Changing Models of Scholarly Communications in Library Organizations: The Response of the University of Maryland Libraries

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In his book *Deep Change, Discovering the Leader Within*, Robert E. Quinn has provided a model for change that starts with the external forces that compel an organization to change or die a slow death; that compel the individuals within the organization to become part of such change themselves or cease to be effective; and that defines the transformational effect that this may have. For some time I have argued that convergent forces are causing what we may call "deep change" in almost every dimension of library organization and services. I hope in the next twenty or so minutes to sketch how we may act to avoid a "slow death."

I think it is obvious to us all that such change would not occur without significant changes in the context of academic libraries and post-secondary education. In my remarks, I hope to provide a synthesis—a sort of comprehensive view of the total context of the greater environment of academic libraries and the changes that we are seeing. To fully understand how your libraries interact with the disciplines and with IT in all its guises, one must understand the pressures they feel. Naturally I will use the University of Maryland as an example of the response to external forces, largely not in our control as we make the effort to shape our organization to the new realities of scholarly communication. I do not think we are terribly different from other research libraries in this response, but we are probably significantly different from other types of academic libraries. Having been a director in five quite different types and sizes of academic libraries in the United States—I would observe that the current challenges to libraries are the same for the University of Maryland and Elon College (my first such job) but the response to these challenges must be variable.

To use the terms of computing—the solution in a small principally baccalaureate institution is not scaleable or extensible for an academic research library. The reverse also must be true. I hope the reasons why will be obvious. A principal factor is that in the large research university today, there remains an expectation that the scholarly information needed to produce new knowledge and teach will be immediately available. Yes, we have convinced our faculty that this is unrealistic, but deep in their psyches they still expect it. When we cannot deliver, at some level it is our fault—not that of some ambiguous entity known as the scholarly publishing industry. But I want to suggest strongly that undue focus on this set of problems leaves out equally important ones.

Perhaps I should apologize in advance for subjecting you to an enumeration of the environmental factors that challenge academic libraries today even if I keep it brief—because you may find nothing I say on this score very surprising. On the other hand, I want to paint a complete picture of a conscious, overt, cohesive, articulated, clear response that we are making through our strategic planning and re-engineering efforts. I know everyone says this sort of thing, I hope we are "walking the talk" to use the cliché because at Maryland we really are "pulling ourselves up by the roots to see how we are growing." So what are the forces that we are scrambling to manage? I think there are two categories—not intended to be comprehensive, but evocative.

The first category is forces of change external to but closely allied with higher education:

- Among these, the best known is the "price revolution" in the cost of scholarly information—did you know that journals are inflating at a rate completely out of kilter with all other goods and services and that this has been going on for the entire time I have been a librarian (*ca* 25 years)?

- On the other hand, it is important to note that other types of scholarly information have exhibited price patterns similarly unrelated to measures of inflation. Book inflation has moderated in the '90's but this was not always the case. Of greater impact is the racing price increase we face in networked access to bibliographic and full text information. It represents a wholly new category of expenditures far different from the print abstracting and indexing costs of a few years ago and wholly more costly in terms of the technology base we must have to support online A&I. There is also a parallel pattern of what might be called technology creep in the mediation of A&I—starting some years ago with COM roll fiche, moving to PC/CD based systems thence to local loading of the data and now to networked WEB access. It is worth noting that historically we have observed this phenomenon in every type of library automation.

- Diversification in scholarly information—we are faced with enormous challenges created by the new forms of representation such as GIS, on-line government information, e-journals and that vast new territory of Internet resources. The latter are the "electronic ephemera" of our time. These are emerging as a core professional problem.

- We also are faced with the challenge of the digitization of our own collections, particularly unique special collections (an activity quite familiar to this audience). Digitization has been viewed as both preservation and content creation and has been stimulated by an infusion of government and foundation funding for DL experimentation, as well as a good bit of local investment. The motivation has been in part to provide support for teaching and research through electronic

mediation and also (I believe) the temptation of creating new income sources.

