

Embedding Research and Learning in Libraries

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Abstract

The theme of this conference is “Embedding Libraries in Research and Learning.” While this is critical within the context of the new technologies and new service expectations of scholars and students it is also important that research and learning remain embedded in libraries if they are to be an integral part of the scholarly fabric of our institutions.

With continuing economic pressures on scholarly institutions and the desire to use the new technologies to change established and expensive processes and facilities, the threat to the physical academic library has perhaps never been greater

This paper discusses why the physical library is threatened, why it is important to preserve the physical library and what steps can be taken to ensure its continued existence and ability to flourish in the digital realm. In the academic sphere ultimately, by viewing ourselves as active partners in the learning and research process, libraries and librarians will perhaps finally be seen for the value they add to the university and its programs beyond the traditional roles of preservation and dissemination of the printed text.

Keywords: Learning Commons, Learning Environments, Library Space

Challenges to the Modern Academic Library.

The survival of libraries has always been a struggle. Traditionally the ravages of war fire, flood and pestilence have posed the biggest threat. While these were and remain extremely serious threats especially when the number of libraries years ago was relatively limited, few dreamed that the greatest threat would come from new technologies that might ultimately and fundamentally replace the basis upon which libraries have been established.

The book, and the library infrastructure which supports it, has for many centuries been the principle mechanism for conveying information and knowledge. The library itself has

been one of the most successful technologies ever devised to solve a number of problems critical to ensuring that information is preserved and disseminated effectively and efficiently. Without libraries and the principles and values that govern their operation it is arguable that civilization would not be as advanced as it is today. Libraries are the holders of vast amounts of content critical to the continuity between generations of people as well as generations of development and scholarship.

Research and learning have always been embedded in libraries because they are the holders of the vast stores of information upon which research and learning is founded. Being the only consistent source of scholarly vetted content, academic libraries have attracted researchers and learners from their very beginning.

As Jerry D. Campbell points out in *Changing a Cultural Icon: The Academic Library as a Virtual Destination*,

“Today, however, the library is relinquishing its place as the top source of inquiry. The reason that the library is losing its supremacy in carrying out this fundamental role is due, of course, to the impact of digital technology. As digital technology has pervaded every aspect of our civilization, it has set forth a revolution not only in how we store and transmit recorded knowledge, historical records, and a host of other kinds of communication but also in how we seek and gain access to these materials.” [1]

There are a number of factors which have made this digital revolution so successful. It is not simply that information is being digitized but that in tandem with this fundamental shift in the technology of producing information, other technologies and applications for storage, dissemination and retrieval have quickly developed to enhance the value of digital content. The building of vast global networks such as FLAG (Fiber Link Around the Globe) and the ability to send vast quantities of information almost instantly, anywhere and at anytime, i.e., the development of the Internet, has virtually not only duplicated but quickly built upon the library’s traditional role.

Libraries and librarians have actively shared in and promoted this development. It is they, as the theme of this conference makes so abundantly clear, who are striving to embed libraries, or more specifically, content and services, where research and learning take place. One unfortunate result is that there appears to be an increasing disassociation between libraries and the information content and services that are provided where people work and learn.

Librarians' vigorous and successful efforts in implementing and promoting the delivery of digital services and content have only encouraged the view that physical libraries are becoming less and less necessary especially in their roles as warehouses, documentation centres and points of dissemination of print. Should Google, Amazon or Brewster Kahle's Open Content Alliance, among others, fulfill their ambitions to convert large tracts of existing books into digital form even the importance of libraries as archival repositories of print will be severely diminished.

A recent survey by OCLC, *Perceptions of Libraries and Information Services*, demonstrated that the notion most clearly and most immediately associated with libraries is the notion of "books" and only secondarily the many other activities in which libraries have traditionally engaged. [2] The extent to which there is a perceived divide between information that is provided digitally and ubiquitously and the traditional book, will be reflected in the growing disconnect between research and learning, especially in technical fields, and libraries.

