

Reimagining libraries & learning for the 21st Century



Leveraging the edge in the exponential age

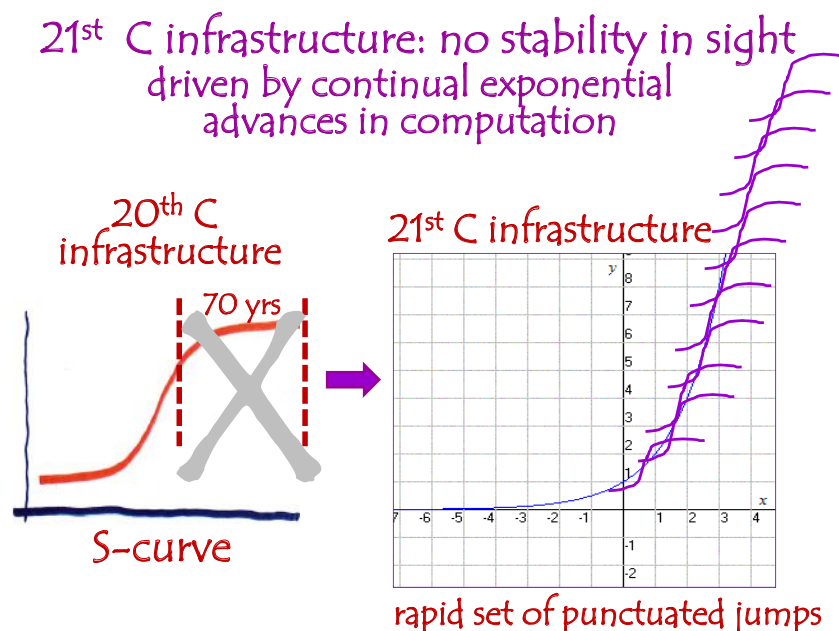
JOHN SEELY BROWN

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“The real difficulty in changing any enterprise lies not in developing new ideas but in escaping from the old ones.”
- John Maynard Keynes

OUR CURRENT CONTEXT

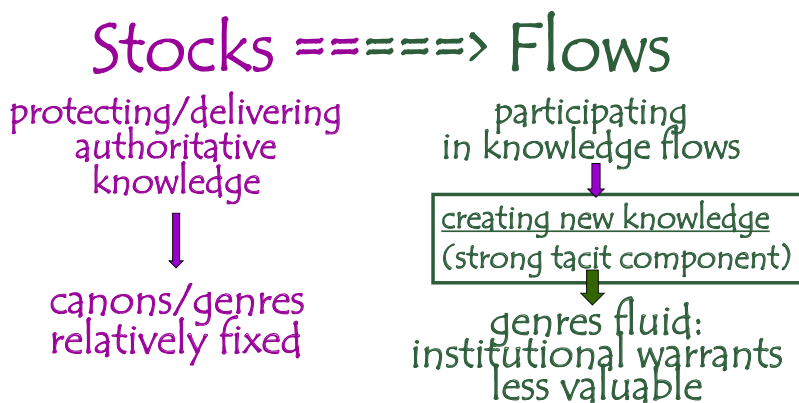
I like opening with this quote by John Maynard Keynes because, for most of us looking to introduce new ways of thinking and new practices into our organizations, our challenge has as much to do with escaping old ways of thinking as with creating new ones. When looking at our current context, I often refer to this as “The Exponential Age,” with new technology providing us tremendous opportunity but also tremendous social and institutional challenges. We need to understand both sides of this equation. This theme of The Exponential Age is a shift from our previous world of “S-curves” in which there were moments of brief, punctuated evolution followed by 50 to 70 years of stability during which we had time to reinvent the social practices, learning practices, institutional structures and so on in response to the new technology. That pattern has dominated for the last 300 years. In today’s age however, there is no period of recovery since technology continues to evolve at an exponential rate, with no end in sight.



