From “Building Library Systems” To “Designing UX”

Barbara McDonald

Presentation at the University of Guelph

November 18, 2009

“...a wealth of information creates a poverty of attention...”

Herbert Simon

Introduction

When I first encountered Herbert Simon’s notion that a wealth of information creates a paucity of attention, I thought it was an interesting idea but I didn’t really “get it.” Twenty years later, I get it. I’m living it. You’re living it. We are all living it. Because we are living in a world where information is ubiquitous. We’re living in an age where more and more of our lives are computer-mediated.

Because the information landscape is extremely crowded it is really hard for anyone to get anyone else’s attention. In libraries we are sometimes frustrated that our users don’t seem to have the time for us that we think they should.

The “culture of distraction” offers many ways for us to feel good about contributing to the larger social enterprise – whether we’re trying to end poverty or provide information.

It’s easy libraries to feel good about creating online services and systems because technology is so accessible...

But how do we know the systems and services are doing what we need them to? How do we know we’re not just being ...

---

1 Herbert Simon. Computers, Communications and the Public Interest (1971)
... social media butterflies?

Ah yes, the relentless pursuit of shiny toys. I want to address the future of D&A tools but first I want to just note the larger concern. I’m worried that if libraries get too distracted by shiny new toys, we’ll never get to the much harder problems that need solving.

We have much hard work to do.

We need to focus *more* on understanding how faculty & students create, find, use, manipulate, filter, assemble, manage, synthesize, **conceptualize**, mashup... information as digital scholars.

We overlap with thousands of other players in the information marketplace in being interested in digital information. But there’s lots of room for different perspectives. But we have a unique approach. We’re not google. We have a unique perspective because we care about these issues in a different way, and are uniquely positioned to address them.

We need to understand digital scholars habits and workflows in order to respond with appropriate roles for US in supporting their work, and in collaborating with them in the production and preservation of research and ideas.

Discovery and Access is one aspect of the problems we need to solve.

Today I’d like to suggest that we consider reframing our approach. Rather than thinking about building systems, I’d like us to think about designing user experiences. The “build it and they will come” model isn’t quite working the way we thought it was. In the attention economy, the challenges have changed.
[Barbara’s Vision]

So I guess I’d better start right off the top with my VISION for the future of D&A because that’s what I was asked to talk about, and that’s what you all came for. Besides I don’t want to get distracted, and forget to get to it!

Hmmm. A little messy. Looks kind of old fashioned. [Is she a dinosaur?]

Not super flashy. But all the elements are there.

And it’s messy on purpose. Because:

- the real world is messy
- we’re figuring it out as we go
- libraries and library tools are works in progress. Never finished, never perfect
- D&A are not isolated activities

Okay so first, the scribbles

- A nimble organization is essential in a world that’s constantly changing. I’ll come back to that.

- Question: Is the library website NOT a primary discovery tool? There are If not, why not? Should it be?

- Design/build for libraries: Another way of thinking about nimble organizations which I’ve found helpful is a concept from architectural projects. design/build is a model in which the design and building phases overlap. In other words, you don’t finalize everything on paper before they pick up a hammer. The process is iterative. The building may make you change the design....

I’ll talk briefly about money. Specifically why some people see libraries as money pits.
A bit about my background. During my career I’ve built various kinds of systems, some physical and others virtual. Some, like reference, were both. Libraries build complex systems involving people, technology, spaces, rules, regulations, policies, procedures.

I’d like to speak briefly about the Memorial campus wide information system, because it was a formative professional experience for me and it taught me lessons that helped me with all of those subsequent projects.

When I was a very new librarian I was asked to collaborate with a colleague from campus IT to build an internet presence for memorial university. So I taught myself unix, immersed myself in all things gopher and.....

[**Gopher Menu**]

TA DA!