- Finally, within librarianship, I believe that the least discussed and most poorly understood outcome of the IT driven paradigm shift is what Shoshana Zuboff identified as the "informating process" in her seminal book *In the Age of the Smart Machine.* It is of great importance to consider this change that has a transformational effect inside libraries—to organization and to staff. What has changed is the life of workers in libraries. But there is an added dimension of complexity for us that is not present in the "knowledge-based" private sector. Peter Drucker pointed to this when he said that the very product we deal with—what might be called the knowledge format—is changing. One must assume that this level of abstraction and complexity in which the very tools of information technology also become the product distributed to library users will have profound effects. Ignorance of this sometimes invisible informating process leads to bad decisions, particularly about organization, planning and decision making.

This group of external forces shades over to the forces of change that arise within higher education on our own campuses. These are forces that have emerged over a long period of time and some are largely IT based.

- The first is the transformation of undergraduate education. If I reflect on and compare how my contemporaries and I were taught as undergraduates (from 1960-64) with today, I would have to say that the world has changed completely. A discourse on this subject would take all my time—but the change is tersely defined as a shift from passive to active learning and the expectation that we don't have time in the space of four years to impart a discipline, only to teach the analytical framework and the methods of gaining disciplinary information. This means reliance on libraries and student exploration of a discipline.

- Demands for distance education and asynchronous learning have emerged vigorously. Part of this is competition even among elite universities for the income generated by special markets. Our administrations are pressing faculty to provide these extended services. This leads in turn to pressure on libraries to provide and organize content—principally digital content from many different sources.

- Then there is the capability of WEB based resources which has put us all back in the business of developing local applications. I would observe that the WEB is in effect becoming our one-stop client for presentation of all library resources.

These forces are pressing on all academic libraries and I would suggest especially on research libraries. Responding to them effectively requires the marshalling of the full human resources around the same values, vision and especially mission. It requires the focus of an continuously implemented strategic planning process—one that ties the top level library plan to every individual staff member's goals and objectives. But more than

that—success demands leadership at all levels and teamwork. But let me turn from such generalizations to what I see as the common pragmatic institutional responses that many libraries are making to these challenges.

Among the strongest trends is the rebirth of state level consortia. Consortial alliances are an old strategy that in some measure had until the 90's become stable, even stagnant. In the United States we now see legislative mandates and fiscal support from state governments to insure that they are vigorously developed. Consortia are invariably seen as vehicles to leverage buying power and minimize IT development costs for database access. Equally, at their best they are viewed by state government and business leaders as a necessary concomitant to economic and educational development. The recent formation of the International Consortium of Library Consortia is a clear indicator of the force of this movement.

Maryland is typical and for that very reason worthy of examination. For over a decade the thirteen University System of Maryland Libraries have cooperated in a shared local system, which we are currently replacing, and in some database licensing mediated through that system. But the last two years have been dramatically different. We have created a WEB access environment using OCLC's SiteSearch software and we have negotiated hundreds of DB's with shared core holdings, reference resources and a research tier. This places new demands on us:

- Obviously, there is a large amount of time expended by library directors on governance—new time.

- We have organized inter-institutional collection management teams for DB selection. This presents a dichotomy between inter-institutional selection of electronic resources on the one hand and other locally managed collection building on the other. This in turn creates contention in resource allocation. We must find a way to mainstream the electronic resources.

The set of problems I am describing is about to become more chronic because of statewide planning. I am currently chairing the Maryland Digital Library Task Force mandated by the 1998 report of the "Governor's Commission on Technology in Higher Education" and commissioned to work by Secretary Florestano of MHEC. We have developed a proposal for a statewide licensing and access program for all public education from the community colleges to our doctoral granting institutions as well as private higher education. The compelling reason is the opportunity to institutionalize support for statewide access to DB's and to develop a statewide lending mechanism. Like GALILEO in Georgia or VIVA in Virginia, MdUSA and MdPAC will help leverage our collective investment in library collections and will bring us new resources. They will also bring us vexing though not intractable problems in consortial governance. We will have an opportunity later to discuss MDL more fully.