In the face of such tremendous institutional challenges and tremendous opportunity, I'm also fond of quoting two other people: David Weinberger and Carla Hesse. In his novel *Too Big to Know*, Weinberger says, "We used to know how to know. We got our answers from books or experts. We'd nail down the facts and move on. We even had canons...but in the Internet age, knowledge has moved onto networks. There's more knowledge than ever, but it's different. Topics have no boundaries, and nobody agrees on anything." Similarly Carla Hesse, professor of history at Berkeley, says, "In the future, it seems, there will be no fixed canons of texts and no fixed epistemological boundaries between disciplines, only paths of inquiry, modes of integration, and moments of encounter." These two quotes speak to two radically different states of being — the fixed ways of the past and the fluidity of the present and future.

That difference is captured in the fact that in this Exponential Age we are moving into an era in which the half-life of most of our skills is shrinking to about five years. That is a tremendous challenge for formal schooling. However, it also creates tremendous opportunities for community libraries to fill in the gaps. To me, it's about making the significant shift from thinking about information as stocks of knowledge to thinking about it as flows. We know a lot about how to protect and deliver authoritative knowledge. Before the Exponential Age we had fixed genres and the same set of skills that we could teach over and over again. Now, with networked information, it is a world of flows.

In a world of increasingly rapid change,
the half life of many stocks/skills is
constantly shrinking.
 (perhaps as low as 5 years)



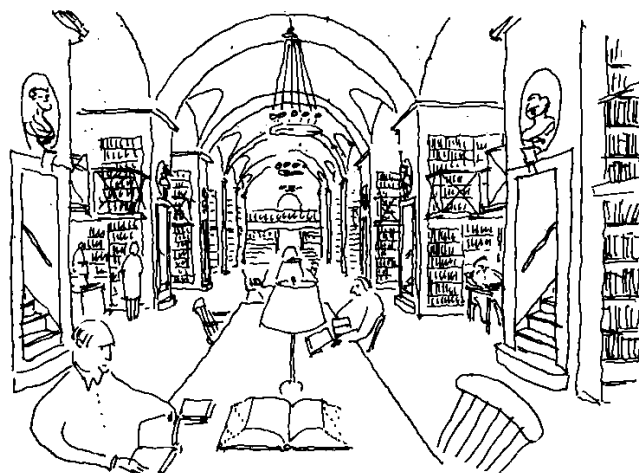
How do you participate in a world of flows? The catch is that in participating in knowledge flow, most of what you create is tacit and we do not yet know how to capture tacit knowledge very effectively. So, we already have a fairly interesting epistemological challenge there, but on top of that our genres are now fluid. That means we can no longer count on institutional warrants like we traditionally have, like how I grew up. I can't say, "Well this information appeared in this journal, therefore I necessarily believe it." You can see this happening with many publications. The whole notion that institutional warrants are becoming less relevant than ever, that's kind of a shocking idea. But if you really think about it, most of us today — embedded in vast, interlocking networks — understand that it's very hard to figure out what is really going on and what to believe.

IN FLUX

Our vision of libraries is itself in a state of flux. However I'm going to argue that although our vision may be in flux, our priorities and values are actually stable. There are three priorities that I think stay in place: 1) the library as a hub of a community 2) the library making the most out of digital technologies and creative media, and 3) the library mentoring, connecting, guiding, and curating.

The traditional/core epistemology

homo sapiens
man who knows



I grew up in a more traditional world. The core epistemology of that time was based on *Homo sapiens*, man as knower. This meant you went to the library as the definitive resource for figuring out what you should know. What's been happening more recently is we've been extending this traditional epistemology into a blended epistemology. Almost everyone in this room has been engaged in one form or another of a blended epistemology. The simplest one is how we now blend *Homo sapiens*, man who knows, with *Homo faber*, man who makes. We make things and we make content. The Maker Movement is a simple example of this step toward a blended epistemology, but we hear about it often and could spend hours talking about fantastic examples of blended epistemologies within it.

Extending the traditional epistemology - toward a blended epistemology

Homo Sapiens
man who knows



Homo Faber
man who makes



content/things



The maker movement and beyond



Instead, I want to shift focus slightly and say there's another more subtle extension of this blend. Yes, we know a lot about man as maker, but today with our exponential, networked technologies we build *contexts* as much as *content*. Think about how we make context today. What is blogging about? What is remix about? These are actually changing the context around content.