"The destabilizing influences of the Web, widespread ownership of personal computers, and rising computer literacy have created an era of discontinuous change in research libraries—a time when the cumulated assets of the past do not guarantee future success." [3]

The probable impact of digitization and communication technologies on the future of the library also becomes clearer when it is recognized that the library itself is a technology whose importance will rapidly diminish over time. Thomas Frey, a futurist with the Da Vinci Institute thinking upon the future of libraries states, "All technology ends. All technologies commonly used today will be replaced by something new." [4] The book is a technology. Insofar as the latter is being recast in digital form it represents an attack upon the technology which supports it, *viz.*, the library. It would appear after many centuries of success an old technology is in the process of being fundamentally replaced by a new one whose full impact remains to be realized.

While the development of technologies that deeply affect practices and processes within libraries is seen as a major threat there are other factors which also challenge the

existence of physical libraries. Many institutions and many universities are faced with what are commonly referred to as "deferred maintenance" costs. These are costs emanating from chronic lack of funding for maintenance of buildings which has led to a deteriorating physical infrastructure. In some instances this problem has become so large as to be totally unmanageable. In Canada, for instance, the accumulated deferred maintenance on university infrastructures is estimated at over \$3.6 billion dollars with \$1 billion to \$1.2 billion considered urgent. [5] Typically, among those buildings in the greatest disrepair are libraries because of their past heavy use and their age. Most libraries tend to be full to overflowing with the need to construct physical repositories in an effort to find a more economical solution for expensive physical storage. Modern technology also means that libraries and universities must be refurbished to meet different expectations of students and faculty alike for environments that will allow them to take fuller advantage of new modes of learning and research.

Given this overall picture of the state of many university physical plants and a list of other building and building maintenance priorities, it is understandable that administrations will increasingly demand very strong cases for continuing to operate libraries as they have been operated in the past. Joseph Esposito states in *What if Wal-Mart Ran a Library?*, "It appears likely that widespread rationalization of the cost structure of American universities is before us, and libraries are bound to be investigated with an intensity they have never before experienced." [6]

Librarians also have understood, in an age of growing digital collections, with the very real prospect of more and more materials being offered digitally, that the case for a new building or even refurbishing of the old is difficult to make. It is for this reason that there has been such a large emphasis on library as space in the last few years. [7] The notion of embedding libraries in research and learning only strengthens the belief that more investment in a physical facility must be scrutinized very closely when the library's own initiatives have been putting so much effort into the alternative.

Campbell in his own conclusion paints a less than optimistic picture of the academic library: "Because of the fundamental role that academic libraries have played in the last century, it is tremendously difficult to imagine a college or university without a library. Considering the extraordinary pace with which knowledge is moving to the Web, it is equally difficult to imagine what an academic library will be and do in another decade." [8]

The biggest challenge to our physical facilities perhaps is one that is rarely mentioned: "In the long term, the most fundamental trend is perhaps the most difficult to measure in

the short term. How are people's habits changing?" [9] At the moment these habits are showing less use of the physical library.

Why Maintain the Physical Library?

There appear then to be a number of significant challenges to the continuing existence of academic libraries. In light of these is there still a case to maintain physical libraries on campuses which would justify significant new and continuing expenditures and resources?

The difference between physical and virtual has been overstated and this in some respects encourages the belief that the days of the physical library are numbered. The difference is essentially in the method of capturing and distributing the data (e.g., digital files instead of printed books) and where it is used. Changes in format are not new to the library where data, knowledge and information have been stored on clay tablets, papyrus, vellum, linen, wood pulp and only most recently on magnetic discs. The physical form has changed but nonetheless remains ultimately physical.

When one speaks of embedding libraries in learning and research then it is an elegant way perhaps of stating that library services and content, in light of radically new formats, can finally be more readily and conveniently assimilated into learning and research at a point and time of need. The content and the services are no less still provided by the library, an entity composed of a physical structure, content and a variety of services.

For the time being, based largely on historical precedent, business models and skill sets, the library continues its traditional roles quite effectively in the digital realm. At a basic level the change in format has not meant an overall change in library functions which remain important to the enterprise of knowledge preservation and dissemination.

