP. Adequate staffing. Communicating benefit (champions). Running pilots. Alignment with inst strategy; (and inform future strategy development).
Need a way to keep aware of available (student-hot) tecnologies.

Would a (possibly UCISA-backed) set of principles for adoption by institutions be helpful? (For example see Draft principles.)
Yes.

Could add headings on security, and inst management/policy (to green flyer).

Discussion Group 2B: Web 2.0: Technological Issues

Many institutions are experimenting with new technologies such a blogs, but few have full services. There are practical and legal issues to address. Technology solutions are available to manage and facilitate new technologies, but they cost. Willingness to
implement is needed. It's often easier to say no, limited resources, network techies not necessarily in touch with developments and new things students are doing.

Legal issues are a risk with piracy of audio and video and institutions are reluctant to take that risk - some have been stung before.

Investigating and defining acceptable use can be costly with legal fees and policing it can be time consuming and difficult.

Increasing demand is driving us to change our views. More are adopting/allowing Skype.

There are many benefits such as ease of use, increased collaboration, peer to peer video conferencing, presence management. Opening yourself up so that people can check your availability etc. requires a change of attitude or culture.

Rather than giving a flat no to these things we need to take them on board and "shepherd" usage, implementation etc. Empower the end user and the popular threads will reveal themselves. Take the bottom-up approach.

It's no good being authoritarian. People will do what they want to do, so we should have a more measured approach to this so that we can adopt the new things and adapt our policies to fit in.

This could be a hard thing to move away from as policing etc. can be very ingrained into the culture of an institution.

A change from active policing to responsive policing could work. Let it happen and react to complaints and when things go wrong. There is a danger that this can be equally time consuming or that the response needs to be more swift and cover all the issues that occur.

Third parties - depends on the information - there are legal requirements FOI, Data protection etc.

Could also be services - issues again with security, sustainability, potential loss of content.

Also how do these things integrate with the systems you already have?

The needs of the business are not necessarily the same as the needs of the student, for example many students have their own email addresses. Going to 3rd parties can cause problems - how do we know the message gets there? Some things have been blocked by host service providers in the past. Free things often become subscription services - what happens if we adopt a free technology that people then have to pay for?

How do we know that a given solution is the right one? SMS to mobiles is widely available, but not widely used. Phone companies are still trying to find the "killer app"
Do we give the end user the choice on their preferred methods? Take messages - words are just words whatever the medium for transmission.

Relies on the end user being empowered in keeping their personal data up to date. Do the systems necessarily meet those needs. Often the master record is the Registry, but students go to the library most to update details. Culture change needs to be made so trust them to keep it up to date, but they are notoriously unreliable.

Discussion Group 2C: Web 2.0: User Issues

What benefits may the user community gain from making use of innovative new Web / Internet innovations?

1. Most students are savvy now - so they will use it
2. Wikis low participation
3. There has to be a reason to do it - a driver
4. Communities are diffuse
5. Some communities are better off with alternatives - video conferencing vs skype
6. How do you assess the benefit?
7. Better for research collaboration - but they've just gone off and done it themselves

What difficulties might the user community face in use of innovative new Web / Internet innovations?

1. Bandwidth
2. Help / self-help

(if Web 2.0 is about participation then why should I collaborate (as a student) ... why should I give away my ideas when I am assessed as an individual and not a group ... a recurring scenario in many learning and teaching scenarios? In fact, why am I now adding these thoughts to the wiki on a Saturday morning when I should be relaxing in IKEA?)

What should IT Service departments do in order to maximise the potential benefits for the user community?

1. So much effort on keeping things going little time for innovation
2. Not too much prescription
3. Cost benefit of some of this provision? Let them use blogger?
4. Provide "Dummies guide to the technologies"

Would a (possibly UCISA-backed) set of principles for adoption by institutions be helpful? (For example see Draft principles.)

