Beyond the hybrid library: Libraries in a Web 2.0 World

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Introduction

In a recent valedictory talk, Reg Carr noted, "Almost 20 years ago, I published *An Introduction to University Library Administration*, with Jimmy Thompson, the Librarian of Reading University; and I was inordinately proud of that book, which for a few years at least became a standard library school text. But re-reading the book today is like drifting through the galleries of an ancient museum: it bears virtually no relationship to the book which I would write if I were writing it now. It describes, quite literally, another world that is dead and gone. The writer L.P.Hartley put it perfectly when he said that "The past is a foreign country": they did things differently there. And the biggest change that I detect between then and now is the radical change of culture that has come about in our environment in the last ten years." (Carr, 2006)

It was the same Jimmy Thompson who had memorably but wrongly predicted the end of libraries in the face of computers, in his book of the same title (Thompson, 1982). He concluded that "The Librarians and Libraries that do not accept the change will inevitably be victims of the evolution. For the dinosaurs it will indeed be the end." He also quoted Fred Lancaster: "We are already very close to the day in which a great science Library could exist in a space less than 10 feet square" (Lancaster, 1978). That day has arrived. But what we may look back and see is that it was Thompson's timing rather than his premise which was wrong. Library literature over the last decade has tended to focus on how we should respond to or use technology. It has tended to focus on what users want from those technologies rather than wondering whether users have changed. Even supporters of libraries would have to conclude that neither the academy nor academic librarians have a crisp notion of where academic libraries fit in the emerging 21st century information panoply. Increasingly libraries seem to resemble Miss Havisham, dressed in their wedding pomp and finery but living in an empty house waiting for the lover who will never come. The concept of the hybrid library has been a useful way station in developing our thinking on the future path of libraries, but it is an already dated concept which assumes evolutionary rather than revolutionary change.

Although there is growing evidence of the need for a fundamental rethink of the role and place of libraries, most of such debate takes place on the electronic lists, journals and blogs which all too few librarians read. (Peters, 2006) Traditionalists reach for the comfort blanket of the library as place and for the precedents of history. The library as place has been invested with a virtuous glow which paints it as the last remaining substantial social space in universities; as the last remaining public place of trust in society, in the case of public libraries a place where young children can be left in the care of story-telling strangers while parents shop. The fireside myths of

library history tell of a resolute four thousand year journey through change: from the oral tradition through the great library of Ashurbanipal with its tablets of stone to papyri then the monastic scriptoria. Then we moved on to Gutenberg and the printed word and further development into sound and film collections. The profession comforts itself that throughout these four thousand years we have often been buffeted by the great waves of change, but never yet capsized. Librarians are adept at finding comforting statistics showing that the slumbering power of libraries remains real. A recent report from OCLC (OCLC, 2003) recorded that:

- There are five times as many library cards as Amazon users;
- there are more libraries than McDonald's outlets in the USA;
- one person in six in the world is a registered library user;
- there are over one million libraries and over 700,000 librarians worldwide.

However true those figures are, they do not matter if they represent the past and ignore the fact that there has been a fundamental shift in both users and the content they seek.

The New Users

The worry for librarians in the Web 2.0 world should be not that technology is changing rapidly, but that a generational change is affecting users in quite fundamental ways. "It is now clear that as a result of this ubiquitous environment and the sheer volume of their interaction with it, today's students *think and process information fundamentally differently* from their predecessors" (Prensky, 2001). Prensky developed the concept of digital natives to describe individuals who have grown up in an entirely internet world.

It is worth considering their characteristics and assumptions. The Beloit Mindset List (Beloit College, 2006) sets out to define this group in soundbites and notes some of the attributes of new college students:

- "Ctrl + Alt + Del" is as basic as "ABC."
- They have never been able to find the "return" key.
- Computers have always fit in their backpacks.
- Stores have always had scanners at the checkout.
- They have always had a PIN number.
- Convenience trumps quality
- They don't remember when "cut and paste" involved scissors.

