Shaping Information Architectures for Service

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Abstract:

Access to information has been relatively easy in the analogue environment . However, it is much more difficult in the digital domain. Three of the main drivers are the volume of information which is now digitally available, the mass of knowledge locked within the analogue repositories and the absence of a client-understood construct for information access and delivery.

To unlock this situation will require a paradigmatic shift in the way we think about our client architectures. Current architectures construct an environment which is directed through institutions and user persistence. The new architectures require radical, not incremental, scenarios of service for clients and not institutions. They require the construction of environments which use partnerships and systems-wide negotiations to shape technology for the ease of information clients.

Introduction

This paper begins the process of establishing what the new paradigm for libraries will be in the new Millennium. It seems obvious that we have now abandoned, or grown too distant from the past service and collecting mode. This has seen libraries today in a strong state of flux. Libraries and the vendors which serve them are all grappling with the issues of where to invest, what to invest in and which advice to take in making these decisions. It is also abundantly clear that we have very little time and that we have rapid change in the midst of all this activity. This makes the task much more difficult. The voyage in this paper to achieve a new outlook takes a strong re-engineering approach.

Preliminaries

The development of information delivery as a service is only a comparatively recent phenomenon. It is true that libraries have been developing as collecting bodies for a much longer period, but they have not been heavily shaped by a service ethic. If the service ethic has been active it has only been in comparatively recent times. Libraries are as guilty as many other organisations in engaging in incrementalism. We have moved from one level of organisational pattern to the next without really abandoning the vestiges of the previous model. We have merely added on new features. This will no longer work for a number of reasons which will be expanded on in the course of the paper. While some surveys indicate that libraries are very popular, the widely accepted conception is that libraries are redundant and are no longer needed. This attitude is predominant in managerial levels where critical positioning and funding decisions are made or influenced. No matter whether we agree with this or not, it is still the dominant perception and as such is the reality against which we need to test all our actions. It is the very sharp contention of this paper that if we do not really understand our users then we will fail to address their need. Perception <u>is</u> the reality.

This paper will begin by addressing the elements of good design and then apply those principles to good information architecture.

A cautionary tale is a timely way to commence. Some colleagues suggest that we need not provide certain services in that some "entrepreneur" will come along shortly and establish the service. Document delivery is a good example. There are a few companies who have established excellent reputations in this area. They have however only been able to succeed by using established and expensively maintained collections. This approach works if the libraries explicitly state that the activity which the commercial vendor is providing is not their line of business. The difficulty here is that libraries will find it increasingly difficult to make that leap for their clients, individually or

collectively, into the electronic delivery by signing this type of business away. Without design, there will be no result. Derrick de Kerckhove wrote that " the future can and should be more a matter of choice than of destiny." What are we designing now for the future???

In discussing this topic the nature of the Construct needed in this new environment and the elements of the Information architecture will be detailed. Finally, the wider Australian Information environment will examined.

1.0 The Construct

The shape of the construct we will need to develop if information is to be delivered effectively into the future will need to assume that all information for the foreseeable future is stored and delivered in both analog and digital form. It is a basic tenet of this paper that information will be required from past collections and therefore will be needed from analog and digital collections. It is also assumed that information will not be predominantly available in digital form, but rather in a mix of formats.

The architecture has three aspects to it. Firstly, the environment in which it is set; secondly, the actual construct itself; and finally the user.

1.1 Environment

 If we are to work in this house we are designing we need to understand the land on which the foundations will be built: the slope of the land, the aspect toward the sun, the drainage and the nature of the soil. Another way to look at this is to say that we need to understand
the place of the profession in the early years of the new Millennium;
the capability of libraries to attract funding; the support of the users and profession to engage in rapid change;
and the political support we need and might have for the new construction.

