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Library As Platform
David Weinberger

What happens when we think of the Olin Library as a platform? In what ways are we currently one, in what ways could we more of one?

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What if we had an API at the Center of OLIN? What could we do with it?

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Library as Platform

By David Weinberger on 📅 September 4, 2012

In May, 2007, Facebook was generating over 40 billion page views a month by providing its users with carefully constructed and controlled services. Yet on May 24, 2007 Mark Zuckerberg took the company in a new direction: developers outside of the company would be given access to many of the services and data at the heart of the work done by Facebook's own development team. These external developers would be empowered to build whatever independent applications they wanted. The result was an outburst of creativity resulting in thousands and then hundreds of thousands of non-Facebook applications that expanded Facebook's services and integrated it into other sites — each app potentially making Facebook more valuable to its users.

Facebook is in many ways an anti-model for libraries, but from this one action libraries can learn much. On May 24, 2007, Facebook became a platform: a set of resources — services, data, tools — that enable independent developers to create applications. Interesting possibilities open up if we think of libraries as platforms…open platforms.

A library platform would be about developing knowledge and community, not primarily for developing software. Still, like an open software platform, it would:

⊳ Be open to all
⊳ Give access to every scrap of information it has, including its digital content, but also metadata about that content, its usage, and the social interactions around it
⊳ Enable new products and services to be built by anyone with an idea
⊳ Integrate everything the library knows into the entire Net ecosystem

Unlike a typical software platform:

⊳ The library platform would primarily serve a community bounded by geography, although in some cases by interest.
⊳ The library platform would be visible to end-users, unlike software platforms that more typically are directly visible only to developers.

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One aim of this switch is to think of a library not as a portal we go through on occasion, but as infrastructure that is as ubiquitous and persistent as the streets and sidewalks of a town, or the classrooms and yards of a university. Think of the library as co-extensive with the geographic area it serves, like a canopy, or as we say these days, like a cloud.

But there's another, and I think more important, reason to think about libraries as platforms: it focuses our attention away from the provisioning of resources to the foment those resources engender. A library as platform would give rise to messy, rich networks of people and ideas, continuously sparked and maintained by the library's resources. A library as platform is more how than where, more hyperlinks than container, more hubbub than hub.

There's a third reason to think of libraries as platforms. Facebook chose to become a platform because doing so increased its value. As a platform, a library will serve its users better, serve more users, better accomplish its cultural and educational missions, and build a bulwark of value against looming cutbacks. Further, and crucially, a library platform can *continuously increase its value by providing access to that which is built on it*.

But, what would it mean for a library to become a platform? This is not just a Gestalt switch or a marketing trick. It requires real work and investment. So, what would change? After all, physical libraries already offer services, data, and tools, just as software platforms do. The data are the books, magazines, DVDs, etc. The tools include electronic catalogs for finding works, and step ladders for reaching the high shelves. The services include the expertise of reference librarians, and the work done behind the scenes by, for example, the collection development team and the cataloguers. On top of this "platform" are built itineraries for family trips, genealogies, homework assignments, and happy summer afternoons reading Elmore Leonard.

But two pieces are missing from traditional libraries that keep them from actually counting as platforms. First, a platform should provide access to everything it can, including some treasures traditional have yet to make available. Second, the library as platform will enable social knowledge networks to emerge and flourish. With these two changes, libraries can change from portals to platforms.

ACCESS TO EVERYTHING EVERYWHERE

So, what isn't a physical library giving access to? Very little of what it currently can. After all, libraries are not in the business of holding things back. Increase the funding of your library (please!) and it will provide access to even more.

Matters change when we include the library's online presence. Indeed, one of the advantages of thinking of libraries as platforms is that we don't have to start with the distinction between the physical and the virtual. Rather, we start from the idea of the platform, and we see which data, tools, and services should be provided online, and which offline. The question of whether they are best provided through a physical or virtual presence is a secondary consideration. Platform first.

A library platform will give access not only to all of the content it has access to directly and indirectly — the items on its shelves, the e-items it has permission to provide, and the items (physical and virtual) within its network of collaborating institutions — but also to all the data it can find: Data from a curated set of reliable institutions, including scientific and non-profit. Data from the local government, and from all levels of government. Content contributed by local members, such as digitized shoeboxes of local scenes. Some of this data may be available elsewhere, but the library can provide the service of making this data more usable by aggregating it (or pointers to it), certifying it as reliable and interesting, cataloging it, documenting it, and helping users to navigate it and understand it.

