

# Repositioning Information and Communication Technologies in Higher Education

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Thank you for this opportunity to speak to an audience so focused on information strategy – and in a sector where I am more of a practitioner than a researcher. Don Marchand has the expertise in this area, as the former Dean of a School for Information Studies.

However, I have developed a number of convictions about an information strategy for institutions of higher education. They are based on my years in higher education across a number of universities in North America and Europe. They are informed by my research on the social aspects of information and communication technologies – ICTs – in other sectors.

Most importantly, perhaps, they have been shaped by my efforts to work with university committees in the UK and USA that have been focused on policies for libraries and information technology. This has allowed me to compare and contrast developments on both sides of the Atlantic. In this process, I have been struck more by the similarities than the differences.

On both sides of the Atlantic, I have argued the need for a University-wide vision on the role of information and communication technologies in defining and achieving the missions of the University. I think this is critical to giving

direction to initiatives in the libraries and information services areas of my institution – and others.

Because I am director of the Oxford Internet Institute, you might have some preconceptions of what I have to say. Let me ask you to suspend your judgements for a few minutes.

For example, one of my first initiatives at the OII, since I came on as the first director in 2002, was to establish a specialised library at the Institute. It has books – odd that I need to say that -- as well as networked computers. I am proud to tell guests that our library is a unit within the Oxford University Library System – just like the Bodley! – only not quite as large or as old. That said I am not going to say that the Internet is a substitute for books.

Quite to the contrary, I would argue that the debate over the impact of the Internet on books – competing conceptions of the future of libraries – has been counter-productive. Substitution paradigms about the future of information have undermined librarians, but many librarians have undermined themselves by not thinking about how advances in ICTs could enable them to broaden their role in higher education.

This may be my central argument: Libraries and other information and communication technology services within institutions of higher education need to reposition themselves vis-à-vis one another and the university as a whole. They need to play a major role in moulding a new university-wide vision of the centrality of information and communication technologies – libraries as well – to the future of higher education.

There are many examples of organisations and institutions failing to look critically at what they do, as well as how they do what they do. A recent editorial in the *Financial Times* (24/25 January 2004) discussed the downsizing of Eastman Kodak, a US brand leader in film production. Rather than saying it was another old industry that would be outdated by the digital revolution, the editors praised Kodak for moving aggressively into 'digital

imaging'. The management recognized that the company had, and I quote: "become too closely associated with the way it is done – the film – instead of the act of taking a snap."

Are there analogies in our own institutions? I believe there are many. Libraries have become too associated with the book, and bookshelves, as opposed to their role in shaping access to information and more – much more (Dutton 1999).

### **Central Themes and Assumptions**

My views derive from a few general observations, any of which we might wish to debate today. I will briefly outline these observations as working assumptions that underpin any discussion of the future of libraries and information services, and then I'll try to clarify here, today, what I have tried to argue in many less formal conversations over the last several years.

#### Grasping the Information Paradox

First, it is important to recognise that the problems facing libraries and information services are critical. Paradoxically, library and information services budgets are either not growing, or shrinking in many colleges and universities, while demands in some areas, such as IT support or journal subscriptions are growing rapidly. A recent UCLA study has been counting the growing numbers of bits, bytes, journals, books and texts, as Ithiel de Sola Pool and his colleagues in Japan had done in an earlier era. [See: <http://www.sims.berkeley.edu/research/projects/how-much-info-2003/>] Continuing explosions of information, with stable or declining budgets.

This is in part a consequence of the funding issues facing education as a whole, but not entirely.

An illustration of this paradox is in the academic study of information. In the early 1980s in the USA, many schools of library and information science tried

to reinvent and broaden themselves to study information and information sciences. A few have been successful, such as Syracuse, and the University of Michigan. Many were not.

So paradoxically, at both USC and Oxford, as I see increasingly complex issues arising over data mining, archiving, data curation, search engines and more – I have very few scholars of information studies to look to for help.