A great example of this is how, by changing the music to a video, I can completely transform what you think that video is about. In fact, the sound often influences what you *see*. A great example is in *Jurassic Park*. We all remember that dramatic scene where the dinosaur picks up the guy and chomps him alive. Go back and do a still-frame analysis of that scene and that image isn't there. The sound was there, feeding our imagination, and we filled it in. It's one of the reasons why we can't forget it. That is just one very clever way that, by architecting context, you can do amazing things.

Propaganda is another good example and is one of the reasons why we now study how to shape context in all kinds of ways. In fact, I'm going to argue that in today's world — given the fact that warrants are fluid at best — without classical, stable institutional warrants perhaps reading context today is as important as reading content. Yet, many of us have not been trained to read context.

Today's kids on the other hand don't believe anything they read. Instead, they triangulate different contexts to try to figure out what is reliable. There's been a shift from reading content to context among the younger generation, but most of us are untrained to think about the different ways we read contexts. Reference librarians of course are skilled at doing this. They don't tell you what you're looking for, like good mentors, they tell you how to find things. Still, I think there's a lot we can learn by talking to kids today, especially in regards to how they create and interpret context. Indeed, perhaps reverse mentorship is now just as important as traditional mentorship as we move forward in how to reconceive the library in the 21st century. What we've traditionally thought of as authoritative may need to be rethought and remixed.

Extending it even further

Homo Sapiens
man who knows



Homo Faber
man who makes



This could mean many things...

↓
content/things
&
CONTEXT

Developing new reading practices for reading context is now more important than ever in our 21st world of fluid genres??



Hmmm, maybe today's kids can help us as we help them.

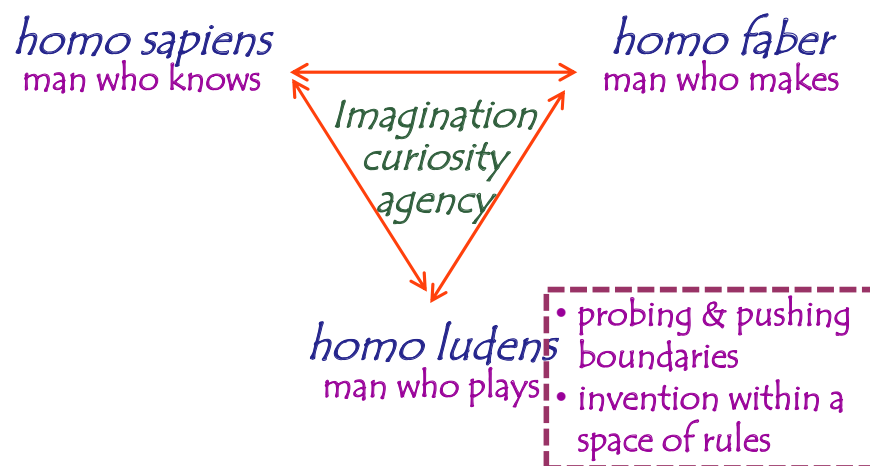
mentorship meets reverse mentorship: a winning move

EXTENDING IT EVEN FURTHER

So we have man who knows, *Homo sapiens*, and man who makes, *Homo faber*, but I want to go one step further. I want to extend this blended epistemology and argue that in this Exponential Age *Homo ludens*, man who plays, is critically important. Play lies at the root of how we unlearn as opposed to just

learn. We're moving into an era where unlearning is becoming as important as learning. We originally learned through play and I think we underestimate how much being playful lies at the heart of understanding how to build a new mindset, how to go through a paradigm shift, and so on. However, only certain types of play are truly effective. Effective play allows us to probe the boundaries, push things, and see how they respond back. Through play we also become good at inventing moves and navigating within the space of rules.

Extending the blend still further



The ability to play is a component of learning we haven't thought enough about. I mean we play with mechanical things in the process of getting a feel for how something really works. There's something happening there that's becoming more critically important in this world of increasing fluidity. But how do we actually push the rules and push the boundaries? I come out of the world of surfing — I mean real surfing, not web surfing — where everything is pushing boundaries. Navigating a wave requires being attuned to multiple shifting factors and finding the perfect opportunity to stand against the odds. Likewise in *World of Warcraft*, let me tell you, you're not a high-performer if you haven't learned how to probe the boundaries of that system continually, day in and day out. There's a certain sense of looking for the play in the system that I'm trying to capture here.