But access in a world that includes digital content also means providing services to get more value from that content. So, what services should the library platform offer? That sounds like a reasonable question, but a platform gains value the less can be predicted about what will be built with it; when Facebook released its platform, it must have been delighted when it saw the crazy stuff developers built. Nevertheless, the services the platform provides will inevitably be driven by some well-grounded assumptions about the nature of its available data and of its likely uses. A library platform is likely to provide at least initially some of the following access services:

> ▹ An online public access catalog (OPAC) for end-user search and navigation.
> ▹ Various ways of communicating with librarians and users by posting questions,

chatting online, phoning, going to the physical library's "genius bar," etc.

- The ability of a computer program to pose a query through an open, well-documented Application Programming Interface (API) to find items based on subject classification, standard metadata (subject, author, year, etc.), popularity or other usage indicators, etc. This will spur the development of innovative applications.
- Clustering of works by semantic relationships, by recommendations ("people who like this…"), etc.

The data library platforms offer should also include lots of nontraditional data. The aim, after all, is to make openly available everything that libraries know, and libraries know a lot more than the combined content of the items in their collection. They know what librarians know. They know what cataloguers know. They know what their users know. And they know a huge amount about the social life of their works (to borrow a phrase from John Seely Brown and Paul Duguid). For example, by looking at usage data, libraries can see patterns of connection and value: this book is related to that article, and this set of works seems to have helped people asking this sort of question. This usage data is a deep resource, both within a community and across divergent populations.

But, if a library platform is going to provide the full measure of its value, it is going to have to weigh the value of this resource against the relative value of its users' privacy. This is a discussion libraries need to have with their users, especially since increasingly many of the users don't care all that much about the privacy their libraries are protecting; thinking of libraries as platforms can help to frame the discussion by making apparent some of the benefits against which the risks should be weighed.

Providing access to a platform that does not primarily divide itself into analog and digital partitions means providing access to humans who want to read or view something, to humans who want to build something, and to programs that want to do computerish things with the data. That means the services provided by library platforms should include new generations of OPACs, "library test kitchen" environments (as per Jeff Goldenson and Jeffrey Schnapp) that provide end-user tools for exploring data and content, and open APIs so that developers can take maximum advantage of the library's riches.

Finally, since the aim of this is to increase the value of libraries, it goes without saying (well, apparently not quite) that this platform should be open to as many people and to as many works as possible.

DEVELOPING KNOWLEDGE

Facebook became a platform so that every app written on top of it would add value to Facebook. Likewise, the Android platform enables apps to be written that make Android more competitive, and Microsoft's .NET platform makes it easier for developers to write apps that make the Microsoft operating system more valuable. The more apps, the more people use the platform, making it more attractive to developers to write apps for it. The more open apps, the more code developers can draw upon, making it easier to create the next app. The more developers, the bigger the community, the more support the community can give to more developers. You can call it a virtuous circle … or lock-in, depending on how you feel about the group that has built the platform.

Libraries as platforms will accrete value for the entire community, not just for developers. Or, we could say the same thing by expanding our concept of developers to include every user of the library who creates something based on research or even who is changed by her or his interaction with the library. Consider the range of development work a library platform enables:

A very small percentage of users will be software developers who do amazing things with the library platform's APIs. Many of the apps developed will lead users back to the library, but some may lead users away. Imagine, for example, an app that analyzes the anonymized usage data from a town library to provide recommendations for open courseware; users of the app are taken to college sites and may not even know that some of the data that led them there came from their library.

A much larger percentage will be non-technical users spending time in the library test kitchen (online, or in a "Maker" space in the physical building, as in the Westport and Fayette Libraries) pulling together civic data, creating their own special collections from existing library content (including from library platforms around the world), scanning in works and images of interest to the community, creating personalized versions of online works, etc.

Some small but important percentage will use their local library platform as a way to publish their own works, from novels to memoirs to photo albums.