When I went to college in the 1960s, the library was a focus of my life as a student. Today, libraries are not attracting students in the same numbers or in the same ways. One of the most intensively used libraries at USC is a new facility with major computing resources and meeting rooms for students. Open 24/7, they have active groups of students using ICT resources and meeting rooms as much or more than the bookshelves. Most libraries are responsive to these changing media habits. For instance, our OII library is a blend of electronic resources and print holdings. We hope it will become a magnet for many.

But there are limits to redefining ourselves. I was amused when a New York City public library began to offer square dancing lessons to help bring people back into the library.

This entertaining response underscores the genuine need to address the changing geography and technologies of information access, which many at this conference are of course doing and doing well. There are serious problems with dated conceptions of libraries and IT units that are supported more by sentiment than hard evidence. The paradox exists because we have not argued or shown how libraries and information services are still critical in managing access – to information, people, services and ICTs.

Acting – Visioning – in a Period of Transition

At the same time, this is a period of some remarkable advances in libraries and information services. Examples include strides in search engine

technologies, bibliographic databases, digital libraries generally, on-demand publishing, scanning technology, and continuing diffusion of broadband Internet and Web services, including wireless technologies such as WiFi. These technologies are potentially disruptive and are creating a period of uncertainty and transition that serves as a window of opportunity for existing actors to rethink their role within the delivery of services.

My worry, which may well be unfounded, is that advances in ICTs, such as innovations in the area of digital libraries, will be used simply to do what we have always done, but more efficiently. Modernizing institutions has much to do with efficiency, but we are still in a stage of rapid transition, where there is a great need for innovation. Moves to increase efficiency, if not balanced with the need to innovate, could undermine the future of library and information services. It is a time to modernise the very role of libraries and information services in higher education, not just do what we have always done, but electronically and at less cost.

#### A University-Wide Vision – Breaking a Downward Spiral

In order for key actors to rethink their role, it is critical to have a vision about the role of ICTs for the institution as a whole. Universities need a vision for the future of information and communication technologies in research, teaching and administrative services – one that advances the mission of the institution, rather than the units.

When I was President of the Faculty at USC, I worked with the top management of the university, including the University's Chief Information Officer and Librarian, Jerry Campbell, to convince top managers and executives and the faculty that issues surrounding the library and information services could not be addressed simply by their own units. It was not simply a problem of making the library or IT run well. Part of the problem was the priority of these issues within the university as a whole – which was not as high as it needed to be.

In time, many realised that we were in a proverbial chicken and egg problem. Information services could not solve problems without greater support from the university, but the university was reluctant to marshal more support in the face of problems, issues and uncertainties. Hatching a strategic vision for libraries and information services for the University as a whole helped us get out of this dilemma.

However, this move to a University vision is difficult.

The relevant units are fragmented (culturally and historically) in most institutions. Therefore, while an institution-wide vision might serve everyone's interests, it is also a risk. Whose vision prevails? It conjures up scenarios of IT people running the libraries, or librarians running IT.

Also it is the exceptional top executive or manager at universities and colleges who is excited about libraries and information services. Some might well find IT issues to be boring or too technical. They have other priorities and issue agendas, dealing with enrolment, recruitment, research and teaching concerns. For example, it is hard to imagine approaching a Vice Chancellor or top executive at a UK university embroiled over the last year in a debate over so-called 'top-up fees' – but we must engage them and interest them, and soon.

In an entirely other arena, the push for national information infrastructures, Vice President Al Gore and his staff were successful and able to engage President Clinton in a major effort to think more strategically about national and global infrastructure initiatives – the so-called NII and GII. This is despite the fact that Bill Clinton did not have that great of a personal interest in the Internet and Web – he was a 'people-person'.

You may have seen the recent news item that the Bill Clinton Presidential Library will have copies of almost 40 million e-mails sent by his staff. But, according to a reporter, Andrew Buncombe (2004), there are only two sent by

the former president and that is over a period of eight years (Buncombe 2004).