1.2 The Construct

The second aspect of this construct is the shape and features of the building we are considering. Are they familiar or are they futuristic… long standing and classic or easily dated?   Has the house adequate power and other service outlets ? A further aspect of the construct is

the maintenance of the building. In many cases various contractor relationships are established to maintain various features or functions of the new building. These might include electrical , plumbing or gardening. The most important, and neglected, part of the information environment is the various agreements which need to underpin, sustain and even nourish the model. Without these service agreements the model will most assuredly fail.

1.3   The User

In considering this we are dealing with the specific user requirements. Houses are designed for users or inhabitants; similarly for the information system we are considering. The user must be at the centre, at the front, at the side, on the top, and at the back.

2.0 Elements of the Information Architecture

2.1   Institutional Responses to Remote Access

The issue of authentication is both widely misunderstood and narrowly responded to. It is misunderstood in that it is confused with Authorisation and Access Management. It is narrowly interpreted in that many are seeking the one-stop solution to the dilemma. Perhaps there will be a one-stop solution but until then many of a library's clients will be unable to access its electronic services and resources. This is equally true for both public and academic libraries. The predominant dilemma is that once we move away from password or IP solutions we should be looking at a two phase solution to authentication. The first phase is to address the issue of who we are. This can be done in a number of ways now but may move to digital certificates or a variety of other solutions. In the short-term, software solutions can use the Integrated Library System (ILS) as a database of qualified users. The difficulty here is that the level of separation is not great. By this I mean that most ILSs identify users as Adult, Undergraduate, Academic, Juvenile and so on. This can be limiting.

The second phase of authentication involves establishing a level of granularity for libraries to delineate for their users which services and resources they are entitled to take advantage of. This is the most critical phase as far as the User and the Library is concerned. The first phase has already established the bona-fides of each User and this phase will check against tables of privilege to filter the Users through finally and transparently to the library services or vendor products. In this way a library may decide that only Accountancy 100 students will be able to gain access to the electronic textbook set for that course.

This will be a critical strategy to use limited library funds more effectively.

There are no such dual approach authentication products available in the world at this point of time although some proposals are under consideration at CAVAL with external partners. It is critical to establish the role of the librarian as opposed to that of the Director of IT on this issue. Directors of IT quite rightly look to the all embracing solution but they are scarcely able to deal with the complexities of the second phase as discussed above. There will need to be a server functionality at the library level, to ensure that there is proper management of the library services and access to electronic products on vendor services. If this is not addressed then most users will be unable to utilise these new facilities effectively if at all.

2.2 Software Access

It is not intended to discuss here specific software packages but rather the level of functionality which is possible. This is essential in seeing where this information architecture may be heading.

At the moment, public and academic libraries have established reciprocal borrowing programs to enable their users to be able to use the resources of other libraries in a cooperative fashion. Typically this empowers a user in one library system to be validated as a 'borrower of good standing'. The User then takes this 'certificate' to the library he or she intends borrowing from as a means of introduction. Usually he or she is able to borrow immediately from that other library. This may or may not involve a fee of some sort. Additionally, this may or may not involve a recognition at the library level of an exchange of resource load from one library to another. Effectively, the User is using his or her feet to move between a group of libraries using their collections although they are not owned by the one system. We could create a level of software to facilitate this introduction using electronic means but this would not be moving the service dimension very far at all.

If one were to shift the paradigm from the User using their feet to the User using their fingers then a completely different paradigm would be created. In this new paradigm the User would be introduced to each of the libraries in the system (however defined). The User would be able to access the library physically but, more importantly, the User would be able to do a number of the following:

- To have electronic access to the catalogues of the library consortium to view the collection of books and serials as a 'virtual' collection.
- To be able to search all these catalogues, in real time, using Z39.50 standards and to have the results of this

search across any number of catalogues presented without duplication but with holding and availability status

- To be empowered to order material from another library, virtually as an inter-library loan
- To go to that library to collect the requested material, or if there was such an arrangement, to have the material delivered to their own library or even to their door physically or electronically
- To be able to access a range of electronic resources which some or all of the libraries have obtained a consortium arrangement with
- To be able to establish their own web page of favourite resources for future reference and to be able to return to this service page whenever they log on. This would be their own space.