Here’s a gopher menu. You laugh, but in 1992 gopher was state of the art, a huge step forward in making internet navigation easier. When my IT colleague told me that we shouldn’t invest too much time worrying about a cute logo, I was puzzled. Why not?

“Because gopher won’t be around that long!” he said. (and he was very kind about it).

I was taken by surprise. I’d been so intent on tinkering with gopher, that it just never occurred to me how quickly it could become obsolete, supplanted by a NEW protocol (http).... the world wide web.

Lessons learned:

1) Never allow yourself to be captivated by a single technology. Any technology. It doesn’t matter whether it’s software, or hardware, proprietary, open source or computer architecture.
2) Keep your head up and eyes open. The future is all around us.

The future doesn’t just pop out of nothing, it is rooted in today’s environment. The problem of course, is that most future predictions are best made with the benefit of hindsight.

Focusing too much on a single technology is a variation on the attention problem. Libraries are susceptible to both. Mostly as a function of our innate desire to serve users, we want to use *all* the technology available to meet *all* users in their space. We have a tendency to try to be all things to all people.

But if we become *too* invested in any one solution or technology, we risk becoming defensive and protective of our pet projects. Which leads to dogmatism. And poof – before you know it - the technology is obsolete.

The only thing librarians should be dogmatic about is championing the needs of our users, and being advocates for the core values of our profession.

[Library SystemsThinking 1.0]

How do Libraries Build Systems?

So how do Libraries Build Systems? Or people who work in libraries?

We think about users, and build systems for them. Right?

"the convenience of the public is always to be set before the ease of the cataloger."

In most cases they coincide...." Charles A. Cutter. Rules for a Dictionary Catalog .1904 p. 6 http://digital.library.unt.edu/permalink/meta-dc-1048:6

The catalogue was a marvelous piece of technology in so many ways.

But the rules for the catalogue were never intended to become more important than the user. Unfortunately somewhere along the way, the
catalogue grew and grew and the rules became so intricate and complicated that it became an end in itself. We simply lost our users and got in our own way...

[Library SystemsThinking 1.1]

When we moved on line to OPACs, the transition from paper to online felt like a revolution. But as a SYSTEM, OPACs were essentially automated card catalogues. (+ user friendly name).

[Library SystemsThinking 2.0]

What about Library Website? What does it tell us as an example of how libraries build systems.

We started with online catalogues or OPACs but as the web matured, we added more and more features to our websites, in addition to the OPAC.

I'll use my own library website as an example of a fairly typical academic library website in 2009. In addition to our catalogue, the centrepiece, our central book database, we ALSO have:

• ILL database
• 2 article databases (article database and e-journals)
• citation management database
• several options for searching
• total of (57?) links

Librarians view our website as the library's primary Discovery and Access tool. Or tools. We build websites as a service to our community, so they have a single, primary research portal.

But look at the library website from the point of view of users, or users with adaptive technology, or designers.
Library websites offer:
  too many confusing systems and choices and interfaces (too “contenido” – Robin Christopherson)

- And the good features we do offer are completely overwhelmed by a vast array of confusing choices that overwhelm and discourage users.

- The tools in themselves are “good” but don’t integrate with each other or with researchers’ workflows

This is what my friend and colleague Peter Rukavina calls “applications based system design” – we bolt together a bunch of very useful tools, or applications but they exist independently from each other, and do not integrate well.

For ONE research project I would need X separate accounts:
  - RefWorks
  - RACER
  - library
  - scholars portal My research
  - maintain ebook shelves in ebrary, netlibrary, EBL

Almost every publisher we deal with tries to lure our users into setting up account on THEIR system. We need to solve the digital identity/authentication problem.

[Library / Google]

Compare almost any academic library website with google. Not as a search tool, but in the design sense. The two things you notice are that:

- Library websites expose their complexity, whereas Google’s complex algorithms are hidden and the advanced search options are not on the front page

- Google provides an entire, integrated environment, if the users chooses to use it: searching, document creation and storage,...
Library systems represent an ‘applications based’ approach to systems design. Google represents a “capabilities based’ approach. Google allows people to integrate their online activities. The experience of using google is coherent.