Of course, this distance from ICTs not limited to American presidents. Look at President Clinton's contemporary in Germany. You may remember former German Chancellor Helmut Kohl's famous remark when asked about Information Superhighways: "Autobanen sind Laendersache", suggesting that questions about highways were a matter for the Federal States.

The point is not that top executives of nations or universities should be technophiles or even technical experts. Rather, we need to be able to communicate the potential and need for institutional and technological initiatives to leaders who are not as interested in the topics as we are. This is a real challenge. A compelling vision can help.

#### Need to Avoid Old Dichotomies

One way to improve communication is to move away from old worn-out dichotomies. They choke off constructive debate and policy decisions about libraries and IT. They are the dichotomies between:

- Library v. information services
- Electronic v. print – digital v. analogue
- Centralized v. Distributed

#### Library v. Information Services

There may be institutional reasons for maintaining clear boundaries between library and information services, particularly their historical trajectories as separate units. However, ICTs are eroding the boundaries between these formerly distinct functions in ways that must be appreciated by everyone in this audience.

I am not arguing that one should be subsumed under the other. New organisation charts are not the answer. One problem is the debate over how to reorganise the management of libraries and IT service organisations. This can be handled in a variety of ways. Who reports to whom, and at what level, should be driven by the personalities, histories and strengths at different institutions. The important point is that they are separate, but are interrelated activities. They cannot have isolated information strategies.

### Analogy v. Digital

But the most pervasive dichotomy is about the future of information – analogy v. digital. In many instances, this is a delightful debate about the future of the book, the future of academic publishing, and the role of the Internet. However, institutions caught in this debate are frozen by indecision. No one knows the future. Strong groups and actors have a stake in each alternative in this false choice. So it not only sows indecision, but also division and mistrust at many levels.

My own view is that print publications will continue to play a central role in higher education, even though printing technology will be increasingly dependent on digital technologies. Likewise, digital information will play an increasingly prominent role, but not substitute so much as complement books and other print publications. Take on-demand publishing as a simple example.

Likewise I think that any author must rethink the content of their books, based on the existence of the Internet. This is very positive as we focus on ensuring that our books have a longer shelf life and that they do not focus on providing information that can be better accessed and up-dated online.

You may agree with me, or not, but my view is not that popular with many people who hope that the digital revolution will provide a technical fix to the problems of funding and supporting libraries. To the contrary, more books, more bytes, more media are expanding the demands and costs for libraries – back to the information paradox.

## Central v. Distributed

Finally, there is the dichotomy between the central library or central IT department and the distributed or decentralized performance of the same function, whether a college, a department, a school or an individual does it. I will say more about this in a few minutes, but it is linked to a belief that the new technologies will empower individuals – they can also empower libraries.

How to we get beyond these dichotomies?

One answer is to push this decision down to the users. We need user-driven collections and services. If faculty in classics need books, they should get books. If an engineering faculty want electronic access to journals, and no books, let them decide.

In this way, the future of information need not be decided before we can move ahead. Instead, it will evolve over time as users make choices driven by their teaching and research needs.

Of course, many argue that end-users do not know best. I agree that users often don't need what they want, for example. But if that is the case, we have a major role in teaching users what they want.

## Getting Out of the Budgetary Box

One of the most interesting lessons I learned in serving on various library and IT committees was the fact that libraries and IT units are often defined as part of the central administrative structure of universities and colleges. This is not only wrong, but it is difficult to change.

It is wrong because it creates incentives for reducing the budgets of these units that are not tied to their role in higher education. Every unit of higher education wants to increase the proportion of the budget put into direct service delivery v administrative overhead. So we all try to prune and shrink

administrative costs to shift more resources to teaching and research. But this process – because of the way libraries and IT unit are categorised – creates incentives to cut the budget of libraries and information services. We have allowed libraries and information services to be defined by budgeting systems, rather than by real models of research and teaching in higher education. And they have been defined as part of the problem.