1. Cases for adoption / recommending - dangers
2. Statistics to back-up principles
3. The Draft Principles need something in for the institution - and something about their interaction with University structures (Funding, management etc).
4. Ignorance so need use cases - argue from a position of fact

Discussion Group 2D: Web 2.0: Cultural Change

Trust - balance between loss of control, issues of ownership, future consequences - and learner-led technologies and innovation. We talked about

Legal issues - using online services might sidestep some of the issues for institutions. 'Wolverhampton student case' - student criticized the quality of their learning experience.

Learning contracts - not about teaching and learning, about not getting sued.

balance between loss of control, issues of ownership, future consequences - and learner-led technologies and innovation. We talked about

Legal issues - using online services might sidestep some of the issues for institutions. 'Wolverhampton student case' - student criticized the quality of their learning experience. Learning contracts - not about teaching and learning, about not getting sued. Institutional changes – Brian answered this a lot this morning – negotiation, change in understanding of what IT services role is, change from NO attitude

Whole institutional approaches, recruitment policies, - changing institutions is a complex process that needs a whole institutional approach.

Group consensus that this is a huge issue, and that few if any institutions currently have a positive attitude towards new technologies – their integration and use.

Banning Skype and other IM programmes – those people in the group who are using them are doing so unofficially. It’s difficult to raise these issues because the likelihood is that current useful practices might be stopped if attention is drawn to them. Major policy changes that require a review of how we regard the learners’ use of technologies.

Risk management – and how it’s approached.

Resources – for example – student email being replaced by private services – do they want a student account? How could the service be approached flexibly? The group discussed their institutional experiences of mailing systems and issues.

CC licensing – private vs public work

Discussion about well established technologies and the institutional issues interesting in light of current inclusions of newer less trusted and tried technologies.

Responsibility on students – leadership issues – necessity for informed policy making –

Guidelines would be extremely useful!
"Challenges for Institutions in Adapting to the Global Information Infrastructure"

Oleg Liber
CETIS
University of Bolton
Making sense of the education system

TECHNOLOGY

ORGANISATION

PEDAGOGY
The design problem

Curiosity
Access to employment
Personal development
Empowerment

Knowledge
Expertise
Experience
Understanding

Number (learners) >>>> Number (teachers)
Variety (learners) >>>> Variety (teachers)
The traditional solution

Education System

HE
FE
Schools

HE Sector
Institutions
The traditional solution

HE Sector
Institutions

Institution A
Departments
The traditional solution
The traditional solution

Department X
Courses

Course P
Students

Student Fragments
- On one course
- In one institution
- In several institutions
- In several countries
- Life long
Each layer is regulated by the one above

- Funding
- Resources
- Planning
- Development
- Rules
- Quality
- Technology is co-opted to support regulation
- But technology is disruptive
Technology allows…

More…
Choice
Flexibility
Access
Quality

Used for…
Information
Assessment
Certification
Accessibility

…

Systems…
Repositories
VLEs
CAA
ePortfolios

…
Institutional technology

- Institution controls
  - Hardware
  - Software
  - User Interface

Technical Systems
- Equipment
- Network
- Email
- Student records
- VLE
- Library System

- Responsible for
  - Authentication
  - Access to resources
  - Software
But...

• Institutions have limited technical and support capability
• Technology development is stressful for the organisation
• Need to constrain use of technology
• Use of technology is richer outside education
• Institutions rely on sector level support
  – Repositories
  – Content
  – Services
Personal technology

- Varied experience
- At school
- At home
- Largely ignored by institution
- How could it be exploited?
What about soa?

• Does the institution need to own all technology?
• Use web-services hosted elsewhere?
• Assemble to suit requirements?
• Requires work
  – Identify the services
  – Analyse processes
  – Redefine some processes
Possible implications?

Of more and better personal technology and the availability of external services

Rethink the technical role of institutions

...from provision to support

A new role for IS departments?
A transformed service for teachers?

• Support teachers to develop pedagogy
  – Explore learning design
  – Analyse processes
  – High level staff development
  – Help staff identify requirements

• Extend VLEs
  – Solve unique problems
  – Yes to requests
  – VLEs become aggregation of services?