Building on the notion of play, we have to now think about a networked imagination; how kids are both in the physical space and connected to broader

ecosystems. Take, for example, a serious player of *World of Warcraft*. They can play with their team around the world. It is astounding to see in the heart of deep play the imagined world that connects these kids together. It is as deep as being face-to-face.

A similar situation arises within the Harry Potter Alliance, a non-profit organization run primarily by Harry Potter fans. The Alliance builds on the fan communities of Harry Potter to create a civic imagination and engage in major global social action. Originally founded to draw attention to human rights violations in Sudan, they have taken the ability to write and create in the fan world behind Harry Potter to create major social movements not only in Africa, but also around the world.

Harry Potter Alliance and the civic imagination.



Harry Potter Alliance and the civic imagination.



Are we prepared for students used to creating their own global collective, intertwined with a networked imagination?
Henry Jenkins

using transmedia

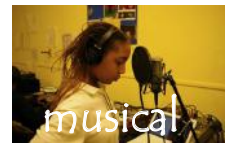
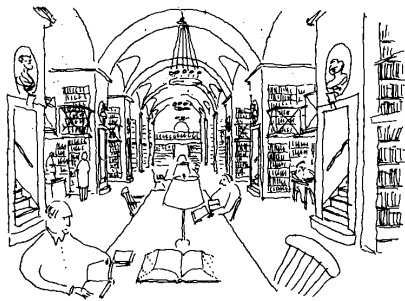
Something new is beginning to emerge here. Things are going on behind the scenes of everyday life. In fact, I'll quote Henry Jenkins here in saying, "Are we prepared for students used to creating their own global collective intertwined with a networked imagination?" Some of you are already sensing this in your libraries.

So how do you wrap up this extended epistemology that plays off of, to make a bad pun, imagination and curiosity? I think what lies at the heart of this triangle of *Homo sapiens*, *Homo faber* and *Homo ludens* is imagination, curiosity, and critically, a sense of agency. Today kids want to imagine, but they also want to have some effect on the world. Agency is becoming increasingly important as people come into learning systems and libraries alike.

CHALLENGES

How do we address these challenges and opportunities? We have to expand the notion of literacy. Everyone in this room knows this. How do we move from the traditional notion of literacy to understanding the visual, musical and procedural notions of the term? This is very critical. To better understand it I often turn to the Maker Movement and the cinematic field — two areas that I'm increasingly impressed with. Underlying both is an extended notion of literacy that we should pay attention to.

Expanding the notions of literacy



as well as stakeholders' mindsets

While it is challenging enough to expand our own notions of literacy, it is just as critical to help our stakeholders understand the importance of this as well. It's all too easy for our stakeholders to be fixated on the traditional epistemology when our real challenges may well lay in extending literacy into the visual, musical, procedural and cinematic realms. How do we shift mindsets and create that kind of understanding?

It's also the case that time is working against us in many ways in this Exponential Age. Yesterday's cutting edge is today's dustbin. What I mean by that is a lot of the super-cool technology we put in place today, two years from now we should put in the dustbin. Now here's the problem. How do you, if you're running a major institution, justify the CapEx and operating expenses behind that? Foundations, I might argue, are very good at giving you a single

grant. That gets you going really well. It whets your appetite. But basically that has to be renewed two years later. How do you really do that? Most of our institutions, and almost all the corporations I've worked in, are unprepared to understand the three-year amortization path of digital technology rather than a sixteen-year one. There is something important here. This kind of rapid change also affects how we address staffing challenges. How do we get people to buy into these changes? How do we design the renewal campaign as well as the initial setting and so on? So these are some of the darker challenges that lie behind adapting to the Exponential Age.