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A high percentage will — one hopes — use the platform to engage with works in public and with other members of the community. For example, they might leave ratings and reviews, comment on other reviews, collaboratively iterate on assessments of works' significance, tag items, correct errant metadata, publish lists of items, draw connections among works, make public their highlightings and annotations of e-books, check in books they love by placing them in an "[Awesome Box](#)," etc.

A very high percentage of users will find value in talking with others about what they've read, heard, viewed, or interacted with. These may be undirected conversations, they may take a question-and-answer format, or they may have the urgency of a group of students facing an assignment's deadline. Those conversations have value not only to the participants but to future users.

Those last two tiers of users are especially important because they can so dramatically increase "what libraries know." It therefore makes sense for the library platform to include services that will encourage the development of this collaborative engagement, such as:

> ▹ Social tools that let users find and engage with one another.
>
> ▹ The metadata required to let items serve as [social objects](#) around which social interactions occur. The items need not be limited to books and DVDs. Rather, the platform might enable users to "follow" (i.e., subscribe to, in Twitter's sense) works, authors, other users, topics, Library of Congress or Dewey subject headings, library events, etc.
>
> ▹ Facilities for preserving and making public the interactions among people and items (of course respecting privacy as requested), as well any new items they create; for example, New York Public Library added to its collection a book created as part of an [on-site game](#) it sponsored.

Services like these will encourage the development of what can be though of as knowledge networks. These networks may be evanescent or long lasting — a casual interchange on a discussion board or a book club (physical or virtual) that lasts for decades; they may be serious or frivolous; they may include librarians and other experts or not; they may be open to the world or pull the blinds. They may be social networks among users, semantic networks among items, or, more often, both. But enabling these knowledge networks is one of the best reasons to think of libraries as platforms. They are a resource fundamentally important to communities that libraries can fully enable.

The importance of these networks highlight a distinctive feature of library platforms: They usually will do best if they are designed to serve a defined community. In many instances, those communities will be defined geographically, whether it's a town's local library or a university community; in some instances, the community will be defined by interest, not by geography. In either case, serving a defined community has two advantages. First, it enables libraries to accomplish the mission they've been funded to accomplish. Second, user networks depend upon and assume local knowledge, interests, and norms. While a local library platform should interoperate with the rest of the world's library platforms, it may do best if it is distinctively local. Universities generally provide a community most tightly bound by interests and norms, and thus library platforms may find a first home there.

Just as each project created by a developer makes it easier for the next developer to create the next app, each interaction by users ought to make the library platform a little smarter, a little wiser, a little more tuned to its users interests. Further, the visible presence of neighbors and the availability of their work will not only make the library an ever more essential piece of the locality's infrastructure, it can make the local community itself more coherent and humane.

Conceiving of the library as a platform not only opens a range of new services and provides for a continuous increase in the library's value, it also does something libraries urgently need to do: it changes the criteria of success. A library platform should be measured less on the circulation of its works than in the circulation of the ideas and passions these works spark — from how many works are checked out to the community's engagement with its own grappling with those works. This is not only a metric that libraries-as-platforms can excel at, it is in fact a measure of what has always been the truest value of libraries.

In that sense, by becoming a platform the library can better fulfill the abiding mission it set itself: to be a civic institution essential to democracy.
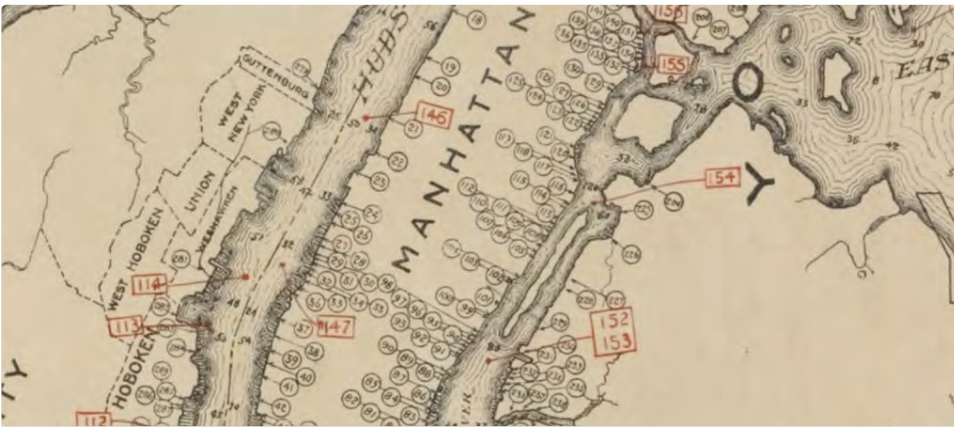
The API at the center of the museum