I should add that this is really very difficult to change. In my own department, for example, I noticed that our library was incorporated within the administrative costs of our unit. I asked our administrator to change this, as the library is integral to our research and teaching role. It is a central means for achieving our mission, not an administrative overhead.

I was told – rightly or wrongly, as I am trying to pursue this – that we need to follow the overall university budgeting system, which places the librarians and library in particular categories. I think we can find a way to overcome this problem, but it will take political will – and cost us time and energy to get out of this box.

In fact, this is a beautiful example of the power of IT systems in organisations. They do not simply provide information that can be used to control or empower actors; they also incorporate assumptions and definitions, such as libraries as an administrative overhead, that exert powerful controls irrespective of the information they may yield.

It's a good example, but a dysfunctional consequence, from my perspective.

### **Ways Forward**

How do we get out of this category? How do we seize the opportunities created by the transformational potential of new technologies? How do we get on the issue agenda of the top executives in ways that move us beyond the old dichotomies and reposition ICTs as something far beyond an administrative cost-centre?

## Defining a Strategic Vision at USC

At USC, we did this by showing how libraries and information services could advance the strategic plan of the University. The University had an established a strategic plan in 1994, which defined pathways to excellence for the institution (1994, 1998). We worked with faculty and administrators to define what we called “information pathways” to excellence – showing how libraries and information technologies could further the strategic vision of the university in concert with and in support of the other pathways the University had identified.

Anchored on many of the themes I've outlined, and with support from the University and a grant from The Andrew W. Mellon Foundation, colleagues at USC became involved in a wide-ranging University-wide consultation. This led to ‘A Strategic Plan for USC’s Library and Information Technology Services’. It was entitled “Information Pathways to Excellence: Mission-Driven Strategies for Library and Information Services”. It is available on the Web at [www.usc.edu/isd/strategicplan](http://www.usc.edu/isd/strategicplan).

This plan led to a series of concrete proposals for implementing aspects of the strategy, which the Provost of the University supported out of central university funds and in significant – not-trivial -- ways.

Two weeks ago, I had visitors from USC who worked with me on this strategy and they told me that the pathways plan was continuing to underpin projects focused on revitalizing ICT services at USC.

As you can see, we took the concept of pathways from the University’s strategic plan (1994, 1998) in order to emphasize that libraries and information services created pathways to accomplishing the mission of the University. Every university has a unique vision and strategy. However, by describing some of the pathways we identified, it might help you or others think more concretely about how to move beyond digital libraries.

## Elements of a Strategic Vision

### Seamless Access to a Customer-Driven Collection

At the end of the day, excellence in teaching and research depends on the performance of teachers, students and researchers. One pathway for libraries and information services was to build a customer (teacher, student and researcher) driven collection of analogue and digital resources. This involved the design of processes to put more decision-making responsibility over collections, equipment and services closer to the end users.

Involving users in the design of collections and services is not a new concept. However, the departmentalisation of libraries and IT functions can sever connections between the producers and users. Over the years, for example, cost cutting and efficiency measures, such as outsourcing the cataloguing function, has distanced some users from responsibility for the state of the library and IT services.

New mechanisms need to be created to overcome this fragmentation.

Moreover, this goal of improving access entails a variety of real projects that move libraries and IT services forward. These include the development of a unified information portal, single sign-on, advanced search engines, and integrated cataloguing across multiple library locations.

Digital library developments certainly advance this mission. However, the mission could help librarians think beyond the digital library and understand why the digital library is important. It is not simply up-dating technology, but enabling easier access to a more integrated and customer-driven collection of books, journals and various archives and electronic resources.

### Multi-Disciplinary Magnets

Many universities are recognizing the value of inter-disciplinary and multi-disciplinary approaches to many interesting problems, such as urban studies or Internet studies. Universities like USC have tried to foster interdisciplinary study, and libraries and information technologies can support this mission, such as by creating multi-disciplinary collections.

