Process Reengineering in Academic Libraries: Shifting to Client-centered Resource Provision

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The emergence of networked information services is challenging traditional forms of academic information delivery. This article examines the potential of business process reengineering to address this challenge through creation of a new client-centered paradigm for information resource provision that will strengthen the partnerships between all information professionals.

The rapid expansion of networked information services, together with the increased emphasis on quality assurance processes, highlights some interesting problems for academic libraries. While strategic planning in academic libraries now reflects a more customer-focused approach, the principal assumption behind most of this planning is that academic libraries are still firmly in the right business and that continuous improvement of existing practices will lead to greater customer satisfaction. This viewpoint challenges that assumption: we believe that if we are to meet the needs of our clients, we need to develop a new paradigm for information resource provision.

To illustrate the potential application of business process reengineering principles to the redesign of academic library services, we examine only traditional document delivery services. However, it becomes clear that these principles can apply to all aspects of the information provision process, and that their implementation requires the collaboration of all information resources professionals, not just those who work in the library.

Making a case for action

Why is continuous improvement of existing document delivery practices not enough? We believe that the internal operating environments of many academic libraries are showing signs of organizational stress, the major symptoms being:

- a decreasing ability to meet client needs and expectations in the old ways;
- addition of new ways of doing things without dispensing with the old;
- inability to shift resources quickly;
- chronic under-investment in new technologies;
- inability to reexamine the need for existing practices and/or the need to change them;
- a tendency to shift the blame onto others;
- organizational structures and cultures that are unreceptive to innovation and unable to accommodate change easily;
- management information that is activity- and input-oriented rather than output-oriented—we can always answer “how many?” but not “at what cost?” and “how long did it take?”

Added to this, there are important factors affecting academic libraries in the external environment. These factors arise out of changes in relationships within the publishing and information industry and changes in information technology (IT).

Traditionally, academic libraries have followed the “local ownership” approach by acquiring substantial serial holdings to meet the needs of their clients. As a result they have always been the largest purchasers of serials and, as such, are tied to the future of the large serial publishers. The spiraling price of serials causes libraries to cancel more, which in turn causes publishers to raise the price to cover smaller production runs. At the same time, communications technology and photocopying make it easier to obtain copies of individual articles rather than rely on a serial...
subscription. This puts further pressure on the publishing industry and means that traditional sources of supply are no longer clear. The changing economics of providing access to the serial literature mean that libraries can no longer be self-sufficient and are faced with increasing uncertainty in choices for document supply.

The advent of commercial document delivery services has added a new dimension to service delivery, and many academic libraries now make use of them. It is the emergence of these services that has led to the “just-in-time” versus “just-in-case” debate and to the development of so-called “access versus ownership” policies. There is, however, great uncertainty as to how the process of procurement should be managed—for example, whether the library or the client should pay for the service, and whether the library or the client should deal directly with the vendor. Such services present a challenge to traditional academic library philosophies, and there seems to be no consensus of opinion on how they should be integrated into library service strategies.

The result is that libraries are providing access to more and more material from more and more sources for their clients—an activity that is currently putting great strain on many areas of the library’s budget, including inter-library loan. From the user viewpoint, the loss of local journal subscriptions and the forced reliance on remote searching through the current cumbersome interfaces are cause for unease, if not dissatisfaction. This points to the need for a new service paradigm that combines the traditional strengths of library service, the rapidly emerging networked information services, and the increased capacity of clients to access and manage information resources through workstations.

Creating a new client-centered paradigm

To design a new service paradigm we need a new way of thinking—a new framework that is truly client-centered. Such a framework can be found in the literature on reorganization and change in American corporations—that of reengineering. Why consider a concept like reengineering in relation to academic libraries? Advanced technologies, the disappearance of boundaries between national markets, and the altered expectations of customers who now have more choices than ever before have combined to make the goals, methods, and basic organizing principles of the classical American corporation sadly obsolete.1 If we substitute “academic library” for “American corporation,” there is an obvious potential for application of the process reengineering approach to the library.