• Participate in JISC eLearning Framework
  – Understand what it can do
A transformed service for learners?

• Help the fragmented student get joined up
• Acknowledge student technology/skills
• Support skills development
• Require minimal technology
  – email address
  – Blog
  – PC
• Provide
  – Access to services
  – Learning materials
  – Learning designs
• Allow integration with non-education activities
Not…

• A hardware provider
• An ISP
• A database provider

But…

• Consultancy
• System design & integration
• Support
Personal Learning Environments?

• Reference model under development
• Standards based
• Support personal working
• Cross institutional
• Lifelong portfolio
• Interoperates with institutional systems
• User adaptable
Organisational change is difficult.

- New architecture(s)
- New role for service/support staff
- New requirements for students, teachers

- Tools needed for organisational design
  - To understand the education system and its parts
  - E.g. Viable System Model (or other)
  - Process analysis/design
  - Return focus to the primary activities of teaching and research, not regulation
Innovation for sustainability or disruption?

• Which is eLearning concerned with?
• Potential for complete re-design of education system
  – But huge structural resistance
• Insufficient return on investment
• Multi-level
  – Education system
  – Institution
  – Course
Summary

- The Education System was designed for a previous age
- Its organisational structure leads to fragmented students
- Technology has been recruited by institutions to support the traditional approach
- The system can be redesigned to exploit technology and enhance learning
- IS departments can play a leading role if they start with themselves
Meeting Expectations - the Web in the 2(.0)1st Century

Robert Sherratt
University of Hull
Abstract

• Today, students and staff now have an expectation that institutional content, services and applications are readily available via the Web.
• Building on an innovative organisational structure, Hull has attempted to satisfy these requirements via the provision of a flexible presentation layer, the University portal. This gives us the potential to take on the challenge of the anticipation of Web 2.0 and deal with diversity in location, device, and role as well as providing a standards based means of incorporating the outcomes of SOA activity and JISC projects in the future.
The Ubiquitous Web

• The Amazoogle generation
  – recent Library catalogue request
• Users expect ‘stuff’ to be on the Web
• Represents a challenge to institutions
  – technology to provide Internet based delivery
  – management of all this content
How do you manage this?

- Single presentation layer - portal
  - live for staff and students since September 2003
What is a portal?

• “A secure layer which aggregates, integrates, personalises, and presents information, transactions and applications to the user seamlessly, according to their role, location and preferences.”
Running a portal service

• **built on open-source software**
  – uPortal from JA-SIG (http://www.ja-sig.org/)
  – Java, XML and XSL

• **Staffing**
  – to launch (Sep 2003) - 1.5 FTE over 18 months
  – live
    • new developments - 1 FTE
    • maintenance and support - 0.5 FTE
Organisational adaptation

- Academic Services - converged directorate - IT, MIS, Libraries
- Breaking down organisational silos
Not everything is about the Web

• Hull is rolling out a ‘managed desktop’
  – homogenous environment for desktop apps, file and print
  – using Microsoft technology
  – resilient, reliable systems with built in redundancy

• But also needs cultural change – your computer will be managed centrally. . .

• . . . or self support – you can still have Greasemonkey, but at a price
Service Oriented Approach - features

• Services are components
  – well defined interfaces
  – implementation independent
• Self contained and loosely coupled
• Composite services can be assembled from individual services
• Often use Web Services and SOAP
• Fits well with a process oriented approach
A Service Oriented Architecture

- Rich Internet Apps
- Portal
- Middleware
- Web Services
- HR
- Student Records
- Library Systems
- JISC outcomes
- Email
- Content
A practical example

• Repomman JISC funded repository project
  – building workflow for an institutional repository
Taking the portal forward

• Requires infrastructure pieces currently missing
  – identity management
• Richer user interfaces
• More sophisticated differentiation
  – what roles and responsibilities do you have
  – what processes do those roles need access to?
  – what device is it running on?
Web 2.0 and portals