There are signs, however, that this is changing and that as technologies and applications continue to evolve the need for this manner of service and content provision might well be completely absorbed into the new business models the technology will allow. If it were simply a change in format as in the past existing library practices could well remain as critical. However, new applications and technologies which use and build upon this format will ultimately overcome the library's traditional roles.

"There may be as much a case for consolidation in the library sector as there has been in the publishing sector, provided that such consolidations maintain services even as they reduce costs. Or, to choose an example that is particularly provocative, if Reuters

can move many of its news gathering functions to India, why are publishers and libraries continuing to toil without any of the advantages of a globalizing economy?" [10]

So while the library is perhaps still essential in its traditional roles during this period of transition and transformation in the realm of scholarly communication, the continuation of this model on the grand scale as it still exists today is not likely. At the very least fewer libraries will need to provide such services in order to continue to maintain a diminishing number of print collections.

Research and learning do not happen virtually but in physical locations, in laboratories, on desktops, classrooms and in libraries. Critical and too often forgotten is that the library does provide a true learning and research context which is unique. No other facility or enterprise shares its values, promotes learning and research governed almost exclusively by the unique needs and learning style of the user, and operates complementary to all else. This is an important and critical role which can and should be maintained especially if traditional libraries can find the will and the resources to make the necessary changes that will continue to enhance learning and research in the digital age. The library remains important for its historical role of providing a supportive place in which research and learning occur. Because of the unique qualities and sets of resources it can bring to the research and learning experience, it should continue as an important place for these activities.

The physical library with its complement of staff and resources should also be maintained because it is the blueprint for all that can and should be done virtually. Without the library as it exists today, many of the virtual services which the library now provides would not have been possible. These services still very much depend on the existing infrastructure for development and support. The virtual presence is a logical extension of the physical presence. If that physical presence should disappear a whole new structure would need to be created to support the virtual delivery of services and content. If we therefore believe in the library and its services whether delivered and enjoyed locally or at a distance, the library as a physical place must be preserved as the vehicle through which transformation to meet the needs of researchers and learners can most effectively occur.

An article by David Lewis, "What if Libraries are Artifact Bound Institutions?" suggests another important reason for maintaining libraries, *viz.*, to subsidize access to information [11] This is a vital function that is often forgotten and that must be marketed better. There is no necessity that the library be the provider of this subsidy as in the past. However, it is

difficult to imagine if the library does not remain the main advocate how this important function could be sustained.

The principles, the values and many of the functions of the library still remain but with a much different technology to deliver them. The virtual is the logical extension of the physical and in essence fulfills the basis upon which all libraries were originally founded--to make information freely available to as many as possible. The question of why we must maintain the physical library is as much about belief and will as it is about need. Despite competing technologies, if we continue to believe in libraries and the values they represent we will strive to make the changes necessary to permit them not only to survive but to thrive.

The new technologies have made us realize that libraries can be more than about books. They are about fulfilling the information and knowledge requirements of individuals in an age where the continual acquisition of knowledge has become essential for everyone.

Libraries have evolved over time to the new public and national libraries we see today. They have a variety of roles, many still largely centred around the book but very much changing with the times. It is this evolution to which we must pay attention and to which we must direct our efforts within the parameters of the technologies available today and those yet to come. "Libraries must co-evolve with changing research and learning behaviours in a new network space." [12]

Strategies for Survival of the Physical Library

The survival of the physical library is by no means guaranteed and the case for maintaining some of the traditional functions in the digital realm is at best weak. Survival must be based upon a strategy of constant change and renewal, of adding value in a new environment to the scholarly communication and research process and putting increasing emphasis on marketing. This is extremely difficult for an institution that has been one of the most stable over time and that has never faced formidable competition in the services provided. Dramatic fundamental change has not been the hallmark of the library nor has the need to respond to intense scrutiny and competition.

The physical library must change in its physical infrastructure as well as in the services it should provide and those which it must abandon. Without such change, given some of the challenges iterated above, it is expected many libraries will cease to exist. All businesses, including universities, need to adapt and build new infrastructures to accommodate new and enhanced methods of learning and new program offerings.