6 Replies

Extract from "Outline map of New York Harbor & vicinity : showing main tidal flow, sewer outlets, shellfish beds & analysis points.", New York Bay Pollution Commission, 1905. From New York Public Library.

Beneath our cities lies vast, labyrinthine sewer systems. These have been key infrastructures allowing our cities to grow larger, grow more densely, and stay healthy. Yet, save for passing interests in Urban Exploration (UrbEx), we barely think of them as 'beautifully designed systems'. In their time, the original sewer systems were critical long term projects that greatly bettered cities and the societies they supported.

In some ways what the Labs has been working on over the past few years has been a similar infrastructure and engineering project which will hopefully be transformative and enabling for our institution as a whole. As SFMOMA's recent post, which included an interview with Labs' Head of Engineering, Aaron Cope, makes clear, our API and the collection site that it is built upon, is a carrier for a new type of institutional philosophy.

Underneath all our new shiny digital experiences – the Pen, the Immersion Room, and other digital experiences – as well as the refreshed 'services layer' of ticketing, Pen checkouts, and object label management, lies our API. There's no readymade headline or Webby award awaiting a beautifully designed API – and probably there shouldn't be. These things should just work and provide the benefit to their hosts that they promised.

So why would a museum burden itself with making an API to underpin all its interactive experiences – not just online but in-gallery too?

Its about sustainability. Sustainability of content, sustainability of the experiences themselves, and also, importantly, a sustainability of 'process'. A new process whereby ideas can be tested and prototyped as 'actual things' written in code. In short, as Larry Wall said its about making "easy things easy and hard things possible".

The overhead it creates in the short term is more than made up for in future savings. Where it might be prudent to take short cuts and create a separate database here, a black box content library there, the fallout would be unchanging future experiences unable to be expanded upon, or, critically, rebuilt and redesigned by internal staff.

Back at my former museum, then Powerhouse web manager Luke Dearnley, wrote an important paper on the reasons to make your API central to your museum back in 2011. There the API was used internally to do everything relating to the collection online but it only had minor impact on the exhibition floor. Now at Cooper Hewitt the API and exhibition galleries are tightly intertwined. As a result there's a definite 'API tax' that is being imposed on our exhibition media partners – Local Projects and Tellart especially – but we believe it is worth it.

