Emerging Technologies: A task? A specialty in librarianship? For now, the answer appears to be, “Yes.”

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About Me and My Institution
Me

- Title: Emerging Technologies and Systems Librarian.
- Did not ‘hit the ground running.’
- Why I proposed this talk
My Institution

• St. Cloud State University is a complex organization.

• A public institution serving a total student body of approximately 15,000.

• At the University Library, no decisions on programs, systems, or materials happen unilaterally.

• Experimentation with new ideas most commonly done by individuals or very small groups to address problems specific to their area.
Where I Started: Mental Models—Ideas and Reality
Stages of Technology and Degree of Attention Paid.

Hokey metaphor...
Tech not yet hatched?

Interested.
Hatching?

Quite interested.
Watch it grow, see what it does, watch for its neighbors and offspring.
Whoops.

Qualified ‘Interested’.
(Maybe there will be a tasty omelet soon.)
Innovation and the Notion of the “Adjacent Possible”

• Formulated by complexity theorist Stuart Kauffmann in 2002 as a way of thinking about biological evolution.

• “Each innovation changes the landscape of future possibilities” i.e. creates new adjacencies.

• ‘Possible’ does not necessarily mean ‘easily imaginable,’ so there are always two sets of adjacencies.

(Emerging Technology from the arXiv, 2017).

• In other words, development paths are enormously affected by the context of each step.
Reality: Obvious Example from the Past

- Horse
- Early Mass-Produced Automobile

Ford Model T: ad from The Watchman and Southron, November 12, 1910, image from The Library of Congress.
Riddle/Hypothesis

Q: When is an idea or technology fully mature?

A: When it becomes a toy.
Reality: Continuing this Example Into the Present

Modern Automobile

Autonomous Vehicle

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Libraries.
• Since 2014 there have been many vacancies in academic and public libraries for ‘Emerging Technolog[y/ies] Librarians,’ or listing emerging technologies work among the duties of posted positions.

• Recognition of the need for work in emerging tech is extending to law, STEM, and health sciences libraries.

• In academic and public libraries, emerging tech duties may be shared among library positions.
From the job market:

• “Effectively identifies and applies new technologies in support of efficient processing activities and develops expertise with emerging technologies.” 2017 vacancy for a head of tech services and electronic resources management.

• “…seeks a service-oriented and forward-thinking Emerging Technologies Librarian. The Emerging Technologies Librarian will be responsible […] for taking a leadership role in leveraging new technologies to meet the needs of scientific researchers. To achieve these goals, the Emerging Technologies Librarian provides in-person and virtual reference assistance, library instruction sessions, and one-on-one in-depth consultations in all areas of the sciences. The Librarian also provides outreach and instruction for the Science Library MakerSpace and manages the Science Library website and social media presence. Night and weekend work is required. (late 2016)

Others:

• “Developing strategies to select, integrate and promote emerging technology in the modern library.” (n.d.)

• “Provide vision and leadership to investigate, evaluate, and incorporate emerging technologies into library systems and services.” (2014)
Current Impressions

• Libraries need perspective on technological developments beyond their walls.

• Many libraries are struggling with staffing.

• Most tech acquisitions and implementations are intended to solve a specific problem.

• Those doing the hands-on work of the library are commonly in the best position to identify specific problems, and often, applicable technology solutions.
‘Begin where I am’: @OurLibrary
St. Cloud State University Library
Our Challenges

• Forming an *understanding* of ‘where I am’

• Shrinking Library faculty and staff

• Translating insight into action

• Gray/transition areas where no one person can buy and implement new tech

• Amorphousness of the task

• Money/Funding
My Approach to These Challenges:

- Shrinking faculty and staff
  - X
- Money/Funding
  - X
- Grey/Transition Areas, and Translating Insight into Action
  - Be present, and participate in group decisions.
  - Contribute the Emerging Tech (and Systems) perspective.

- Forming an understanding of ‘where I am’
  - Has taken over two years.
  - Requires knowledge of the State of Minnesota, the System, the University, and the Library.

- Amorphousness of the task
  - Feeding my imagination regarding library applications
  - Devising iterative scan of:
    - the technology landscape—what people carry, wish for, or find interesting
    - sources of current awareness—periodicals, company information, research lab updates
Provisional Thought Framework (General)

• When are library resources needed?
  • Life/Professional/Educational context
  • Time of day/year

• Who doesn't use the library? Why?