There are a number of products which either deliver part or all of this vision now. These include:

- ISOS for IP-level authentication
- LIDDAS for unmediated searching and virtual catalogue searching
- PORTALS technology

2.3 Supporting Agreements

The establishment of the Access and Delivery environment described above can be readily aspired toward. It is either there or nearly there. A library, for instance, with a poor collection historically, could make a quantum leap by providing such a support environment for all its clientele, not only its elite group. They could, as a matter of policy, empower their users to be able to immediately have a very rich resource environment. The difficulty is how to sustain that environment. It is relatively easy to support the technical infrastructure of servers and software while managing the complexities of privilege tables for groups, for classes or even for individuals. The plain difficulty lies in the mutual effort from a group of libraries.

Firstly to agree to such empowerment. This is not insignificant. Library managers and staff will have to release their conceptual grasp of what a library service has been to plunge into the abyss of the unknown. They will have to allow users to create their own paths to information even to the extent of bypassing the physical library.

Secondly, to financially support such arrangements. This will inevitably mean the diversion of additional resources away from staff to facilitating arrangements. It may also mean that funds will be better

located in shared collaborative structures enabling as sharp a focus as possible on the primary mission of the library ..its users.

Thirdly, to have the service and collecting levels agreed upon. As I have mentioned before, libraries in this country have been very good at building and running access and delivery mechanisms but we have yet to confront service and collecting agreements. Rather in this latter area we have relied on the argument that our users drive these areas of service and collecting. That we are simply not able to continue to afford either the collecting or service should be a matter of enormous concern to all in this profession.

Finally, to have the political clout and will to put such a powerful environment in place. Librarians have always been very effective political operators in their own environments. The worst achievement has been convincing others that 'Libraries are free". They are patently anything but. It is not that we want to withdraw access from our users, but we clearly need to convince others of the real costs in our operations and in this process produce convincing solutions.

On the assumption that three of these four points have found collaborative solutions amongst the library leaders, it is worth spending a little time finally exploring the service agreements and collecting agreements necessary to make such an environment

Service agreements are necessary in any collaborative partnership if both parties are to understand their accountabilities. Service agreements might deal with guaranteed access to collections for the users of other library systems; it may involve guaranteed response times to unmediated requests for materials; it may mean engaging in standard practices designed to reduce operating overheads.

In collecting agreements we all encounter difficult territory. That we are collecting 25% less English language published material in this country than we were 20 years ago should be a matter of some concern, while there is now less than 50% of English language published material in our libraries. The percentage of other languages is even less flattering.

These statistics do not address the questions of what the desired level of collecting ought to be or what targets we ought to be achieving for various disciplines, which are important to the intellectual and research health of this country.

In all this it is crucial that we create sustainable solutions, and that we do acknowledge that we do have accountabilities as librarians to ensuring the best possible access to information resources in whatever form.

3.0 Australia's Need For Information

The Australian information community, for the most part, is not following the trend of their counterparts overseas in establishing effective consortia activities. To be fair, there have been promising starts but, overall, they have not been sustained or the libraries have been part of loose federations. Overall, the libraries have not benefited from the potential arrangements which could have been in place. Some of this is inevitable in that national agreements are difficult to sustain and the local environments have been too diverse or small to be effective. The joining of sectors should be a trend in Australia, even if the work within a sector is the most obvious way forward. The source of funding for the libraries poses additional problems. In this situation it is the user who suffers by being denied access to as many resources as possible. So it is here that we should start.

This paper has sought to highlight that very different service paradigms are now possible but that there are many difficulties to be confronted in addressing and achieving them. Much of the software is already here but the overall information architecture will require different strategies and behaviours from each of us if we are to be successful.