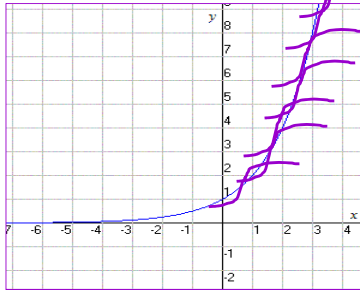
Yesterday's cutting edge is today's dust bin

Both a cap ex and op ex funding challenge

Staffing challenge

Design renewal challenge

Yesterday's buy-in might not grok today's new needs



rapid set of punctuated jumps (nearly every 18 months)

An approach:

Create a vision that transforms the pace and power of the exponential edge into an adventure and an evolving tool set.
(don't forget reverse mentorship/partnership)

Yet, possibly our greatest issue is in our current relationship with change. To be successful requires people, especially those from older generations, to be comfortable with the pace of change in the Exponential Age. Many fear change because it means unlearning and destroying what they have already mastered. This mindset has a lot to do with how we currently run our workplaces. Everything is run by performance pressure and so we

don't see the workplace as a chance to learn something new. What we're introducing here is a different disposition. How do we create a vision that truly transforms the pace and power of exponential technologies into an adventure and an ever-evolving toolset? How do we bring people together around such a vision? Adventure is both a mindset and a property of the context. Since things will be evolving more rapidly, we need to architect places in which learning something new is viewed as adventurous and fun. That's the spirit we're trying to get at here, and – don't forget – reverse mentorship is a key part of that.



Fine, jsb but get real!

How do we change our institutions or the entire context of how we get perceived?

LEVERAGING THE EDGE

You might say, “That’s fine and all, but how do we change our institutions or the entire context of how we get perceived? How do we do all this stuff?” My general mantra is, “How do you leverage the edge?” How do you create so much excitement on the edge that the core is naturally pulled to the edge? I will point out that in the corporate world today it’s amazing what can be done on the edge by never asking permission. That is to say it can pay off by simply grabbing major resources, trying to get something going rapidly, then showing what was done and asking for forgiveness in the end.

Today, don't go for perfect. Just get something going as more of a spiral; start at a point and expand a sphere of exploration from there. Start with something minimally viable and pull in different things as you go, dismissing what you don't need along the way. Think about what metrics

illustrate progress for both yourself and your sponsor in a way that also let's you demonstrate what you have learned. This is the mantra of lean startups as well. We ought to think seriously about that and how easy it is to start leveraging outside resources immediately.

Another thing to explore is how to start thinking about the library as a platform instead of a product. We are playing the platform game today — in the Exponential Age products cannot adapt as quickly as platforms. Think about the iPhone. The App Store platform is downloading changes to your applications all the time. Even the App Store itself is sitting on a platform, the operating system, which is updated frequently. Juxtapose this to the old days when software came to us on a disk and we had to ask for a new one. The product was an object. The Exponential Age has allowed products to rapidly evolve and become platforms, updated continuously instead of needing to be replaced. But how do you shift from product to platform? There are a lot of interesting possibilities.

In my own work I constantly come back to how to create a network of partners in an ecosystem. A simple example from Chicago is the Summer of Learning, a citywide effort to engage young people in hands-on education. Mayor Rahm Emanuel partnered with Connie Yowell, director of education for US programs at the MacArthur Foundation, and the Chicago public library downtown to engage local kids in science, technology, engineering, art, and math (STEAM) using the resources of public institutions of the city. Through this connected learning approach, kids could explore, play and learn with different organizations throughout Chicago and earn badges to unlock new challenges along the way. It was active work to build multiple levels of partnerships, from individuals to library patrons, from foundations to the city government and beyond. In this particular case, it is also very interesting to look at the role that Lady Gaga played in helping to launch a social media campaign for the Summer of Learning. Now it has spread to about twelve different cities around the United States. This raises the question of how do we leverage social media to help drive our point? These are brand new tools with surprising ability to get some very highfalutin people, pardon me Lady Gaga, to really take a very active role in how to get today's kids to better understand what opportunities are available.