[Applications vs Capabilities]

Again, from Peter Rukavina the differences between:

Applications
- discrete
- manageable
- predictable
- obvious
- demarcated
- artificial

Capabilities
- interrelated
- malleable
- extensible
- invisible
- in the flow
- organic

Both a library website and google have enormously complex tools running “under the hood” if you will.

[CURRENT website aims and IA]

- content
- put it in databases
- provide interfaces to those databases
- so scholars can get materials and collection citations
[FUTURE CONCEPTION AND AI]:

But perhaps we’re setting the bar too low, Here’s another way of thinking about the Aims and IA of library website:

- huge number of evolving standards, software and computer environments
- harvest data in different formats from different databases and EXPOSE that metadata
- to enable scholars to

One of the things we have to admire about Google. Their aims:

- perfect search engine
- all the world’s knowledge

Google’s IA:

- zillions of networked computers
- patented Page rank and indexing technology

But, UX librarians tell us, we’ve done usability testing!

Usability testing is a useful tool, but not if we just use it to reinforce our own assumptions.

We sit users down in front of our home page, and give them a series of tasks to do. find a book, and article a journal, a course reserve.

That's because usability asks the question:

- "If I lead a user to our website, can they perform specific tasks?"

And distracts us from the larger questions such as:

- "what are the core requirements in a virtual research environment for students"?
• Why do faculty perceive scholarly information as “Free” when the library is paying for much of what they are referring to?

My point is simply that libraries have become very proficient at building a certain kind of system. We’re very good at building systems. But a hundred years after card catalogues, library websites reflect very a similar kind of systems thinking. Different technologies, but similar sensibility.

The risk with that kind of sensibility is that we treat the library website as a stand-alone entity. As a demarcated research tool. Walled garden. But we know we’re in danger when systems become ends in themselves. …

Libraries today are as wedded to our websites as we once were to our card catalogues (OUCH).

We’ve invested SO MUCH sweat equity in specific technologies that we've become way over invested. And when we get super invested, we tend to get defensive and protective about our practices, and merely look for data to reinforce what we are already doing.

It’s *easy* to keep tinkering with them endlessly. Instead of leaning into simplicity, we go in the opposite direction. We just keep adding features, widgets, gizmos, flash, chat boxes and search options and … get seduced by the technology. Succumb to “creeping featurism”

The OPPOSITE of agile.

So if our goal is to have the library website be the main research portal for our users, then kind of.

But while we spending so much time on our websites, the world is changing (just as I did with gopher)

So that begs the question: should we think of the library website as our main D&A tool, or collection of D&A tools?

Yes.

But
• Perhaps it’s time to reframe our goals and conception of the IA and at least consider, be open to the possibility that the website will not last in its current form.

What endures in the library website, what's important, isn't the website, it’s the knowledge embedded in the tool. Just as the knowledge in the card catalogue, the metadata about books, is what survived into the online world. That’s the essence.

So when we’re thinking about the future of D&A Tools in libraries, it’s not about tweaking the website, it’s about being integrated into the scholarly research process.

And, of course, there’s always the unseen disruptive technology that comes along to FORCE us to change our ways.

[UTL main page]

Here’s the UTL main website.

A quick count shows about 30 options or links (that’s without exposing any of the pulldown menu) “above the fold” not counting the news or event links.

This one here MOBLE

[UTL mobile page]

Takes us to their mobile page.

And there are, what, SIX links?

OK so we can thank cell phones for:

- The reappearance of phone numbers in a prominent place on websites
- FINALLY making websites accessible to users of adaptive technology
- Cutting out the extraneous fru-fru
Cell phones will accomplish what all the legislative carrots and sticks (AODA) could not?

Web designers who think about universal accessibility have been advocating for LESS IS MORE.