Growth, redevelopment and refocusing are essential for survival in the new economy. In this respect libraries are no different than multi-billion dollar corporations such as telephone companies which have seen their traditional markets in the telephony business disappear and which must now find new large markets to make up for the shortfall. Libraries are among the many services and institutions which are experiencing a major disruption attributable to the rapid introduction of new technologies and which need to find new business models and create new markets.

Within this context of necessary change the ultimate objective is to position the academic library as a complementary and parallel learning environment and to be a leader in providing alternative technologically enhanced independent learning opportunities.

"The library might be seen as an articulation of three components: a location, a collection of resources, and a set of services (using services in a broad sense here). Historically, these three components coincided in the physical space of the library, and the library as a functional entity involved collocation of library users, library collections and library staff. This co-incidence continues to create value for library users." [13]

While Dempsey's emphasis in his article which contains this statement is on the portal as a mechanism for embedding libraries into research and learning it is critical within the context and capabilities of technology to rejuvenate the library as a place where learning and research occur by a closer integration of new services, vastly expanded collections and expertise. These three components describe the library of the past but their interaction and renewed integration made possible by technology must play a large role in the physical library's transformation and survival in the future.

The case for libraries needs to be made all over again. In the context of the academic library that case has to be made on the basis of adding value to the learning and research equation sufficient to justify its cost and infrastructure.

The case will not be easy to make. The author in *Changing a Cultural Icon* suggests a variety of new roles for the library in the current age. Many of these roles, which libraries are currently pursuing whether it be institutional repositories, the provision of metadata, etc., however, can be pursued for only a limited time as there are many indications such activities can not continue to withstand the onslaught of ever newer and smarter technologies which will assume or subsume them.

“Although these emerging digital-age library services may be important, even critical, in the present era, there is no consensus on their significance to the future academic library—or even on whether they should remain as library functions carried out by librarians.” [14]

Whatever new services or functions are created in the library, because change is occurring so rapidly and unexpectedly, must be built in accordance with a new vision and a new focus. At Dalhousie University the intent of the Learning Commons was to create a vision which would guide future development of the library’s services, collections and space as a whole. This vision is substantively different from how libraries have usually envisioned themselves.

The vision under which the Learning Commons was created was to send a signal both to the institution and to staff that there would be a new focus on what the library was prepared to do and ought to do to maintain its relevance and viability in the future. A review of that vision and statement can be instructive.

“The Vision:

The Learning Commons will be the primary catalyst for the continual transformation of learning at Dalhousie University through the imaginative and innovative use of information resources and technologies in order to create graduates with the skills to participate fully in the global information environment.

A Learning Commons is a library-based facility and service that greatly enhances access to scholarly information and improves learning for both students and faculty members. By offering new information technologies and expertise in a physical environment that encourages collaboration and innovation, the Learning Commons provides a complementary educational space that strengthens learning and teaching opportunities.

The Learning Commons will position Dalhousie as an IT leader in Atlantic Canada. It will provide an ongoing and tangible example of “The Dalhousie Difference.” The Learning Commons will demonstrate Dalhousie’s commitment to producing students whose skills and abilities match or exceed the expectations of a global and “smart” society; and to the university’s position as a research and learning leader in Atlantic Canada. Students who choose Dalhousie will have ready access to the

technologies, people and information-handling skills that will directly influence their success in the new work environment and their chosen careers. The Information Commons will enable faculty members to introduce technological teaching innovations that are supported by a facility that complements the classroom experience.

Why should Dalhousie introduce an Learning Commons?