It is easy to forget that today's twenty-one year olds spring entirely from a digital world. John Naughton pithily described this in the *Observer* (Naughton, 2006). For today's twenty-one year olds born in 1985 the Internet was two years old which was the same year as Nintendo launched 'Super Mario Brothers', the first blockbuster game. As they went to school, Tim Berners-Lee was busy inventing the World Wide Web, which emerged as a phenomenon as they moved into secondary school. The Palm Pilot was launched at the same time. Also at that time, pay-as-you-go mobile phone tariffs arrived, enabling

teenagers to have phones. Napster and Blogger.com were launched in 1999, just when they were doing GCSEs. The iPod and the early social networking services appeared in 2002, when they were doing A-levels. Skype launched in 2003, just as they were heading for university, and YouTube launched in 2005, as they were heading towards graduation.

And what do these digital natives expect?

- Choices
- Selectivity
- Personalization
- Instant gratification
- Cheap, fast, and good
- Mobile anytime anywhere technology

As a consequence, 73% of college students reported using the Internet more than the library. (Hong, 2006)

Holliday and Lee (2004) undertook studies which confirmed this and discovered that the digital natives:

- expect research to be easy and feel they can be independent in the process.
- They do not seek help from librarians and only occasionally from professors or peers.
- When they can't find what they need, they give up and assume that the information cannot be found.
- Students often stop after their initial searches thinking they have completed the research process and fail to choose a particular focus.
- Access to full text articles seems to have changed students' cognitive behavior. Instead of having to read through material at the library, they can now download material at their desks. They do not have to take notes or read through them to develop themes and ideas, an activity central to a focused research project.
- Electronic articles enable cutting and pasting, possibly leading to increased plagiarism.

And so we have a growing group of users for whom the library is at best a secondary resource and where library usage statistics are maintained and bolstered by the provision of network connectivity rather than book collection quality.

Content

The nature of content has also progressively changed while libraries have not. The nineteenth and much of the twentieth century can be defined in terms of words, whether spoken or written. Short phrases can encapsulate major events. No explanation is required for "Let them eat cake", "the thin red line", "Custer's last stand", "Dr Livingstone I presume", "Never in the field of human conflict has so much been owed by so many to so few" - or even the formula "$e=mc^2$". Conversely the last fifty or so years can be defined almost entirely in images: film of the burning airship Hindenburg; the Dunkirk beaches; the mushroom cloud of an atomic bomb, the assassination of JFK; Neil Armstrong stepping on the moon; the beauty of fractal images; the obscenity of the aircraft crashing into the Twin Towers.

Digital natives expect image content, hence the huge success of Youtube and Flickr. This shift in medium has largely passed libraries by – although the JISC has made noble attempts to address the issue in the face of a supine constituency.

Frighteningly but perhaps aptly, Prensky describes this:
"It seems to me that after the digital "singularity" there are now *two kinds* of content: "Legacy" content (to borrow the computer term for old systems) and "Future" content. "Legacy" content includes reading, writing, arithmetic, logical thinking, understanding the writings and ideas of the past, etc - all of our "traditional" curriculum. It is of course still important, but it is from a different era. Some of it (such as logical thinking) will continue to be important, but some (perhaps like Euclidean geometry) will become less so, as did Latin and Greek. "Future" content is to a large extent, not surprisingly, digital and technological. But while it includes software, hardware, robotics, nanotechnology, genomics, etc. *it also includes the ethics, politics, sociology, languages and other things that go with them."* (Prensky, 2001)