• Opportunity to use SOA with portal presentation to support elements of Web 2.0:
  – Strategic positioning
    • Web as platform
  – User positioning
    • you control your own data
  – Competencies
    • services, not packaged software
    • architecture of participation
    • cost-effective scalability

O’Reilly – What is Web 2.0
Presenting Stanford on iTunes

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Before You Begin
Overview Questions & Answers Quick Start Guide Apple Support
Web 2.0 – beyond traditional portals

• Tools can also be on the desktop
  – opportunities to work offline
  – Sakai OSX widget

• Desktop vs. Web – not exclusive

• The creativity of Web 2.0 is potentially infinite
  – e.g. mashups – Yahoo News + Astrology

• Continuing role of portal - part of the transformation layer
  – standards such as WSRP
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Managing The Unexpected: Facing The Web 2.0 Challenges

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About This Talk
This talk explore the potential benefits of Web 2.0 technologies in further the aims of our institutions. However implementation (and SOA applications) may clash with existing policies and organisation culture. The talk concludes by exploring ways of addressing such tensions.

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Web 2.0

What Is Web 2.0?

- A marketing term, rather than a formal technical standards ("an attitude not a technology")

Characteristics Of Web 2.0

- Network as platform
- Always beta
- Remix and mash-ups
- Syndication (RSS/Atom)
- Architecture of participation:
  - Blogs & Wikis
  - Social networking
  - Social tagging / folksonomies
- Trust and openness
- Users
Web 2.0 Exemplars

Let's look at some examples

- Del.icio.us: social bookmarks
- Amazon.com
- Google
- Blogging
- Wikipedia
- BitTorrent
- Flickr: The best way to store, search, sort and share your photos
- eBay
- Skype
Does your campus map use Google Maps, or is it trapped in an inaccessible, feature-poor GIF file?
Are your University buildings available?
Can you integrate data from disparate sources to enhance your users' experiences?

Note:
- BBC Backstage competition (free iPod??)
Potential of mobile devices in learning, research, etc.

What are your IT Service's views on PDAs, mobile phones, iPods, …

- Ban them  
- Turn a blind eye  
- Encourage self-support  
- Pro-active support

What's the reason for the views? (disapproval, resource costs, security, …)?
Note that Talis (UK library vendor) are publishing Blogs and Podcasts about "Library 2.0".
And UKOLN/CDNTL have also been experimenting.

Another question, are any libraries doing "podcast reserves" of lectures? We offer some audio/video tapes of lectures here though I'm uncertain how many professors would like their information online. We'll wait and see.
Are your University Podcasts available through iTunes? Aren't you missing out on a major distribution channel? (Note Student's Union radio shows are leading the way)

**INTERACTIVE**

podcasts | events | V&A trail

**PODCASTS**

You can now visit the museum without leaving your armchair! The V&A is broadcasting the first podcast to be published by a museum or gallery in the UK.

In this first edition, you can hear curators, conservators and researchers share their stories about art in the Paintings Gallery and see images of the paintings at the same time on your iPod, mp3 player or desktop computer.

Subscribe via iTunes or Google or listen directly at podcast.

If you subscribe you will automatically be updated with all the stories added in the future.

**What is a podcast?**

We have been able to listen to audio online for some time, such as individual songs or radio programmes. With a podcast, you can subscribe to a series of audio such as a radio soap opera or Every Object stories. This means that each new episode is automatically updated to your iPod, mp3 player or desktop computer as they are released: you don’t have to go back to the website and hunt for it. There are currently six episodes in the Every Object podcast. So subscribe today and hear all about Botticelli and his wombats!
What is the Open Content Alliance?

The Open Content Alliance (OCA) represents the collaborative efforts of a group of cultural, technology, nonprofit, and governmental organizations from around the world that will help build a permanent archive of multilingual digitized text and multimedia content. Content in the OCA archive will be accessible soon through this website and through Yahoo!