Let me turn now to some of the institutional strategies that the University of Maryland Libraries have used to manage this dramatic change internally. During the last eighteen months we have had an opportunity to re-engineer the public service side of our organization. In part this was the precipitated by the decision to transform undergraduate services by eliminating an undergraduate library and the adaptive re-use of the Hornbake facility for Special Collections. As we planned the merger of undergraduate services within the other six campus libraries, we were struck first by the inhibiting effects of the of the dichotomy between bibliographers in Collection Management and subject librarians in Public Services. Re-thinking this organization was difficult because we had to overcome structural and cultural barriers. In the end we created three subject teams within a matrix organization reporting to the Director for Collection Management and the Director for Public Services.

These teams operate in an integrated way, encompassing the functions of reference service, user education and collection management. However, they are not part of a reference department. I like to say we have reference without a reference department. We have instead established what we call Service Plus, but more on that later.

So the guiding principles, expectations, and responsibilities of the subject teams are:

- Participation in collection development and management of both print and electronic materials

- Participation in user education, both general and specialized

- Participation in Service Plus, aka reference (minimum eight hours/week for each team member) In effect, they are "detailed" to use the Federal Government term.

- Communication and liaison work with colleges, schools, departments, and programs

- Coordination and collaboration with other subject teams and team managers

- Development of operational plans to carry out the work of the teams, including team training and continuous learning and the ongoing evaluation of the team's performance

- Development of collections and services for undergraduates, graduate students, and faculty

- Priority setting, including workload distribution

- Service program evaluation and user needs assessment

It is fair to ask how teams differ from the traditional collaboration that we know exists within libraries. The answer is first that we are training them for team work:

- Our training in Meeting and Communication Skills is derived from the Xerox TQM program and provides a fundamental core to group-work that all staff experience;

- We have established an ongoing training resource through the Association of Research Libraries OLMS. Maureen Sullivan works almost every month in dedicated sessions with the subject teams. It is only a matter of time before we begin cascading the team experience to other Divisions like Technical Services and Special Collections.

- Each of the Teams must develop its own set of Goals and Objectives that relate cohesively to the Libraries Strategic Plan and each member of the team will have supporting G&O's.

- Finally, we have exploited the University of Maryland Continuous Quality Improvement program to train key individuals as facilitators for process re-engineering. We are just at the beginning of this effort. Thus far we have only re-engineered systems and must now get down to re-engineering basic processes. It is more commonly understood how we do this in Technical Services. However, the Subject Teams also must use these techniques—for instance with our Blackwell North American Approval Plan processing.

One of the core ideas of Zuboff is that informated organizations like libraries willy nilly expose most staff to all the information that had been previously monopolized by experts and managers in hierarchical organizations. It is plain to see that this is corrosive of the power that such monopoly provided. Furthermore, once that monopoly is broken, the natural evolution is to an organization characterized by participation in decision-making. The healthiest organizational response is to empower group decision-making and use the dispersed expertise of shared information. The better trained staff are to work in teams, the more likely we are to gain the benefits of their brainpower.

In abolishing the old structures of the Bibliographers Group and the Reference Departments—we had quite explicitly in mind that this organization built around library functions did not organize us symmetrically with the way the University organizes itself. We intended the three subject teams—Arts and Humanities, Social Sciences and Allied Professions and Science and Technology—to explicitly reflect and relate to the subject organization of the University around disciplinary clusters. One of the most desired outcomes of the teams is that they move away from a passive posture and maintain proactive, regular and ongoing liaison work with the academic colleges and schools for which they have assigned responsibility. In addition, teams will be expected to work together on broader service and collections issues. The Librarians have two slightly varied assignments. Within each team, job assignments have this common range of responsibilities but differ in relative emphasis between collection management

librarians (with a heavier responsibility for collection development and analysis) and reference/instruction librarians (with a heavier teaching and Service Plus Responsibility).

However, we were also concerned that the subject teams might work independently of one another and thus not effectively integrate the functions of reference service, user-education and collection management since they operate as separate entities. In order to overcome this potential flaw, we established three cross-team collaborative structures:

- The Committee on Library User Education (yes that's CLUE) headed by the Manager of User Education Services with membership from each of the three teams. Its charge—to guide the Libraries' user education program and advance the information literacy of our students and faculty through assessment, coordination, monitoring, innovative instruction and marketing.