Digital content is also changing from the concept of "authoritative" as embodied in the printed word, to user created and often image based. 57% of online teenagers create content for the internet on social spaces such as Myspace, Youtube and Flickr. 62% of content viewed by online users under the age of 21 is generated by someone they know. (Hong, 2006). And user created need not mean poorer. The user created films of the Indian Ocean tsunami or the bombing of the London Underground are every bit as valuable as historic documents as any written record of previous events. But community based written content can also have validity. Wikipedia (Wikipedia, 2006) is a free encyclopaedia and a wonderful community based resource. Jordanhill Railway Station in Glasgow has the distinction of becoming the one millionth entry on Wikipedia. The entry was begun on 1st March 2006 with a single sentence. Within 24 hours it had been edited 400 times and expanded to become an entry that prints out as five pages. There is no such entry in *Encyclopaedia Britannica,* which is barely 10% of the size at 120,000 entries. Wikipedia is currently the 17th most popular site on the Internet at 14,000 hits a second. And much more up to date than *Britannica.* The first entry on the 2006 Israeli-Lebanon conflict appeared on the wiki within six hours of the capture of the two Israeli soldiers by Hezbollah. The argument rages as to accuracy and whether a thousand amateur administrators can provide adequate quality control – or as Jorge Cauz, president of the *Encyclopaedia Britannica* recently put it, "Wikipaedia is to the Encyclopaedia Britannica as American Idol is to the Julliard School" (McGinty, 2006). This comment seems to miss the point entirely.

The prevalence of "good enough" information is shaking up the commercial content industry in ways that remain unresolved. However what we can see is the emergence of large aggregators of data meeting current user need as compared to libraries aggregating data against historic assumptions.

The Research Process

Taking these elements together leads inexorably to a change in the research process itself. It is a commonplace that the Internet has internationalised research. Papers now appear with literally hundreds of joint authors, while research data, debate and papers are shared across the Internet in real time. The growth of digital natives and user developed content then combine to create a concept which can best be defined as aliteracy. It should not be confused with illiteracy or even dumbing down, but reflects the growth of a constituency which can function perfectly effectively without reading, or books or libraries. Clever and well informed people no longer find libraries essential and there is growing evidence of two parallel worlds – on-web and off-web. It is at least conceptually possible to acquire a PhD without reading anything, at least in science and technology. The student engages in tearoom discussion – where most information transfer has always taken place - formulates a hypothesis, writes software, runs computer controlled experimental equipment and uses more software to analyse the results. The literature review which is always an element of the doctorate requires cut and paste skills, not reading skills. Even that will not require library access for long. The Google Library project plans to digitise some thirty-six million volumes over the next few years, (Milne, 2006). Who will then need even a large university library? The aliterate hive mind ignores the off-web in favour of the big gravitational hubs of the Internet and these are increasingly the places where other people build systems and services on top of the hubs.

The underlying issue for libraries is not an overload of information but a shortage of attention for the abundance of information. This is as true of research as teaching, where we increasingly want to gather create and share. We are only just beginning to understand how data flows through the research process from research bids and bid management to human resource management and research outcomes. Instead of the historic position where users adapted their workflow to the library, visiting us at fixed times, now we have to adapt to their workflow.

Social systems as competitors to libraries

So if we are not to be left high and dry we need to develop a Libraries 2.0 to match Web 2.0 and that in turn will be dependent on our ability to focus on and determine the needs of the new user and not the technologies which they have currently adopted. These Web 2.0 spaces form big hubs where users congregate and on which services can be built.

The big upsurge in social networking services is based on blogs, wikis, Instant messaging and other tools which are creating new spaces where services are being built, spaces which are quite foreign to libraries. Youtube acquired twenty million users a month in eighteen months and they watch one hundred million video clips a day. Youtube has now been taken over by Google in a perfect example of aggregation. Myspace has one hundred

million users and the number is growing by 240,000 a day, while Google receives one billion requests a day. (Naughton, 2006).

Unlike social-networking sites such as LinkedIn and Friendster, which concentrate on developing relationships, social sites such as del.icio.us, 43Things and Flickr focus their attention on organizing data. Users organize their own or other's data in the public sphere and the social, or community, aspects arise from there as users share and seek out like-minded individuals. And if even classification is under threat, what is left?