The OCA will encourage the greatest possible degree of access to and reuse of collections in the archive, while respecting the content owners and contributors. Contributors to the OCA must agree to the principles set forth in the Call for Participation.

UK participants include:

National Archives
Natural History Museum

Creative Commons, Science Commons, Open Access, Open Source, ... are helping to drive Web 2.0. What's the UK HE's take on this?

News
- RLG Joins Times The Open Content Alliance
- MSN Joins Times The Open Content Alliance
- NY Times on The Open Content Alliance
- Global Consortium Forms Open
Creative Commons is a nonprofit that offers a flexible copyright for creative work.

Creative Commons offers a flexible range of protections and freedoms for authors and artists. We have built upon the "all rights reserved" of traditional copyright to create a voluntary "some rights reserved" copyright. We're a nonprofit. All of our tools are free.

http://creativecommons.org/

See "Let's Free IT Support Materials!" (EUNIS 2005 paper) as an example of what UK HE could be doing
Wikis (1)

Wiki:
- Simple way of collaborative creation of Web pages 😊
- Wikipedia is a good example
- Can host Wikis locally (& manage access rights)

Issue: (for Web/marketing people)
- Shouldn't you be proactive in ensuring content is accurate, …
- Should you seek to lead in order to define structure?
How can you not have a Wiki, for (e.g.)

- Systems documentation
- Better note-taking
- Student group working
- Collaborative research work
- …

Should we be promoting/providing Wikis? UCISA/UKOLN event, Nov 2004

Yes. There could be real benefit and exciting possibilities in every area of institutional activities: teaching & learning, research, administration and user support. We need to get in there first and understand what users need and what they might do. We also need first make better use of wikis ourselves so we can ..
Example of:

- A shared bookmarking (folksonomy) service
- Web 2.0 example

Usage example:

- "ucisa-ukoln-cetis-2006" tag used for links to resources in this talk
- Noticed 1,628 had tagged Meebo site and one person had tagged the event Web site
- Followed his links (interesting example of Web 2.0 stuff)
Instant Messaging:

- Trivial chat or valuable collaboration?
- MSN, Yahoo, Jabber, … clients?
- What's the Web 2.0 angle?

Meebo:
- A Web-based IM client
- An AJAX application

Do you ban a Web site because chat is trivial?

Should IT Services ban applications when there are trivial ways around such bans? What is the rationale for such bans: ideology; resource management; support; security; …?
GMail

Who needs a University email account when you can get 1 Gb from a GMail account (with AJAX interface)?

My Plans

- Get GMail ID
- Use it as secondary source for mailing lists
- Don't divulge ID (no spam)
- Wait and see what extras Google provide (RSS feed would be nice – now available)
- Gain feel for privacy issues
VoIP: future of telephony

Skype is a good example:

- Integrated voice, IM, Web (and now video)
- Can be high quality
- Free / cheap calls
- Conference calls
- Accessibility benefits
- Network and management issues

VoIP is coming, so now’s the time to gain experiences. What are the implications of ‘free’ always-on telephony (i.e. it's not just about software) - you could be broadcasting this talk now!
Deployment Challenges

Such questions:

• How do we go about deploying Web 2.0?
• More importantly, should we (isn't it just hype?)

Challenges:

• The Web policy is owned by the marketing people; they see the Web as a publishing vehicle not as a communications tool
• We can't use Creative Commons, open access, etc.
• We shouldn't make use of commercial services
• These services are:
  • Technically / philosophically flawed
  • Don't reflect our views on open source / standards
  • Breaking out of our existing culture, software, …
Some Answers For Free 😊

Thoughts about deployment strategies:

• The need to be an adaptable/agile audience
• Particularly relevant to HE: we seek to innovate in teaching & learning & research; we embrace diversity; …
• It's not new – cf eLib Hybrid Libraries, the RDN's Behind the Headlines as 'mashups'
• Benefits of modular approaches to reflect the diversity of the HE environment (cf E-Frameworks and SOA approach to development)
• If you don't:
  ▪ Your rivals will
  ▪ Your departments will use the stuff anyway
  ▪ Who needs central services when we can get better services for free from Google, Yahoo, …!
Beware The IT Fundamentalists