Some ideas

Leverage the edge & let it pull the core to you

- Show what you can do by spiral development
- Keep metrics for YOU and others. (see Lean Startup)
- Show rapid learning
- Leverage being open source and open
- Engage wide collection of beta- participants - esp skeptics
- Exploit cloud computing & social media

Think Platform -- Library as platform

Think of network of partners as an ecosystem



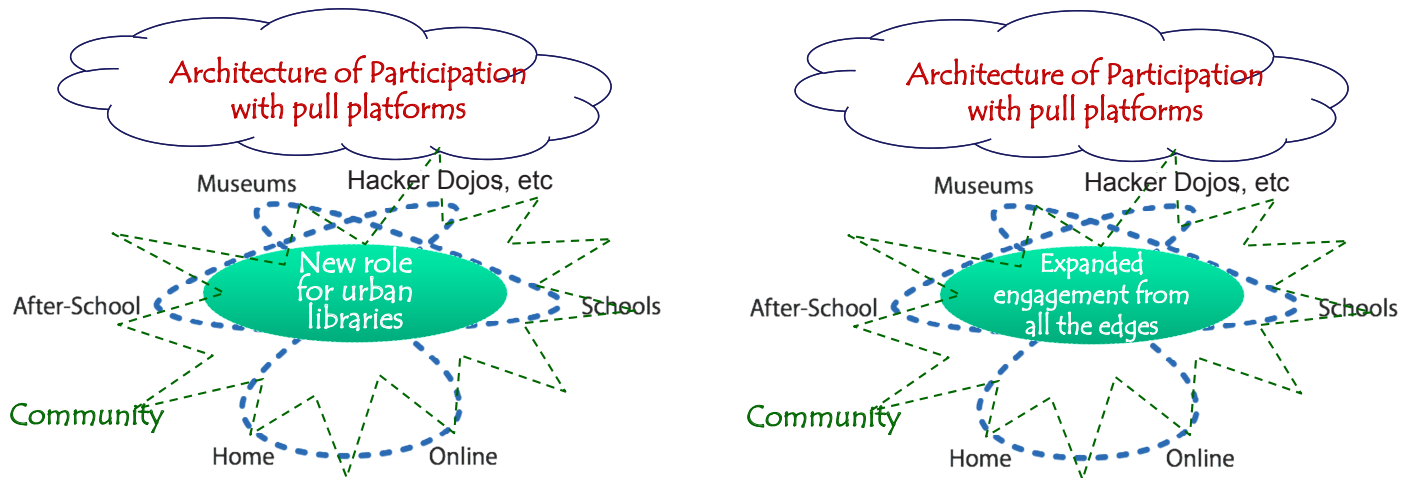
Partners at many levels
and in multiple cities
including Lady Gaga &
a social media campaign



So, the real challenge is how do we architect platforms of participation? I'm going to call them "pull platforms." If we look closely, we're now embedded in a complex ecosystem: museums, schools, home, after school, community sources, libraries of the classical form and so on. How do we take that broader ecosystem and look at the edge of each of those components and build infrastructure that starts to pull the center to the edge?

In the past, everyone believed that to change an institution you needed to change its core. The perspective was change must come from CEOs or chief librarians. When I was at Xerox PARC, we were the edge. At first we would try to push new ideas to the core, what we called Xerox proper. However, they would activate their immune system and neutralize this idea with great tenacity. Pushing the innovation was rejected by the core, so we switched to pull. We made things so exciting on the edge that the core came to us. Given that we now have exponential tools, driven by cloud computing, fantastic information visualizations, data analytics tools, 3D printers and so on, we can build products and services that make the edge the most exciting place in the world to be.

So, it's an edge, or an edge at play. Think about what you can actually do with that. What we're really after is how to expand the engagement from all these edges around the notion of a community platform and under a vision for the future of the community library.



My guess is that in ten years we're going to downplay schools and up-play libraries. So much more is going to happen in learning by doing and the library is better positioned than the school to take advantage of this. People can learn an incredible amount from their surroundings. I was fortunate to be able to transform many of the things in my small town into an incredibly important ecosystem for my own learning; I learned by tinkering with radios, lawnmowers, transmitters (ham radio) and finding some mentors. Cities are becoming increasingly exciting places that can be networked together, setting the stage for a learning ecosystem. Learning participation is key and with the right mentors, mindset, resources and scaffolding, the library becomes a way to orchestrate these things.

Over time we may well see that the center of education in this new philosophy of participatory learning is going to be orchestrated by community libraries. Just when you think Google and other technology companies are putting libraries out of business, in the 21st century libraries will be more important than ever. So with that, thank you.