

Discovery and Mental Models

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The concept of a discovery service should simplify the library in virtual spaces. This simplification isn't intended to convey that discovery services are always easier or better — sometimes yes, sometimes no. But what it does do is provide libraries an *opportunity* to align content, collections, and services into a reasonably consistent mental model for users. The first layer of this consistency is increasingly manifest as a search box.¹

Users already possess and use in everyday life a multitude of mental models for a variety of tasks (shopping, ordering food, pumping gas, etc.) Let us be clear, this idea of a mental model isn't just about searching the library. Nor am I going to proffer that a discovery service or a discovery layer is perfect in all cases. But what such a model *does* provide is a relatively logical starting point for “the library” as a mental model and what to expect in many cases regardless of where or how they encounter “the library” and its collections and services. That encounter could take place at the library Website, a search widget embedded in some other space such as a university portal or social media platform, within a learning management system, perhaps a browser plugin, stand-alone mobile app, etc. To the extent that functionality can be effectively inserted into *other* spaces, the library will need to be mindful of how it positions collections and services *within* the results of that initial search environment and not just prior it.

Let us explore a brief shopping example. How difficult would it be to buy groceries or navigate a “big box” merchandise store if each and every time you visited a different store you have to determine the general layout of the store? With each visit you have to determine where various sections are located in either absolute terms and/or if sections are logically related relative to each other. While not the Twilight Zone, this unique shopping experience each time you entered a different but similar kind of store would become rather laborious, tedious, and time consuming.

There is a rationale behind the layout and collocation of merchandise in like types of retail establishments as the experience is strikingly *similar* from store to store, experience to experience, and location to location. By following a similar approach to location and layout, if not look and feel, it significantly reduces the amount of mental energy it takes to find the *general area or service*, which you are trying to locate — even if you don't know exactly what you were trying to find.

If you enter the “front” of a general merchandise store (think **Target**, **Wal-Mart**, **K-Mart**, etc.), it's typically arranged left to right: hard goods (sporting goods, tools, light bulbs, TV's, etc.), soft goods (clothing, towels, seasonal attire, shoes, etc.), and groceries; and if it's not that, then it's probably reversed but still with retail food and the pharmacy “in or

near the front” of the main entrance of the store. If you enter from some other point (e.g., garden, automotive, or seasonal), the store might seem “backwards” or perhaps inverted but the *relative positioning* of these various categories is generally the same once you have oriented yourself to your in-store surroundings. In stores that seem unfamiliar or confusing, the layout probably doesn't follow the mental model that most of us have learned through experience to facilitate navigation in these kinds of spaces.

The point is that regardless of *exactly* how the store is arranged, you can get a general sense of where you are because previous experience drives the idea that “bed and bath” (soft goods) is probably going to be close to “kitchen” (also soft-ish goods) and both will be relatively far from “automotive” or “sporting goods” (both hard goods). Items like paint or plastics (hangers, containers) are typically “on the edge” of a section because they're not strictly hard or soft goods, but somewhere in between the two (like gray literature). Or these items on the edge work in conjunction *with* a hard or soft good, so you'll have to look a bit harder for them.

And this relates to libraries how? It relates to the rise of the search box as the primary point of entry to library content and services.² It's an opportunity to position or embed collections or services in a relatively consistent position to some environment that will include search results, associated services, and perhaps to suggested resources or possible paths to more useful results.

The idea of a “search box” can be manifest in a number of *similar* ways: single box, tabbed search boxes for differing content or resource types, drop downs on the right or left with various choices or a self-completing / suggest type of search functionality (think **Amazon**, **Google**). The number of possible search box permutations is nearly endless but the *idea* of the search box as a consistent and known entry point to the library remains regardless of exactly how it's implemented. The model would suggest that in an information space there is an *expectation* that there *should be* a central mechanism for searching for informational items. These items might be known or unknown but the model should suggest that they could be searched for with some array of specific helpful services arranged in near proximity. The discovery search box allows for a transformation similar to **Amazon**. The discovery service allows a transformation from just searching for a singular type of item (books) to a more encompassing search of all

of the information items that the library holds (articles, audio, books, documents, reports, video, etc.).