These services are described on their own websites in simple jargon free attractive ways. For example,

"del.icio.us is a social bookmarking website -- the primary use of del.icio.us is to store your bookmarks online, which allows you to access the same bookmarks from any computer and add bookmarks from anywhere, too. On del.icio.us, you can use tags to organize and remember your bookmarks, which is a much more flexible system than folders. You can also use del.icio.us to see the interesting links that your friends and other people bookmark, and share links with them in return. You can even browse and search del.icio.us to discover the cool and useful bookmarks that everyone else has saved -- which is made easy with tags."

"Yahoo Answers launched on December 8th 2005. The service allows any Yahoo user to ask any question and get answers and advice from other Yahoo users. The community picks the "best" answer, and everything is archived for search." Within five months a user posted the ten millionth answer.

"The Semantic Web is about two things. It is about common formats for interchange of data, where on the original Web we only had interchange of documents. Also it is about language for recording how the data relates to real world objects. That allows a person, or a machine, to start off in one database, and then move through an unending set of databases which are connected not by wires but by being about the same thing."

"Wikipedia describes how folksonomies develop in Internet-mediated social environments, users can discover (generally) who created a given folksonomy tag, and see the other tags that this person created. In this way, folksonomy users often discover the tag sets of another user who tends to interpret and tag content in a way that makes sense to them. The result, often, is an immediate and rewarding gain in the user's capacity to find related content. Part of the appeal of folksonomy is its inherent subversiveness: faced with the dreadful performance of the search tools that Web sites typically provide, folksonomies can be seen as a rejection of the search engine status quo in favor of tools that are both created by the community and beneficial to the community.. " (Google, 2006)

And as to place, most Starbuck's café's provide superior wireless internet access to most libraries.

It is then easy to tabulate where digital natives go to meet their information needs instead of the library.

Traditional Library Activity	Web 2.0 World
Cataloguing	Automated metadata, del.icio.us
Classification	Folksonomies and the semantic web
Acquisitions	e-bay, Paypal, Amazon and Abebooks
Reference	Yahoo Answers and Wikipedia
Preservation	Digital Archives and repositories
User Instruction	Chatrooms
Working space	Bedroom and Starbucks with a laptop
Collections	Youtube, Flickr, Institutional Repositories, Open Access
Professional judgement	The wisdom of crowds

Future Library Services

But libraries are great survivors and there are areas where the profession can claim to have relevant skills. Ironically these are best seen as developments and rebranding of traditional skills.

Traditional Library	Web 2.0 World	Library 2.0 World
Cataloguing	Automated metadata, del.icio.us	Metadata
Classification	Folksonomies and the semantic web	Locally provided and relevant folksonomy
Acquisitions	e-bay, Paypal, Amazon and Abebooks	E-archives, e-data and quality assurance
Reference	Yahoo Answers and Wikipedia	Branded links to trusted resources
Preservation	Digital Archives and repositories	Institutional repository
User Instruction	Chatrooms	Moderate chatroom
Working space	Bedroom and Starbucks with a laptop	Wired campus and 24-hour workspace
Collections	Youtube, Flickr, Institutional Repositories, Open Access	Aggregation of unique content with other libraries
Professional judgement	The wisdom of crowds	Teaching retrieval skills

If it is possible to redefine the library in such terms, there are three key areas which will be the core of such a library service.