We need to avoid simplistic solutions to the complexities:

- **Open Standards Fundamentalist:** we just need XML
- **Open Source Fundamentalist:** we just need Linux
- **Vendor Fundamentalist:** we must need next version of our enterprise system (and you must fit in with this)
- **Accessibility Fundamentalist:** we must do WAI WCAG
- **User Fundamentalist:** we must do whatever users want
- **Legal Fundamentalist:** it breaches copyright, …
- **Ownership Fundamentalist:** must own everything we use
- **Perfectionist:** It doesn't do everything, so we'll do nothing
- **Simplistic Developer:** I've developed a perfect solution – I don't care if it doesn't run in the real world
- **Job's Work:** Tried that in 1980, didn't work. More than my job's worth to try anything new.
Need To Change Catch Phrases

Computer Says No!
Time to ditch this catch phrase

Wikis? Computer says no
Blogs? IT Services says no
Skype? UKERNA says no

Yer, but, no, but, yer
Time to embrace the ambiguities acknowledged by Vicky Pollard

Yer, like Wikis are well cool, but, OK so I copied my homework, but, like I always copy my homework

Images from BBC web site
Framework For Diversity: Standards

Open Standards – the Challenges


Contextual Approach

A contextual approach to standards has been developed:

- Recognises context (not one-size-fits-all)
- Scalable for use by others
- See "A Standards Framework For Digital Library Programmes", ichim05 conference
Framework For Diversity: Accessibility

Accessibility – the Challenges

- WAI WCAG – important area and high visibility
- But: model flawed, fails to take into account developments e.g. can you use Podcasts?

Holistic / Approach Blended
Holistic approach to e-learning accessibility developed

- Accessibility of learning outcomes is paramount
- WAI WCAG are guidelines
- See "Implementing A Holistic Approach To E-Learning Accessibility" prize-winning ALT-C 2005 paper
Framework For Diversity: Ownership

Ownership – the Challenges

• We must own software and data we use. This allows us to manage, curate, maintain and enhance the software and the data.

Ownership – An Alternative View

• Post dot.com crash, networked services are more mature, financially and technically
• Services such as Google, Amazon, eBay are widely used (as are JISCMail, MIMAS, …)

Ownership – Conclusions

• Trying to own everything is not a scaleable solution
• We should take a risk assessment:

Simple externally-hosted Web stats service which:
(a) works, (b) has nice interface and (c) is simple to use
Further Thoughts

Tensions Within IT Services (real example)

- **Learning Support**: Skype is great for distance learning, user support, ... And it's so easy to use 😊
- **Network Support**: Skype is bad for our network. Even worse, it's so easy to use 😞

Addressing The Tensions

- Policy banning usage; policing enforced; bans for consistent non-conformance
- Address specific problem area; discourage use, but allow get-out (recognising legitimate user needs and immaturity of alternatives); seek technical solution to problem and then liberalise policy
Can (should) UCISA develop key principles for IT services?

**Draft Principles for Service Providers**

**User Focus**: We will ensure that priority is given to a user focussed approach to our services.

**Avoiding Dogma**: We will develop policies (e.g. standards, open source, accessibility, …) would these will evolve and won't be used in a dogmatic way.

**Responsive to Change**: We will seek to be responsive to changes in technology, user needs, cultural and political developments.

**Good Communications**: We will establish (and monitor) effective communications channels

**Learning**: We recognise that HEIs will seek to make use of IT in innovative ways and we will support such innovation
Key Principles For IT Services 2

Draft Principles for Developers

**Scalability**: Developers will recognise that there will be scalability issues to be addressed if innovations are to be deployed into service.

**Sustainability**: Developers will recognise that innovations need to be sustainable if they are to be deployed into service.