Process reengineering

Hammer and Champy define reengineering as “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.”2

The rethink is fundamental because it assumes nothing; it asks “why” and “what should be,” not “what is.” The redesign is radical because it is not “fiddling at the edges”—it is meant to get to the root of things, including written rules and unwritten assumptions. The improvement is dramatic because the aim is a quantum leap, not a safe 10 percent improvement. It is focused on processes—not on products, tasks, jobs, structures, or workers. Indeed, another writer on reengineering, Thomas Davenport, claims that just adopting a process view may be a major step forward for an organization, because there is value in “viewing the business cross-functionally through the eyes of the customer.”3

Once the key processes are defined, order of magnitude improvements can be achieved by redesigning them from beginning to end, using innovative technologies and organizational resources. Using technology to innovate is not the same as automating existing procedures; it is not “paving cow paths”—that is, providing more efficient ways of doing the wrong things.4

Reengineering is ambitious, rule-breaking, enabled by the creative use of technology, and oriented towards processes. It has become necessary in business because of a new environment in which customers are in charge, competition has intensified, and change is constant.5 Reengineering implies a new organization of work using a process model rather than the old industrial model. In the industrial model, work is broken down into simple tasks on the assumption that people have few skills and little capacity for training. However, organizations then need complex processes and structures to link these simple tasks back together, leading to inefficiency. The process model says, on the other hand, that “to meet the contemporary demands of quality, service, flexibility, and low cost, processes must be kept simple. This need for simplicity has enormous consequences for how processes are designed and organizations are shaped.”6

Information resource delivery: a business process

It is our contention that the corporate concept of “business process” has considerable potential in the library context. As Hammer and Champy say, “A business process is a set or

2 Ibid., p.32.
4 Hammer and Champy, p.48.
5 Ibid., p.24.
6 Ibid., p.51.

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According to this definition of process, the broader concept of “resource delivery” also challenges other traditional library functions, for example, those involved in delivering information resources to undergraduates—acquisitions, cataloging, reserve room, loans, reshelving.

For many types of library clients, it is likely that the old notion of document delivery mediated by the library through interlibrary loan will disappear, except for access to older printed works that have not been converted to electronic form. Instead, resource delivery will involve direct participation by the client, with direct delivery to the client. The process of resource delivery may be triggered by resource discovery (planned and unplanned through serendipity) in sources provided by the library or by others. The client will need to be able to collapse or expand the steps involved in resource discovery and delivery when required.

Several key points emerge from this process view of information provision:

- Effective service to the client involves a high degree of interdependence and collaboration between information publishers, system and tool developers, IT infrastructure providers, and libraries.
- Information technology can link the client not only to the library, but also directly to publishers and suppliers, and to information and systems providers. For our clients, this means we do it their way, or sooner or later they will do it themselves. If we behave like a “troll on the bridge,” our users will build a new bridge a mile upstream. Therefore, the library’s viability will depend on its effectiveness in planning, managing, marketing, and educating, and in facilitating for its clients the processes of resource discovery, delivery, management, and use.
- Unlike a manufacturer, the library has no central “production” process—a library integrates the output of others. This may have a significant impact on our ability to reengineer our processes, unless we find effective ways to exercise our limited influence on others in the supply chain.
- Library processes are not ends in themselves, but need to be integrated into the processes of our clients.
- Library processes are linked and not discrete, so change to one will affect another.
- Library processes are not “one size fits all.” Each library process may have multiple versions for a different client (for example, undergraduate, researcher), and in different disciplines.
Information resource delivery: the need for reengineering

Hammer and Champy suggest that processes are suitable for reengineering if they satisfy these three criteria:

• Is it “broken”? Symptoms of a broken process are:
  — extensive information exchange, data redundancy, rekeying
  — high ratio of checking and control to value adding
  — high degree of rework and iteration
  — complexity, exceptions, and special cases
• Is it important to your clients? There is no question that this process is of strategic importance both to clients and libraries.
• Is it feasible to tackle it? Even if the prospect is daunting, what will be the consequences of not tackling the problem?  

Our current procedures for document delivery qualify for serious consideration on all three criteria.

Redesigning information resource delivery

Key factors in redesigning resource delivery according to the process reengineering framework include developing a new vision, focusing on the client, understanding the existing process, and understanding a number of enablers and barriers.

Key Steps in Redesigning Resource Delivery

- Develop a New Vision
- Focus on the Client
- Understand the Existing Process
- Understand Enablers and Barriers
  — Technological
  — Marketplace
  — Organizational

After establishing the case for action, a new vision is required before the redesign process can start. For example, such a vision for resource delivery could be that clients are able to obtain the right information resources, when and where they want to, at the least cost, and at the required quality.

The redesign process then starts with identification of client needs, facilitated by the library in consultation with information providers and those responsible for the IT support required. We should not assume we know clients’ needs better than they do. On the other hand, we should not be limited by what they say they want, as our clients often find it difficult to conceptualize what they do not know. We should end up by understanding the needs of our clients better than they do themselves. This will require a close understanding of their work environment, an assessment of the differences between expectations and reality, and an understanding of what they do with the output of this process.