For example, one focus of inquiry at USC was urban studies, and it was clear that a specialised library – physical and electronic -- in this area could help foster the area.

The OII is another example, where we are creating a new library, with a specialised focus on Internet studies, particularly on societal implications of the Internet. We think this is a means to attract and support students across all levels of the university, and help them discover colleagues among students and faculty.

#### Information Infrastructures

It is apparent to anyone in a modern college or university classroom that electronic media are fundamentally changing the expectations and practices of students.

I needed only to watch our first group of summer doctoral programme students (Figure) -- 28 students from 15 nations, with about 22 laptops among them. Most were connected to the Internet during class, and multi-tasking as professors lectured. While listening to the lecture or discussion, they were variously and often simultaneously instant messaging, e-mailing, checking Web sites, entering comments on the course Virtual Learning Environment (VLE), downloading the instructor's PowerPoint slides, editing their own computer slides or papers, winking at their neighbour across the room, and passing notes.

Students, VLEs, Laptops, and Wires at the OII Summer Doctoral programme, 2003



Multi-Tasking: OII Summer Doctoral Programme



We are watching the synergies and interactions across multiple technologies, all of which are increasingly available in more and more advanced classrooms.

There is a huge role for libraries and information services in building the infrastructures to support these classrooms, organising the electronic content for instructors and students, and providing remote access outside of class by

both instructors and students to the course materials. As we put it at USC, we needed the infrastructures 'to support distance education, distributed learning, and our digital presence in the global community' (ISD 2003: 7).

### Constructing a Well-Defined Federal Structure

USC and many other universities are moving beyond debate over the future of central v distributed library and IT entities to develop federal structures that allocate responsibilities at multiple levels. Some refer to a partnership (Decker and Neas 2003), but I think it is more important to focus on a division of responsibilities.

The very idea of creating such a structure facilitates a constructive discussion about the appropriate level for different responsibilities as opposed to a debate over the wisdom of a central facility.

A well-defined federal structure also helps move decision-making responsibility closer to the users. Basic infrastructures and services can be provided by central units, while enhanced and subject or discipline specific services can be provided by their respective units. It is my impression, for example, that this discussion is well advanced at the University of Oxford, given the long-standing independence of the Colleges.

### Building a Web-Based Service Environment

A final mission is the provision of a Web-based set of services for students, faculty and staff in higher educational institutions. It is here that libraries and information services can contribute to cutting administrative overhead and facilitating service delivery that accompanies teaching and research.

At USC, administrators referred to the Sneaker-net, which meant that students had to run from office to office in their running shoes or sneakers to get anything done. The Web could facilitate student registering for courses,

paying fees, getting e-mail addresses, seeing their marks, checking on housing, getting a book, and so on.

And, of course, university Web sites contribute to the marketing and recruitment of students as well as the dissemination of research. This is critical. For they break down the barriers between institutions of higher education and the outside world. In many ways, the diffusion of the Internet and Web could help refine and enlarge the very mission of universities and colleges. New ICTs not only change the way we do things, but they can also change what we do.

For example, at Oxford, the Internet and Web can enhance the reach of the University and the ability of the world to gain access to the University. We don't need a digital Oxford, or a virtual Oxford. Oxford is a wonderful and irreplaceable set of Colleges and Departments. However, we could provide more global access to the museums, collections and expertise of the University. A global vision for the University as a whole could give direction to libraries and information services across the university – something like 'Access Oxford' or, in the present context, 'Access Bielefeld'.

## Summary

I am aware that I probably have not told you anything you didn't already know. And I'm sure you could correct me on many points. But I hope I have conveyed my optimism as well as my concern about the future.

If we focus on the changing missions of higher educational institutions, then there are major roles that need to be fulfilled by libraries and information technology services – reconfiguring access to information, people, services and ICTs (Dutton 1999, 2004). In fact, there are huge projects ahead that go well beyond the digital library to 'non-technology-centred strategies' – as suggested by the organisers of this conference.

Thank you.

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