So here's a very high level view of 'the stack' drawn by Labs' Media Technologist, Katie.
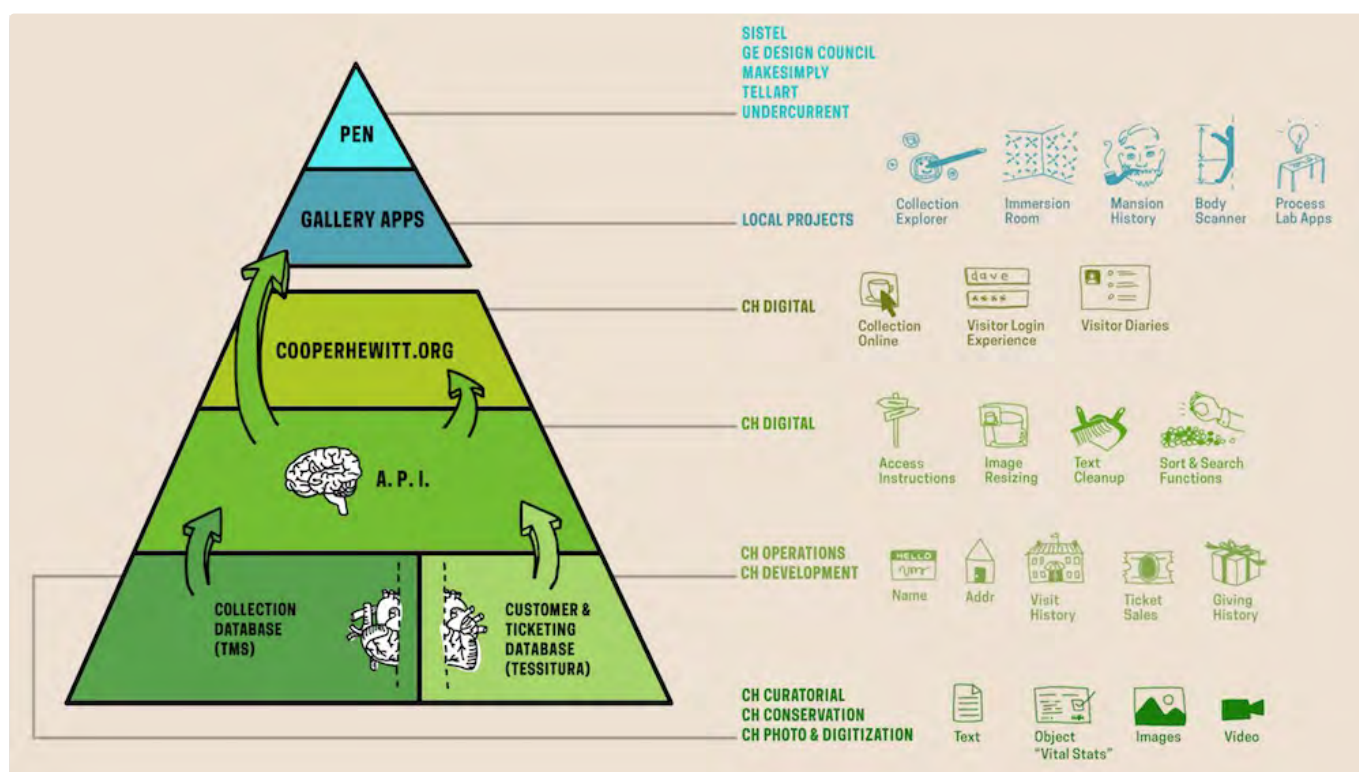
Click to enlarge

At the bottom of the pyramid are the two 'sources of truth'. Firstly, the collection management system into which is fed curatorial knowledge, provenance research, object labels and interpretation, public locations of objects in the galleries, and all the digitised media associated with objects, donors and people associated with the collection. There's also now the other fundamental element – visitor data. Stored securely, Tessitura operates as a ticketing system for the museum and in the case of the API operates as an identity-provider where needed to allow for personalisation.

The next layer up is the API which operates as a transport between the web and both the collection and Tessitura. It also enables a set of other functions – data cleanup and programmatic enhancement.

Most regular readers have already seen the API – apart from TMS, the Collection Management System, it is the oldest piece of the pyramid. It went live shortly after the first iteration of the new collections website in 2012. But since then it has been growing with new methods added regularly. It now contains not only methods for collection access but also user authentication and account structures, and anonymised event logs. The latter of these opens up all manner of data visualization opportunities for artists and researchers down the track.

In the web layer there is the public website but also for internal museum users there are small web applications. These are built upon the API to assist with object label generation, metadata enhancement, and reporting, and there's even an aptly-named 'holodeck' for simulating all manner of Pen behaviours in the galleries.

Above this are the two public-facing gallery layers. The application and interfaces designed and built on top of the API by Local Projects, the Pen's ecosystem of hardware registration devices designed by Tellart, and then the Pen itself which operates as a simple user

interface in its own right.

What is exciting is that all the API functionality that has been exposed to Local Projects and Tellart to build our visitor experience can also progressively be opened up to others to build upon.

Late last year students in the Interaction Design class at NYU's ITP program spent their semester building a range of weird and wonderful applications, games and websites on top of the basic API. That same class (and the interested public in general) will have access to far more powerful functionality and features once Cooper Hewitt opens in December.

The API is here for you to use.

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This entry was posted in CH 3.0 and tagged Larry Wall on November 7, 2014 by Seb Chan.

About Seb Chan

Seb Chan was the inaugural Director of Digital & Emerging Media (2011-2015) and the founder of the Labs. He likes imaginary creatures and overly sweet beverages. You may already have met him and you can find him on the other side of the world at Fresh & New.

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