To redesign a process effectively, we need to know how well (or badly) the current one performs and what the critical issues are that govern its performance. To develop this understanding, we need to first understand what the current process provides, and why, and then consider what else might be possible. This can be achieved in a number of ways, including participating in the process ourselves as users and by identifying best practices in our own and/or other service sectors. Then we need to assess the potential of technological, marketplace, and organizational developments to support or hinder the redesign process.

Understanding IT enablers and barriers

According to Hammer and Champy, technology should be used to help us “break the rules” in process redesign. “Companies need to make technology exploitation one of their core competencies if they are to succeed in a period of ongoing technological change.”

Although libraries have been fairly quick to take up new technology as it appears, there has been less concerted attempt to influence future developments. As a result, information technology has been developed and adopted in a piecemeal fashion, becoming both an enabler and a barrier at the same time.

There are many opportunities for collaborative work with IT professionals to improve client support at the individual workstation. Some of the most significant IT enablers required to be able to redesign the resource delivery process are listed in Table 1.

Understanding marketplace enablers and barriers

The scholarly information industry is in a volatile state for a variety of reasons. It is important at the outset to realize that the scholarly publishing industry is a very small industry by world standards, which has not so far attracted the attention of the big multinational conglomerates. This means that the industry suffers from chronic under-investment. The investment in the development of the new technology often comes from increasing the profit on hard copy.

There are, however, some interesting trends

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emerging. One of the most exciting of these is the move towards user-centered publishing. Karen Hunter suggests that we will see increased personal choice in communication and entertainment modes reflected in increased flexibility and sophistication in scholars’ professional communications. As a result, academic libraries should expect and demand a more personalized set of offerings and more customized services from publishers, and should capitalize on the client-centered approach to tailor services to disciplines and individuals. Charles Schwartz proposes that the “loosely coupled” nature of scholarly communication, while preventing wholesale structural reform of the industry, may in fact reinforce such possibilities for local innovation.

Some consolidation is taking place within the industry as publishers, database producers, and document delivery services enter into new alliances generally aimed at providing an integrated service to users. These new services do not, however, break new ground in terms of the delivery of electronic services, because they simply link present services in a more integrated way. The user can move from the search on a bibliographic database, to an agent who provides the document in a fairly conventional way, through fax or post from an existing hard copy held either in a document supply center or a library. One important missing link is the capacity for the user to be able to request the document in electronic form and to have it downloaded directly to a workstation. This capacity exists already between scholars on the Internet, but it is not yet embedded in the commercial scholarly information industry.

One of the main impediments to new forms of service delivery is the question of copyright and payment. The publishers have relied heavily on libraries to purchase hard copy serial subscriptions for their income, with “fair use” agreements covering photocopying for individual use. There is much debate as to the adequacy of existing copyright law for the electronic information environment. From the publishers’ point of view, fair use is less important than royalty payments from users accessing services. There are a variety of licensing/royalty agreements already in use, but they are clumsy and difficult to administer. In the short term we are likely to be confronted with different copyright solutions for libraries and individual requesters and with different problems associated with “returnable” and “non-returnable” documents.

In spite of all these difficulties, new alliances are emerging with increasing frequency in an attempt to provide a more comprehensive resource delivery service. Various attempts by libraries to engineer solutions to the problem of integrating resource discovery and resource delivery have met with mixed success. There is now a growing realization that the marketplace should be left to sort out its own solutions. The aim of academic libraries as an intermediary for users is to retain flexibility in a highly competitive market and to avoid unduly restrictive long-term commitments.

Academic libraries will need to think about their relationships with publishers and suppliers and move to create bargaining power with those who can add value through such services as:

- consolidating the output of other publishers/suppliers,
• packaging resources and services to suit our users’ requirements,
• providing “just in time” delivery,
• providing a quality control service on resources and services supplied, and
• providing information to us on usage patterns, user preferences, etc.16

Understanding organizational enablers and barriers

Libraries have to make a strategic decision as to how far they can facilitate the resource delivery process on an individual basis and/or to what extent they should rely on cooperative or national initiatives to achieve their goal. They have to decide, also, to what extent the resource delivery process should be subsidized, either by national funds or library funds.

The array of initiatives now under way in different countries is very often dependent on the prevailing attitude of government to the notion of central subsidy/organization of services. Academic libraries have to decide, therefore, the ground rules for corporate or national action, who the stakeholders are to be in such a process, and the range of marketplace options to be included in such a program.