The first lies in content acquisition. One way of looking at this comes through the so-called long tail proposed by Chris Anderson (2006) as a way of describing the niche markets and small businesses developing around the big hubs such as Google, Yahoo and Amazon. But if new as a concept it is not new as a practice. “Libraries were into long tails before long tails were cool. Any library stocking more than a few thousand titles (i.e., the vast majority of libraries) knows all about the long tail. In fact, most large

libraries have collections that extend far beyond the utmost limits of the longest tail. In other words, many items in their collections have not been used since added. Perhaps some libraries, in an effort to boost circulation statistics, have focused too much on the "heady" end of their collections. Rather than cater to the clamorers for [Dean] Koontz, perhaps libraries should cultivate more long-tail usage. If the long-tail phenomenon is here to stay, perhaps the 80/20 rule (that 20 percent of the collection accounts for 80 percent of the use) will become increasingly suspect". (Peters, 2006)

It is very easy to describe library services and systems in terms of this long tail economy. We have developed systems for resource sharing, supported by shared and standardised cataloguing, messaging and delivery services and reciprocal access. It is accustomed to depending on others for services through a commonly created infrastructure. It is broadly possible to identify and borrow a copy of any book, in any language, from any country published in the last fifty years. However more recent library activity has tended to disregard this notion of building shared systems, so that in the UK there is no truly national union catalogue and a quite fragmented resource sharing infrastructure. We have forgotten the lessons of the past and need to rediscover the importance of aggregation. But the first building block will be an understanding of how we create, build and collect electronic collections locally.

When tens of millions of books are directly available through Google, what will libraries have to offer? It has arguably been the case that library collections were built for the future user not the current user, certainly in the humanities and historically based disciplines. It was also the case that and probably still is the case that research libraries collect more non-commercial items than commercial items. Archives, ephemera, local publications, government publications and so on are all acquired. It is a major failure of the present generation of librarians not to have engaged with collection policy for born digital material. There is no real debate on what should be collected and by whom and as a result valuable material is already being lost. Not just electronic mail, but increasingly the wikis, blogs, text messages, video clips and photographs never mind the research data, electronic maps and electronically plotted chemical structures which will form the historical documents of the future are simply ignored. Our successors will rightly blame us for this. An easy answer is that Libraries 2.0 should collect the born digital material which will give us brand differentiation. The same is true of all the intellectual output of our universities. The Institutional repository is an activity and space which librarians are ideally equipped to manage. We can see some elements of this future – although not yet with born digital material – in such deep archives as the immensely rich Valley of the Shadow – pulling together resources from a range of media, on the American Civil War. As was always the case, in the text-based age it will be our special collections and archives of electronic materials which will give libraries both purpose and brand differentiation. To follow the argument to its conclusion we should then accept Dempsey's (2006) premise that it is the aggregation of these

resources that will turn libraries into a major gravitational hub where any salvation must lie.

Having created the content, its preservation is another obvious activity. Research libraries have the great advantage of not being commercial activities. They have the luxury of storing material which may not be needed for decades. Commercial companies are, of course, driven by the need to make a profit. The technical issues around digital preservation remain uncertain but the lack of understanding and preparedness is all to clear. It revealed that fewer than 20% of UK organisations surveyed have a strategy in place to deal with the risk of either loss or degradation to their digital resources. This was despite a very high level of awareness of the risks and potential economic penalties. The survey further revealed that the loss of digital data is a commonplace – and indeed is seen as a routine hazard by some – with over 70% of respondents saying data had been lost in their organisation. Awareness of the consequential risks is high, with 87% recognising that corporate memory or key cultural material could be lost and some 60% saying that their organisation could lose out financially. In 52% of the organisations surveyed there was management commitment to digital preservation – but only 18% had a strategy in place.

The third area of need is in user instruction in information management skills. We can lament the fact that a Boolean gene to improve searching does not exist, or we can get to grips with search engines. There is little value in bemoaning the inadequacy of either users or the search engines they use. Libraries need to work with the grain of Google and help users understand how to maximise its effectiveness. Simply exposing users to Google Scholar as an alternative to Google would make a difference. At least some librarians are beginning to recognise the need to explore how they can take advantage of Google to assist users (Cathcart, 2006).

Beyond the hybrid library

Twenty years or so on, Carr has joined Thompson in the ranks of those who worry about the end of libraries.