MOBILE design is better for EVERYONE. For desktop users, for adaptive technology users

- flab taken away
- serve up core content
- DESIGN: create logical reading structure THEN put CSS on top / apply design in layers
- signpost "basic html" on page for people (dont assume people know how to turn off javascript) - make more accessible

Okay, so we want to move into UX. Before we do, we have to pause a moment to talk about money.

$$$$$$

How will we pay for this new venture? Money is not commonly discussed at the library table. While we may not like to talk about it much, others do.

Along with attention, money is becoming scarce. We cannot afford to jump on every technology bandwagon. Our decisions to purchase particular technologies (or to go open source) have a long term legacy, so we have to be prudent as stewards of public money.

We face financial constraints that force a kind of urgency onto our decision making and planning, so the stakes for getting it right are very high.

[Greenstein]

Money’s tight and could get more so. Senior academic administrators, for example.
The reality is that because of the availability of information, it is a common perception that it is free. Or should be. And if it is free then why are libraries such relentless money pits – always asking for more?!?

["Information Wants to be Free"]


“Information Wants To Be Free” goes on…. to say:

Information also wants to be expensive. Information wants to be free because it has become so cheap to distribute, copy, and recombine—too cheap to meter. It wants to be expensive because it can be immeasurably valuable to the recipient. That tension will not go away. It leads to endless wrenching debate about price, copyright, ‘intellectual property’, the moral rightness of casual distribution, because each round of new devices makes the tension worse, not better.

[FREE]

Chris Anderson – editor of WIRED magazine, takes that “too cheap to meter” idea further in his recent book FREE

As librarians we are stewards of public money. We have got to demonstrate more fiscal acumen in talking about our work. There are real costs to “digital engagement” and we have to be prepared to speak about and defend our decisions.

One of the dangers of buying every new shiny toy is that you run the risk of being left a few years down the road with a bunch of rusty toys. Uh, tools.

Discovery tools are one of our highest costs. Integrated library systems are very expensive. How expensive? Uh, no one really knows.
[Marshall Breeding]

“I have never been able to discover a great deal of data describing what libraries actually pay for their automation products.”

He goes on to say that, in fact, most libraries feel like they are getting value for the money we spend on library technology like ILSs and discovery software. But his point is just that we need to be more open about the whole topic.

The Association of Research Libraries agrees. Back in June they passed a resolution, put forward by their Scholarly Communication Steering Committee, to strongly encourage ARL member libraries not to sign agreements with publishers or vendors that include nondisclosure or confidentiality clauses.

Can We Make the Financial Case for Libraries?

Of course we can! libraries are growing organisms.

As recently as the 1990s senior admins were talking about closing libraries.

The response from libraries: Learning Commons movement. We very successfully reinvigorated our physical spaces, using a much different mental model than our libraries were founded on.

----

So enough about Libraries already. What about users? What is this UX and how might libraries DESIGN user experience?

I’d like to take two perspectives on users that have helped me increase my appreciation for and understanding of users.

The first is a theoretical orientation, the second is data from the CIBER research product on the Virtual Scholar.
First: what can we learn about users from behavioural economics?

[predictably irrational]

Traditional economists develop theories and models based on an underlying assumption that "all human decisions are rational and informed, motivated by an accurate concept of the worth of all goods and services and the amount of happiness (utility) all decisions are likely to produce. Under this set of assumptions, everyone in the marketplace is trying to maximize profit and striving to optimize his experiences." (Ariely 240)

If that were true, people wouldn’t make such bad financial decisions, greed couldn’t topple multinational corporations, we’d all top up our RRSPs every year, and recessions would be predictable.

Traditional models of economics are breaking down.