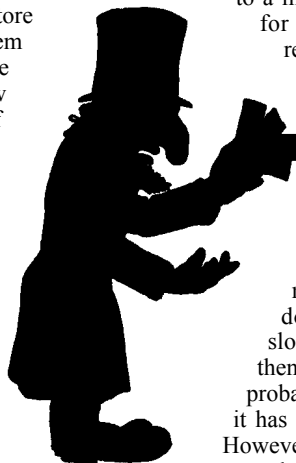
So how do we get from where libraries are now (generally dissimilar in the virtual space) to a modestly similar virtual presence for the like kinds of services and resources that encompass a mental mode of “the library?” Let us return to the shopping metaphor.

If you need a common item of some type (say a hair brush) and any general manifestation of it will do (round, rectangular, color doesn't matter, maybe a folding version, maybe not; any hair brush will do so long as I don't look like slovenly when I'm done using it) then a general merchandise store is probably fine — so much the better if it has a manageable range of options. However, if you're a power shopper and/or you have extensive knowledge of your topic (say fountain pens), and you have a very well-formed sense of what you're looking for (such as *Pelikan* brand, 1940s vintage, piston-filling mechanism, fine nib size, or a unique model design), then a boutique is more in order. One doesn't really expect to find any, let alone a *range* of fountain pens in the modern “big box” general store, but you would expect to find them at the pen store.

This boutique experience has a major presumption: You know that pen stores exist. By contrast, how many of our students or users know that there is a specific resource(s) in a given discipline that isn't their primary area of academic endeavor? If you know what you're looking for, either you're highly motivated or else a specific resource has been recommended in a way that resonates as being worth the effort to find it, engage with it, *and* overcome the fact there *may* be no payback for that effort. If you've done all this then you are seriously invested in your quest. Translation: I have to find a pen store, I have to start expending effort learning about pens to get the maximum utility out of that store (and know that the elusive model I seek is asking an awful lot since it may not even be available), and I have to then learn the idiosyncrasies of “pen vocabulary” and realize that I may have nothing actionable to show for my effort. This is not to say that this effort isn't worth undertaking, only that it's not the kind of effort that everyone will undertake as a routine matter without some serious motivation or focus.

If the search box becomes the common entry point to the library and its collections, then perhaps the task of getting users to some more specific resource is a function of the general experience and should *not* require any a priori knowledge of the resources and services of a

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specific library. For some brief context, keep in mind libraries don't even have a common naming convention in the virtual space; finding a library's virtual presence is frequently mediated behind a Web search service. Something as simple as library-dot-hostname-dot-domain (i.e., <http://library.institution.edu>) isn't universal by convention or practice within the library community to the probable detriment of our users.

What if the library model morphed from having to know about specific resources (akin to boutique shopping) that are usually arranged by silo (subject guide, course guide, lists) to a more general single silo model? Would that new library experience that moves from general (I want to know about electric cars) to specific (I want to know about battery technology) make building a more robust and understandable mental model of how the library works easier for our respective audiences?

Caveat: I still think there is a place for the historical precision, purpose, and performance

associated with traditional metrics be they in a research database or a query of registered owners of a faulty product. But again, the very precise search is typically the result of a very specific purpose that presumes a fair amount of prior knowledge of what information or resources exist to complete that task and some well-formed sense of what constitutes reasonable expectations for the results. I need a scholarly article vs. I need a scholarly article on fountain pen performance in near zero gravity using emerald colored ink. Any scholarly article will do for the former; there likely isn't an article for the latter.

What would a library be like if we had a common mental model built on a widely accessible and *similar* experience? What does a common mental model of a library mean if the mechanics of using and accessing all (or nearly all) of a library's collections and resources scaled from effective on the simple end to powerful precision on the advanced end? With means to seamlessly suggest or recommend specific items and resources that the library may or may not have? How is this model any different from the physical models of allowing self-service shopping for generalities vs. hav-

ing a sales person direct you to products that are in the store or recommending another store where what you seek resides?

It is time to seriously think about and explore opportunities for simplifying the mental model of the virtual library. Perhaps this effort can begin by exposing and leveraging access to collections, resources, services, and recommendations *after* a user has passed through an understandable search box model of the library regardless of how they have reached the library.

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Endnotes

1 & 2. Kasperek, S., Dorney, E., Williams, B., and O'Brien, M. (2011). A Use of Space: The Unintended Messages of Academic Library Web Sites. *Journal of Web Librarianship*, 5(3), 220-248.