• Resource Sharing
  • What is reasonable to expect people to pay for themselves?
  • What is reasonable for the Library to supply?

• Infrastructure.
Who Doesn’t Think About What might catch on? I Ask Myself...

- What’s now gone?
  - Ex. R.I.P. VHS, hello BluRay

- What’s totally new, and gaining traction?
  - Ex. Blockchain: Bitcoin, then Medical Records. Will ILS developers adopt for circ transactions? (We will never need to develop this, but Ex Libris, III, OCLC WMS could. Are there privacy/data analysis implications?)

- No need to predict; WONDERING is constructive.
Keeping in Mind Possible Disruptions

- What about Open Access?

- What if ProQuest or EBSCO were to develop resource bundles affordable to the individual user?

- What is the future of patron privacy, and if it goes the wrong way, will patrons hesitate to use library services?
Old technology may become new again.

- “[...] the team was surprised that digital media didn’t capture the teenagers’ attention as they’d imagined [...]. Instead, the kids were fascinated by the typewriter and wanted to paint murals.” (Peet, 28)

- So. More questions:
  - What can users do at the library that they cannot do at home?
  - With whom? And: When? I.e. During what hours?
  - (What do users need from the library for use at home that they don’t already own?)
Getting there

As we tell our students when teaching them the process of research, tech awareness is iterative.

Community-awareness is layered.

Keeping Systems work and Emerging Tech work each in their own compartments is tricky, but necessary.

For now I want to see over the horizon in as many directions, and from as many altitudes as I can, and accept that there will still be surprises.
Recommended Reading and Resources: A Start (also, this will change).
Further Reading


Gartner's 2016 hype cycle for emerging technologies identifies three key trends that organizations must track to gain competitive advantage. Retrieved from http://www.gartner.com/newsroom/id/3412017
Further Reading, cont.


Intellectual Property, Hiring, Mergers & Acquisitions (a Start)

- Amazon [https://www.amazon.com/](https://www.amazon.com/)
- IDEO [https://www.ideo.com/us](https://www.ideo.com/us)
- Magic Leap (the World’s Most Secretive Start-Up! [Wired]) [https://www.magicleap.com/#/home](https://www.magicleap.com/#/home)
- 3M [http://www.3m.com/](http://www.3m.com/) (and other library systems vendors)
Periodicals

- Ars Technica [https://arstechnica.com/](https://arstechnica.com/)
- Businessweek [https://www.bloomberg.com/businessweek](https://www.bloomberg.com/businessweek)
- Entrepreneur [https://www.entrepreneur.com/us](https://www.entrepreneur.com/us)
- MIT Technology Review [https://www.technologyreview.com/](https://www.technologyreview.com/)
- New Scientist (UK) (some free content) [https://www.newscientist.com/](https://www.newscientist.com/)
- Science News (US) (some free content) [https://www.sciencenews.org/](https://www.sciencenews.org/)
Email Newsletters, Listservs, Discussion Fora

- MIT Technology Review [https://www.technologyreview.com/](https://www.technologyreview.com/) (scroll down for newsletter registration—just below ‘Top Stories’)
- NEW ATLAS [https://www.technologyreview.com/](https://www.technologyreview.com/) (scroll down for newsletter registration)
- Readwrite [http://readwrite.com/](http://readwrite.com/) (dialog box prompts for newsletter signup at homepage)
- Discipline-specific listservs
- Reddit/relevant subreddits
Occasional Publications

- Forrester Research [https://go.forrester.com/](https://go.forrester.com/)
- New Media Consortium [https://www.nmc.org/](https://www.nmc.org/)
Research Entities

- MIT Media Lab [https://www.media.mit.edu/](https://www.media.mit.edu/)
- Harvard iLab [https://i-lab.harvard.edu/](https://i-lab.harvard.edu/)
- Forrester Research [https://go.forrester.com/](https://go.forrester.com/)
- metaLab (Harvard Berkman Center) [http://www.metalabdesign.com/](http://www.metalabdesign.com/)
Just for fun, watch:

- The toy industry
- Etsy.com
- Crowdfunding sites
  (Which projects exceed their requests? How quickly?)
  - Kickstarter  https://www.kickstarter.com/discover/categories/technology?ref=discover_index
  - Indiegogo  https://www.indiegogo.com/#/picks_for_you
- Tech in media
- Subscribe to discipline-specific listservs
- Follow scholars on Twitter
Thank you!

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