Behavioural economics tries to reframe that perspective, to understand WHY people do such apparently irrational things when it comes to money. Behavioral economists...have, in my view, a more nuanced and holistic approach because they understand that "people are susceptible to irrelevant influences from their immediate environment... irrelevant emotions, shortsightedness, and other forms of irrationality." (Ariely 240)

In a similar way, librarians (and publishers) design systems which really only address fictional, ideal, unrealistically ‘rational’ researchers. We design systems based on the premise that our users:

- always seek the BEST quality information
- are willing to invest time in order to equip themselves with complex knowledge in order to OBTAIN the best information out of databases or sources

If faculty and students were rational researchers, would they not start all research from the library home page? Where we have provided them with powerful, targeted, efficient systems to meet a multitude of information needs? When they bypass us in favour of amazon or google, it just doesn’t make any logical SENSE to us. Our databases are so much better! More
precise! More effective! More efficient!

Behavioural economists tell us that, not only do people act irrationally, but they are consistently irrational. Predictably irrational.

Ditto researchers. Not only did they start their search at google two months ago, but they did so again last week and again this morning, in spite of our newly improved website, added features or redesigned interfaces.

Behavioural economists do not mean it in a pejorative sense that people are ‘irrational’

Nor am I am not in any way sneering at library users... or librarians. But what if librarians were to finally acknowledge that our users do NOT want to be expert researchers, and were to recognize that users engaging in “dubious” (to US) research strategies isn't a deviation, it's a predictable, and perfectly reasonable way for them to behave. In our hearts, we know that users do things for their reasons, not ours, yet we continue to behave as if their reasons were ours, or that we can somehow change their behavior.

The point I’m making is really just that a change of orientation, from system building to designing user experience will be insufficient to keep us from being mired in digital concrete if we don’t work WAY harder at understanding user behaviour, attitudes and preferences.

Another way to say this: instead of thinking about “users” as “library users” or “researchers” think about them as busy people who engage in many activities, one of which is using library resources. A lot messier, harder to research but more real.

My second perspective on users comes from UCL.

[Digital Consumers 1]

According to the CIBER Group at ULC It turns out that they’re not researchers at all but SHOPPERS!
The Virtual Scholar Program at UCL collected and analyzed the digital footprints of scholars from 2001 – 8. It’s the largest research project of its kind. I think it’s important research, and I’m still trying to digest it all.

So they looked at thousands and thousands of user activities, doing “deep log analysis” on their searching habits.

They concluded that

user groups very similar (image searching: the possible exception)
Internet = domestic + leisure + work
shopper / consumer

The main characteristics of digital information seeking behaviour in virtual libraries are:

[Digital Consumers 2]

horizontal power browsers
- 1-2 pg from academic site then `bounce’ away
- skim titles, contents pages and abstracts

frenetic
- spend as much time finding their bearings as actually viewing what they find

bounce/dip
- 2/3 to ¾ uses of library users do NOT come in via the home page, but drop deep down into the site for a particular item discovered via google (or other SE)
- Users short circuit the home page we have spent so much time on
- Once in the site, they engage with resources, dipping in and out

view, don’t read (my words: read “differently”)
- Avg time in e-book = 4 minutes
- Avg time in e-journal = 8 minutes
- 60% e-journal users view no more than 3 pg
- up to 65% e-journal users never return

squirrel away content (pdfs)
- Carol Tenopir researching - are they actually read
Trust/authority decisions= brand recognition
- assess in a matter of seconds by dipping and cross-checking across different sites and by relying on favoured brands (e.g. Google).

[Convenience / Quality]

"Convenience will always trump quality. It's our job as librarians to make quality convenient."

If scholars aren't using the library website, what are they using?

Two examples
- SSRN
- Mendeley “itunes for research papers”

Are these the new departmental libraries of the digital age?

[UX 101 Dan Rubin]

The essence of UX: "If your interface needs instructions it needs to be redesigned"

Definition of UX
- the overarching experience a person has as a result of their interactions with a particular product or service

- originally UX=websites - broadly expanded to products - services - environments - integrated (multichannel experiences)

- intriguing idea from design part of UX is that "an acquired mindset for which there is no cure". once you see things in terms of UX/design, you can't unsee it
UX design is the process of taking deep knowledge about user behavior and preferences and translating it into integrated, positive user experiences.