At the individual library level, there are a number of important strategic issues to be addressed. The heart of the matter is whether the library wishes to be truly client-centered in its approach to service. At the present time, publishers and other resource providers are not willing or able to deal with individual users in academic institutions. Therefore, there can be no new service paradigm in the short term unless the resource delivery process is facilitated by the library. In order to achieve this objective, the library has to change its role as an intermediary from being a deliverer of actual services and products to being an active facilitator in the resource delivery process. Of primary importance in achieving this change will be the effort devoted to marketing the new service paradigm and its related facilities and the training of users to make effective use of the process. If libraries do not rise to this challenge, they will be increasingly marginalized as service providers, and users will make their own arrangements as the need arises.

Libraries have devoted considerable amounts of time to traditional forms of user education, but this has been directed primarily at undergraduate students. Academic staff are understandably reluctant to change their traditional patterns of usage and reliance on libraries. Therefore, a lot of effort is required to make them aware of the new services and to persuade them that the new services will fulfill their needs. Success in the marketing/promotion initiative will fail if it is not followed up with a targeted training program. While some academic staff are highly proficient in the use of technology and electronic information, many are not. This, too, is a resource-hungry

Table 2: Organizational impact of adopting a process framework17

- Steps in the process will be performed in natural order (simultaneous processing)
- Work will be performed where it makes the most sense (even if this means the client participates!)
- Work units will change—from functional departments to process teams
- Jobs will change—from simple to multidimensional—when the result to the client is always cared about
- Processes will have multiple versions for different clients (not standardization)
- Staff roles will change—from controlled to empowered to make decisions
- The focus of performance measures will shift—from activities to results
- Values will change—from protective to productive
- Managers will change—from supervisors to coaches
- Organizational structures will change—from hierarchical to flat
- Executives will change—from scorekeepers to leaders
- A hybrid centralized/decentralized structure will be possible, based on shared information systems
- A “one stop shopping” case manager, with easy access to all information systems, may be used to provide a single point of contact for users and to shield them from remaining complexities in the process
- Checks and controls will be introduced

“The heart of the matter is whether the library wishes to be truly client-centered in its approach to service.”

16 Davenport, p. 239.
17 Hammer and Champy, Chapter 4.
Key Objectives for Facilitating Resource Delivery Using the Process Model

- Construct profiles of clients and their needs, so that the resource delivery process can be tailored to fit their characteristics.
- Integrate this client information with our other internal information systems.
- Achieve integration of resource discovery, delivery, and use, as and when required by the client.
- Achieve integration of resource delivery into the client’s own processes, tools, and other outputs.
- Offer flexibility and choice in all aspects of the resource delivery process.
- Provide clients with an “expert system” for discrimination among choice of resource delivery option, cost, time, and format.
- Provide flexible payment options that are configurable by the client, which identify and authorize usage of tools and services without library staff intervention, and which automatically comply with copyright and licensing requirements.
- Specify and influence the development of modules common to all versions of the resource delivery process—for example, “establish client credentials,” “bill the client,” “pay royalties/license fees”—all of which should function without impeding the resource delivery process to the client.
- Develop measures of client satisfaction that include simple and automatic feedback on aspects of resource delivery, like accessibility, cost, legibility, and speed.

Developing an agenda for action

Margot J. Montgomery postulated the future role of libraries as follows:

In the future, the information provision business will be even more competitive than it is today. Successful libraries will be good at catering to users. This will mean knowing users’ current and anticipated information needs and negotiating efficient and effective access on behalf of users with publishers, other libraries, and authors/creators. 18

In light of the process model, we should expand this list of those with whom we need to negotiate to include all information and information technology professionals.

It is increasingly likely that we will have to conduct these negotiations with new alliances of old partners and with new players we have not yet encountered. Therefore, it is important that we concentrate our own efforts on developing and refining our role as intermediary and facilitator for our users. This role will survive and grow because the client-centered approach demands mechanisms that provide information on user requirements, the satisfaction of user expectations through locally tailored services, and an ongoing role in training and support.

Apart from demanding “imagination, inductive thinking, and a touch of craziness,”Hammer and Champy, p. 134., reengineering the information resource delivery process will provide a substantial challenge to the skills of all information professionals in two key areas: (1) finding effective ways of influencing the development of the technological, organizational, and marketplace enablers required to achieve our objectives, including the development of new and stronger partnerships, and (2) developing the means to profile and record client requirements and client satisfaction measures as part of overall information management and decision support systems.

Librarians may be tempted to adopt a “wait and see” strategy when faced with the complexities outlined in this article. Such a stance would be at best folly and, at worst, the beginning of the road to extinction. In order to survive, we require a new service paradigm, which will demand new and bold ways of managing service provision in close collaboration with our partners. This is our challenge for the remainder of the decade.