- Competition to attract new students is intense. As tuition fees increase, student expectations for services and facilities also grow. Many universities have already responded to these new expectations. . . . Dalhousie’s introduction of an Information Commons will demonstrate our desire to respond to student expectations, student needs and new methods of learning.
- The learner will be the primary focus of the Learning Commons. Its presence will build a stronger social interaction between scholars and students by actively embracing modern communication tools in an appropriate setting.
- The Learning Commons will unite, in one space, several players involved in providing and manipulating the data and information that supports learning and research. These include map and GIS services, library instructional and reference services, statistical and data services, electronic text services, media services, instructional development services, academic computing services and communications services. Computer resources (approximately 200 PCs, with supporting infrastructure) will allow interaction among the service providers and learners.
- Along with allowing Dalhousie to compete more effectively in student recruitment, a Learning Commons will enable the university to overcome critical shortcomings in its technological infrastructure. Such shortcomings have hampered Dalhousie’s ability to fully satisfy its mission and maintain its pre-eminent position in the region. The introduction of a Learning Commons will strengthen Dalhousie’s efforts to attract the best students and faculty, and garner government funding targeted at institutions

that display educational leadership and innovation.

For Dalhousie, the return on investment – through a stronger market position, and tangible improvements in educational infrastructure and services -- will be significant. An investment of \$3 million to \$4 million will generate a huge positive growth in student satisfaction, and enhanced positioning for the university among other post secondary institutions in the region. Dalhousie must maintain its strong leadership position – the creation of a Learning Commons is critical to that effort”. [15]

There are a number of things worth noting about this vision and statement which is now over three years old: it is not about the library but about how a revitalized library infrastructure can help to meet the institution’s mission and goals. It puts the emphasis not on the books and resources but on supporting the users in their learning and research, and in the university’s effort to maintain its status. This reflects a fundamental shift from primarily focusing on building more resources and the husbanding of those resources to developing an infrastructure that truly supports learning and research using the latest technologies and concepts of space. The support and space that is created is a deliberate attempt to ensure that research and learning continue to happen in the library where there is clear added value.

Over the years the initial statement of the purpose of the Learning Commons has helped to develop a library strategic plan that integrates well with the university’s larger objectives and allows the library to continue with a new focus which more clearly articulates its vital parallel and complementary role in learning and research

To ensure that the physical library remains vital and relevant in our institutions and following upon the continued success of the concept of the Learning Commons, as a starting point, a series of strategies to help the library flourish despite significant challenges to its continued existence, should be pursued

Improve the environment

1. Create Better and a Greater Variety of Study Spaces

Buckminster Fuller said: “Stop trying to change the people. Change the environment and the people will change.” It is true that in the changed technologically charged environment people’s information seeking and retrieval habits are changing. The creation of the Learning Commons has clearly

demonstrated that this is possible for the physical environment as well, the environment to which Fuller originally referred.

Many libraries unless they were built in the very recent past have been primarily built to serve the print model in support of the technology of print. Although the card catalogues are perhaps now gone at most libraries, the various print support departments and physical facilities still exist in their original form: circulation, cataloguing, stack areas, processing rooms, binderies. etc. Attitudes are changing, but the need to truly incorporate technology more effectively into the library has been done on a piecemeal basis. The transformation required is initially a transformation in attitude or focus from a library primarily as a repository and support structure for print to a knowledge centre whose purpose is to engage **actively** in the learning and research enterprise. Libraries must see themselves less as information providers or information centres and more as knowledge centres: environments which encourage and facilitate the acquisition of knowledge. This change in focus and attitude, although on the surface slight, has broad implications in how libraries work and the services they provide.

a) Capitalize on the social aspect of education and research

Education, the acquisition of knowledge, research and its dissemination do not occur in a vacuum. These are social activities which have little significance or meaning unless they occur in a social milieu. These milieus are by their nature varied and it can be argued that libraries are the best means to provide such essential social environments. In this regard we should look to the new public libraries that are being constructed in major centres in Europe and the United States. Redesigned with a focus on the knowledge *cum* social needs of individuals, these libraries are proving to be wildly successful. There is a pent-up demand for good learning and research spaces which allow for learning and research in response to individual needs and goals not dictated by external sources.