- The Collection Management and Resource Allocation Committee headed by the Collection Management Coordinator and populated by the Team Managers and the Head of Acquisitions. CMRAC is responsible for developing policy and institutional processes, managing special projects and coordinating the work of the teams in support of collection management and resource allocation. One of its early assignments has been to create a formula allocation method for distributing large new fiscal resources coming to the Libraries based on the University wide analysis of achievement and excellence.

- The Electronic Resources Committee headed by the Manager of electronic Information Services. This committee is tightly bound to CMRAC whose members are also ERC members. The Head of Cataloging is also a member of the ERC due to the complex problems of representing e-holdings in the OPAC. We are uncertain of the future of this group—particularly whether it is necessary to keep it separate from CMRAC. At present this is dictated by the large amount of work in negotiating licenses for all USM Libraries and the concomitant work with our Information Technology Division and vendors to be sure that access is provided through our SiteSearch implementation.

I want to use one of three academic programs to illustrate what we believe the teams can accomplish that logically relates to our new structure. This year at the University of Maryland about 37% of our freshman class of 4000 is enrolled in one of three honors programs. These "living and learning" programs all place great demands on the Libraries, among other reasons because many of the students are housed in historic buildings surrounding the central library. Gemstone is a multi-disciplinary program involving University Honors students from most colleges. Gemstone program teams of undergraduates carry out multi-year research projects investigating technology-based solutions to some of the current major societal issues. These research opportunities,

coupled with core Gemstone coursework examining the implications of technology innovation, make Gemstone one of the most exciting and creative educational initiatives in the country. Gemstone brings together multidisciplinary teams of students in diverse majors from the hard sciences to the humanities. These teams, formed in the freshman year, undertake multi-year research projects examining issues of major societal importance. These student-initiated projects are guided by Mentors—(Gemstone Fellows) who are senior faculty members at the University of Maryland. Each of these teams has a librarian as member. And, they help us meet the challenge of integrating the development of collection resources, instruction in scholarly information retrieval and specialized subject reference.

A further and more recent example is our participation in planning for a new living and learning program sponsored by the College of Social and Behavioral Sciences. When it opened in Fall of 1999 Civicus included 60 incoming students and 60 returning students resident in Somerset Hall which is newly renovated and located behind McKeldin Library. This is a two-year program with a 15-18 credit course sequence for a certificate and a focus on civil society/citizenship/leadership. The Libraries Social Science Team has worked with the Civicus director to determine how our partnership will work. Thus far they have developed several roles for the team:

- Make library and information literacy skills an integral part of their required course, "Introduction to Civil Society,"

- Work with the three college sections of EDCP 1080, which have the theme of "Democracy and Citizenship," to develop the same skills. The EDCP courses are transition courses to bridge the academic changes that occur between high school and college. They are offered in every college at UM and are varied in their content and goals.

- Train three Civicus research assistants in library and research skills so they can provide "information first aid" in the dorm.

- Co-sponsor a speaker/workshop series that will focus on "information inequalities."

- Participate in open houses for prospective students and their own orientation sessions.

This is the kind of "ground floor" entry which we believe will transform fundamentally the ways in which the Libraries relate to the development of curriculum and in the end to research. I believe the lesson to be learned in all of this is that our Libraries will flourish by becoming more tightly integrated with the development of teaching and research programs.

Similarly, a new collaboration is emerging between the Libraries and the College of

Arts and Humanities through the partnership created by the Maryland Institute for Technology in the Humanities. MITH is a new center located in the McKeldin Library and funded by a National Endowment for the Humanities challenge grant of $410,000. The award shows strong confidence of NEH in our efforts to integrate and innovate with technology and in the natural alliance between the Libraries and the College that was part of the proposal. MITH will support an array of programs that address the needs of both high-end early adopters and those faculty and students who have not fully integrated electronic resources into their research practices or classroom teaching. The key elements of MITH are:

- MITH Faculty Fellows

- Polyseminar

- Faculty Training

- Undergraduate Citation

- Teacher Colloquium and Summer Institute

- Conferences and

- MITH Website, a real-time online environment

The MITH Director reports jointly to the Dean of Arts and Humanities and the Dean of Libraries. Closely allied with MITH is the Libraries' new Electronic Text and Image Center. ETIC is physically co-located with MITH and the Head of ETIC supervises staff and graduate students supporting MITH. Although we do not wish to restrict our vision of the role of ETC with other colleges and schools, we intend that the earliest and strongest strategic alliance be with the Humanities. At the same time, the Arts and Humanities Team is also housed near MITH and this offers new opportunities for intense and close collaboration with faculty working in research and curriculum development. As with CIVICUS, we expect the organization of the subject teams will give a better opportunity for close collaborative work than the traditional functional organization of libraries.

What's next organizationally? During Year 2K we will begin moving towards team-based management of our Technical Services Division. Tech services in my view has been deeply changed by the informating process in the past 25 years, perhaps more than any other sector of library operations. To continue to manage it, as we do, with a rigid top-down hierarchical structure flies in the face of the underlying change and leads to serious stresses in the bureaucratic structure.

Today the challenge to libraries everywhere is to provide access to scholarly information mediated in three fairly distinct ways:

- You will appreciate that the largest source is traditional print collections held locally and mediated through vendor provided OPAC applications most of which are being moved to client/server architectures.

- Networked access to licensed and free Internet resources has emerged in this decade as the primary vehicle for licensed databases of all types. Presenting this information seamlessly and in conjunction with the access to print collections available through our OPACs, is extremely challenging.

- Finally, digitization of local collections is the newest challenge and it presents numerous ambiguities concerning both technology and intellectual property. At the Maryland this includes among other things:

   - Creating metadata based on Dublin Core to provide access to images scanned by our Art History Department

   - Building the infrastructure for streaming video from the Libraries Non-Print Media Department across the campus backbone

   - Building the technology base for streaming audio of classical music performance to support our new Performing Arts Library

   - Working directly through MITH and ETIC on Humanities projects

and it means a new organizational structure with a Digital Library Organization to support all these things and present them transparently and seamlessly to the students and faculty as easy to get at resources. Our DL effort is just taking shape. We are recruiting the directors for both DLO and ETIC. The ETIC facilities have been constructed and are supported by four graduate assistantships. We have assembled baseline technologies for the work of ETIC and are beginning to work with faculty in applications.

Some of the basic conclusions I drawn from this synthesis will shape our adaptation to the "deep change" we are facing:

- Libraries of the future will organize themselves differently. Hierarchy and vertical control will give way to self-managed teams. Functional organization that has shaped libraries for 100 years may remain a framework, but it will be as often ignored as utilized in operations.

- Libraries of the future will be a blend of electronics and print. As new media have been introduced through the twentieth century – microform, sound, video, and now CD and digital – the book has remained the center of our culture's storehouse of information and wisdom. The electronic media will change libraries more thoroughly than did audio or video, but libraries will remain a blend of print and electronics.

- The blend of electronics and print will change the human approach to libraries. A good way of thinking about what libraries will be in the next century is as a triangulation of electronics, print and human intelligence. This is also a way of saying that the human problem for libraries is not becoming familiar with electronic resources but developing ways to negotiate the blend of print and electronics.

- Electronic libraries will require investing more of a university's resources, not less. The case has been made over and over again for the "paperless" society. People stubbornly refuse to adapt their behavior to the *a priori* we have conceived – they print mail that they could as easily file on-line, they buy books to read, and they consult research material on the net principally to identify what they want to use and then print it. On the other hand they are captivated by the electronic medium represented by audio and full motion video. This points in the direction of libraries in which knowledge is represented regardless of medium and to a great extent free of the boundaries of place. Indeed, I believe in a variation of Marshall McLuhan's adage – the "message will determine the medium." All of this suggests a greater investment by all of higher education in knowledge-based information, and this makes sense because we are information driven and information bound enterprises.

Finally, if we librarians are going to build collections that are responsive to these innovations, if we are going to effectively utilize all the powerful tools of information technology, and if we are going to integrate them into our services and into the curriculum we surely must depart from past strategies. This means, above all, we must be proactive – on our campuses, in higher education and in the enterprise of scholarly communicaton.

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