Some of the UX lingo leaves me feeling a bit daunted, I’ll confess:

- Not just customer service, or customer satisfaction, customer DELIGHT!
- “the long wow”

**[UX informed by core values and “capabilities” based system thinking]**

**[UX informed by “capabilities” based system thinking]**

**[crystal ball 1]**

So you’d probably like me to weigh in on the merits of a local, open source solution versus the big bad vendor or the OCLC cloud computing solution [Stephen Abram/Mark Leggott]

It depends.

As an outsider to Guelph and TUG I can’t tell you definitively whether ExLibris is the “right” solution. I can only tell you that I’m an agnostic when it comes to all things technology.

I DO KNOW there are many possible futures for D&A and the answer does not lie in a single technology. It relies on maintaining an unrelenting focus on doing what we need to do for our users, even if that means changing technology five times in five years. (If we can afford it)
[Library Automation Marketplace]
The Library Automation marketplace is in some ways simpler than it was when there were more big vendors. But there are so many start ups and options, that it’s pretty healthy.

[INTERNET LANDSCAPE 1]
We can’t focus ONLY on the library marketplace.

Here is a visualization of some of the companies, standards, protocols in the wider environment. This is the looking for the future in the haystack of possibilities.

[INTERNET LANDSCAPE 2]
How quickly things could change. Maybe:

- google owners will get into a big fight and sell
- A benefactor will donate a billion dollars to the Internet Archive, and donors will follow suit and support Canadian libraries

[cRYSTAL BALL 2]
I would call myself a pragmatic idealist. So in heading into the future of D&A I would say we need to focus on combining:

- enduring DATA served up by lightweight* applications
- enduring VALUES inform our service design*
*changeable

[Library/DA Goals ]
You’ve set yourselves enough challenging goals in your renewal process, that I’m not sure you want me weighing in with more!

What I would say are the biggest challenges:
Library
- Executive, Leadership, all levels: keeping attention FOCUSED on the core academic mission of the library
- Demonstrating/role modeling for each other what it means to be AGILE as an organization. No bloated processes or plans. Not getting bogged down in procedures. But paying attention to good process...
- Articulating value for money

D&A
- Expose and brand content. Make sure people know you’re PAYIng for things. Avoid vendor labeling; shout LIBRARY every chance you get (what does “primo” search mean to a user?!?)
- embrace a design/build mentality
- Embrace a ‘capabilities’ based thinking. IS THIS GOING TO INCREASE A USERs CAPABILITY AS A RESEARCHER? Keep asking!

[From applications to capabilities]

Conclusion

I set out to try and persuade you that our systems thinking has become a little entrenched, and to reassure you that I think our expertise as systems builders is an asset in UX design.

I advocated reframing our systems thinking. To not think just about bolting individual applications together, but to think about building the digital scholarship capacities of our users.

I hope I’ve at least convinced you to think about these things.

Your new Head of Discovery and Access will have a great challenge in designing a unified physical and virutal “user experience”.

Yes, it’s another chorus of “reinventing the library” but I’ve read your review documents and some of your plans, and it is evident that you are up for it, because you are committed to evolving as an organization.
Thank you (for your attention!)
Sources of Inspiration / Information

Library


- Roy Tennant. ILS in the Sky With Diamonds http://vre2.upei.ca/access2009/ilssky


Nancy Fried Foster and Susan Gibbons (Editors). Studying Students: The Undergraduate Research Project at the University of Rochester. 2007. http://hdl.handle.net/1802/7520


Organizational Focus and Agility


UX/IA/Design


Amanda Etches-Johnson. Endless (?) source of UX advice, wisdom and enthusiasm.