Environments can encourage or thwart social interaction as well as productivity in learning and research. Successful Learning Commons provide ample proof of this fact. “The reconfiguration of presence and the mutual influence of physical place and network place has led to a heightened perception of the social aspect of library places, their role as a ‘third place’ as learning exchanges, as venues for collaboration and display.” [16]

b) Determine and serve a variety of learning space needs

Administrators and librarians are not always clear on what spaces are needed. Although this is changing rapidly, academic libraries come from a culture where there was no need to ask users of their needs and wants. Surveys have not loomed large in many institutions until recently—especially surveys on student research and learning needs. As there is competition in the marketplace, both at the university and library level, university officials are beginning to recognize that dictating needs and solutions is no longer acceptable. Alternatives to current study and research spaces need to be explored and discussed with the users as they attempt to discern the best environments in which to use the new technologies effectively. There are at least four different generations of users [17] and each has different expectations with respect to the type of learning and research environments best suited to them. During this period of transition a greater variety of space needs should be accommodated than what most current libraries, designed for a different generation and technology, can provide. “While the need for localized points of distribution for content that is available no longer just in physical form is likely to become less relevant, the need for libraries to be gathering places within the community or university has not ceased. Rejuvenating the brand depends on reconstructing the experience of using the library.” [18]

2. Change the Rules

To make a more inviting and usable space, make certain the library rules are up-to-date and do not reflect the culture of a different age. The current generation of students appears to thrive in chaos and noise. Ensure that there are spaces in the library that reflect this. Cell phones and other new communications devices are judged a nuisance in many traditional library settings and there is a tendency to impose rules that ban them. But be careful to create spaces where calls can be answered. The library must devise new rules to accommodate new needs and new technologies and the types of behaviours these create. It is fair to say that changes have come so rapidly and are so diverse that in some sense it is easy to be caught off guard, to fail to realize that existing rules apply to a different time and to a different culture. In some instances rules have been created to protect the sensibilities of staff and perceptions of faculty and administrators rather than promote knowledge acquisition from whatever source within a context of new expectations.

3. Be truly connected

a) Ensure an abundance of wireless and wired connections

- b) Provide applications that operate on a variety of platforms, e.g., cell phones and PDA's*
- c) Provide applications and equipment not available elsewhere*
- d) Fully support the technologies provided*

Ensure that the library's environment is technologically robust. The library from a communications standpoint and general applications standpoint should be one of the most technologically advanced units in the university. This can be accomplished by attracting other advanced services there such as geographical information systems and statistical data systems. Be certain that the network connections are better than anywhere else. At Dalhousie, the libraries were among the first to have wireless access. It is interesting how that draws students to the library as opposed to other areas. If this habit can be established early, in combination with other amenities, even when the rest of the campus goes wireless, the Library is bound to maintain an advantage as a desirable place to interact and to study. In the Learning Commons at Dalhousie although there are only 160 machines there are over 400 connections. On top of this all the spaces have wireless access. Students will come to where the resources are that they use and with which they interact using the tools and connectivity to which they have become accustomed

Create More Partnerships

Libraries have long been noted for partnerships and collaborations with other libraries. They have been less noted, however, for partnerships outside their realm. New partnerships beyond the traditional library to library relationships are important to establish the library's role as knowledge centre. It is such partnerships which can quickly propel the library into a desired destination for researchers and learners alike.

It is not sufficient simply to locate auxiliary services within the library. They must be developed into an integrated service where the individual parts can become greater than the whole. The Learning Commons at Dalhousie, for example, includes within it the University's Centre for Learning and Teaching. The CLT has taken a real interest in the library and how it can contribute to the teaching and research experience. The Centre has provided classes to library staff to bring them more into the mainstream of teaching. It is because of the close relationship established between the library and the Centre staff that the CLT is one of the major promoters to encourage the Canadian Association of Research Libraries to become active members of the Society for Learning and Teaching in Higher Education. The library is being recognized as a partner in the teaching

enterprise especially when it comes to the ever more complex information environment through this growing collaboration

The location of the CLT in the library attracts many faculty who have grown accustomed to only using the library's resources and services on their desktops. It is encouraging to see the number of faculty who have not been in the Library for years because of our desktop to desktop services who are amazed and delighted by the onsite resources the library has to offer of which they were not aware.