“The ultimate warning note, however, is contained in a recent North American article which picks up many of the issues addressed here and which identifies many of the 'disconnects' between the services our academic libraries currently provide and the wants of the so-called 'Net Generation' now coming into early adulthood: 'Finding the right way to achieve balance between traditional values and the expectations and habits of the wired generations will determine whether libraries remain relevant in the social, educational and personal contexts of the Information Age' (Thomas & McDonald, 2006). In the final analysis, it is possible that 'What users want' may always remain something of a mirage (or at least a moving target). But one thing is certain: failure to take it properly into account would be sure to leave the academic library high and dry in the desert of lost opportunities.” (Carr, 2006a).

But if we look at the key skills of librarians and information professionals, they remain as vital as ever. Selection, storage and (user) support remain the basic attributes of a library in the Web 2.0 environment. And Ranganathan's requirement for the right information to the right user at the right time, remains pithily apt. In an environment with too much information, saving the time of the reader is what will ensure our continuing relevance.

But the library has no right to any of these three areas. The question is not so much what follows the hybrid library as whether, standing on the edge of the abyss, we have the self-confidence to make a great leap forward into (web) space.

References

Anderson, Chris *The Long Tail:* How Endless Choice Is Creating Unlimited Demand. London: Random House, 2006

Beloit College. Mindset Lists **http://www.beloit.edu/~pubaff/mindset/.** Viewed on 5th November 2006

Carr, Reg.(2006) The role of the JISC in changing the research library and information culture in the United Kingdom. JISC/CNI Conference York, 2006

Carr, Reg. (2006a) What Users Want: An Academic 'Hybrid' Library Perspective *Ariadne* 46 Originating URL: http://www.ariadne.ac.uk/issue46/carr/intro.html

Cathcart, Rachael & Roberts, Amanda. Evaluating Google Scholar as a Tool for Information Literacy in Miller, W. Libraries and Google. Binghamton, NY: Haworth Press, 2006

DPC (2006) Mind the gap: assessing digital preservation needs in the UK. Digital Preservation Coalition, 2006

Google 2006. These quotations all come from a Google search conducted on November 5th 2006 using the site names. They are then simply cut and pasted to illustrate the point being made….

Holliday, Wendy and Qin Li. "Understanding the Millennials: Updating our Knowledge about Students." *Reference Services Review*, v.32, no.4 (2004): 346-366.

Hong, Matt Content in the Emerging World of Digital Natives http://www.stuntdubl.com/2006/09/25/matt-hong/. Viewed on 5th November 2006

Lancaster, F.W. Towards paperless information systems. New York: Academic Press, 1978

McGinty, Stephen Online Amateurs beginning to put 'Britannica' under pressure. *The Scotsman* August 1st 2006, p27

Milne, Ronald. The Google Library Project at Oxford in Miller, W. Libraries and Google. Binghamton, NY: Haworth Press, 2006

Naughton, John. It's the 'digital natives' versus the 'immigrants' as kids go to work. *The Observer* October 1st 2006

OCLC. Libraries: How they stack up. Dublin: OCLC, 2003

Peters, Tom The Long Tail Wags the Dog. *ALA Techsource* 7th July 2006.

http://www.techsource.ala.org/blog/2006/07/the-long-tail-wags-the-dog.html
is an excellent example of such a blog

Prensky, Matt Digital Natives, Digital Immigrants *On the Horizon*, Vol. 9 No. 5, October 2001

Thomas, Charles F. and McDonald, Robert H. "Millennial Net Value(s): Disconnects between Libraries and the Information Mindset" http://dscholarship.lib.fsu.edu/general/4. Viewed on 5th November 2006

Thompson, James The End of Libraries London, Bingley,1982

Thompson, James, & Carr, Reg: An introduction to university library administration 4th ed. London: Bingley, 1987

Wikipedia. http://www.wikipedia.org/