**Reliability**: Developers will recognise that a high level of reliability is needed if innovations are to be deployed ...

**Integration**: Developers will recognise that innovative services may need to be integrated with existing systems.

**Consistency**: Developers will recognise that innovations need to be harmonised with existing systems (e.g. avoid replicating functionality, ...)
Conclusions

To conclude:

- Web 2.0 seems to address many of the needs of the HE sector and seems suited for the HE culture
- A collaborative Web (2.0) will cause conflicts with the policies and procedures devised for a publishing Web (1.0)
- Dogma will not help address tensions
- Dialogue will be needed
- There is no silver bullet!
Discussion

Questions, comments, etc. welcome
Draft Principles For IT Service Departments

About This Document

This document provides draft principles which are designed to help ensure that institutions can manage potentially disruptive technologies and easily deploy useful technologies into an effective service environment.

The document has been produced for the Initiatives & Innovation: Managing Disruptive Technologies workshop, held at the University of Warwick on 24th February 2006. For further information visit the workshop Web site at the URL: <http://www.ukoln.ac.uk/web-focus/events/workshops/ucisa-ukoln-cetis-2006/>.

Draft Principles

For Service Providers:

Service providers should seek to implement the following principles which are intended to help ensure that quality services can be provided to support institutional needs within the higher educational sector.

- **User Focus**: Providers of IT services acknowledge that their role is to provide a service for the users.
- **Avoiding Dogma/Ideology**: IT service providers may choose to implement policies in appropriate areas (e.g. use of standards, open source software, preferred vendors, etc.) but should recognise that such policies may need to adapt to changing circumstances and should not be used as a means of engaging in dialogue with the user community.
- **Willingness to Respond to Changes**: IT service providers should be willing to change to reflect the diversity to be found within higher education and developments to the environment due to technical, political or cultural changes.
- **Importance of Good Communications**: IT service providers will ensure that effective communication channels are established and will monitor the effectiveness of the channels.
- **Learning**: IT service providers recognise that the user community within the HE sector will be continually seeking to enhance the quality of their teaching and learning and research services through use of innovations in IT.
For Developers/Innovators:
There is a need for developers and innovators to recognise that Service Providers - who may, if not now, sometime in the future be expected to provide a large-scale, resilient and robust service based on the developing technology/application - have genuine concerns about:

- **Scalability**: IT developers should recognise that although experimental approaches to new technologies which may work well on a small scale such solutions may needs changes to the technology or infrastructure if the prototype is to be deployed into production service (or, indeed, may not be usable in a large scale production environment).

- **Sustainability**: At developmental/experimental stages, developers often put in long hours both in development and in supporting the small, pilot user community. When the service transfers to production, similar support services must be in place - or the service is likely to fail. Similarly, developers can often 'find their way' around systems because of their very close contact and deep knowledge. Other users have to rely on help systems, effective navigation schemes, appropriate use of metadata, etc - these must be in place.

- **Reliability**: During development activity, a 'beta' quality of service is often quite acceptable - only the development team suffers and they are willing to pay this price. Service users do not expect and will not tolerate service interruption or low performance.

- **Integration**: During development, data entry can often be performed 'manually'. When a service targeted at, say, students moves into production there must be an effective, timely and reliable way of transferring appropriate student data to populate the new service.

- **Consistency**: Service providers may be supporting many disparate - but linked - systems. They much prefer systems which have some consistency of user interface and navigation since this considerably reduces the number of support calls. Similarly, the new service should integrate into any naming and authentication scheme which operates across existing systems. Finally, there is a tendency for systems to have overlapping features (many systems, for example, have some form of messaging built-in). Users can be confused by having several messaging schemes in the various applications they use - and need either firm guidelines on what systems to use for particular message types, or preferably the ability to turn some of these components off on a global level.

- **Security**: Service providers want to see that issues of security have been addressed. The nightmare scenario is of a new service being added which creates or exploits vulnerabilities in existing and hitherto secure systems.

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