Through its Learning Commons the library has established a growing number of partnerships with the Writing Centre, Statistical Data Services, University Computing and Information Services, and the Department of Mathematics and Statistics. Each of these partnerships serves as advertising for the Library and attracts more individuals to it who might otherwise not think to come to the reinvigorated physical space.

Introduce New Services

Seize opportunities to bring new services into the Library

a) *promote the establishment of centres in the library (e.g., statistics, geographical information systems, tutorial services, etc.)*

b) *become the interdisciplinary location where faculties and departments meet. (e.g., Be a centre for graduate students so that they can interact across disciplines)*

c) *become the data warehouse and the de facto keeper and publisher of scholarly output in the university*

d) *introduce points of presence—librarians who serve directly in departments on a part-time basis*

e) *partner with the University's teaching centre to improve the penetration of information literacy*

The Learning Commons has been one of the most successful introductions on our campus. In three years the gate count in the main library doubled from about 600,000 to 1.2 million visits. If even 10% of those visits result in greater usage of other parts of the library it represents a major impact on usage. The Learning Commons is a true example of how the library met an untapped need for a new *supported* information environment. Success builds upon success and there is interest from the University and our Student Services to build on the library and to make it a truly student oriented centre that integrates their many needs. This has led to a proposal to build a 40 million dollar extension to the building to incorporate many of the ideas. Paramount from the beginning of the Commons, however, was to encourage partnerships and

better services through co-location. The Learning Commons demonstrated that such co-location has major benefits for both the participants and users. The GIS Centre represents one of those successes.

Geographical Information Systems are becoming an ever more important application in teaching and research. At Dalhousie in the library this was recognized at an early stage and it seized the opportunity and advantage of our faculty neutrality to create and locate a Geographical Information Systems Centre in the Learning Commons. The library is now the hub for any research and learning connected to this service. The service is expanding rapidly and there have been no challenges to the library's role in this regard. In fact, this service has quietly slipped into the expected array of library service offerings.

The Canadian Federal Government some years ago proposed creating centres for nation-wide statistical data manipulation—statistical data centres. Again the library volunteered to house that Centre as part of the Commons to demonstrate that it was indeed the centre for knowledge creation and dissemination. The co-location of a centre for statistics and geographical information systems was no accident. The two apparently separate enterprises work extremely well together.

By encouraging new partnerships and services to co-locate in the library, the library itself is becoming an engine for change and new collaborations within the institution and adding value to the services provided in support of learning and research. These partnerships and services also bring new expertise to the library which can and will be leveraged to increase the overall value of the library even more.

The library continues to pursue other services including becoming the data repository for the institution, creating facilities and spaces which encourage the interaction of scholars with government and business in neutral environments, encouraging auxiliary student services to locate within its premises and housing the university's Electronic Text Centre. A few years ago the library located a librarian within the Faculty of Computer Science to serve as a remote and embedded information site. This has proven extremely successful and more opportunities for the onsite location of library staff in departments and faculties outside the library are being considered. In essence, the library is moving towards creating a student and scholars' commons with both local and remote presence.

Marketing

As has been mentioned in several places throughout this paper, the new technologies have brought competition in

areas that have been the library's exclusive domain. This old notion of exclusive domain has naturally led to a culture of complacency and entitlement thwarting the notion of libraries becoming more engaged in marketing.

At a time when individuals appear quite content with the array of digital services being provided, it is important to broadcast widely and often the services and support a revitalized library can offer to researchers and learners which is available nowhere else.

“Trends toward increased information self-service and seamlessness are clearly evident in the survey results. Libraries' mindshare in this new self-service e-resource environment is also clear: behind newer entrants. Libraries' continued importance as a trusted information provider is evident and, overall, users have positive, if outdated, views of the “Library.” Our collective challenge is, therefore, to take this information—both the positive and the challenging—and evaluate where to invest more, invest less, invent new and invert old, communicate more and market better.” [19]

As an example of the poor marketing of which libraries are guilty is the consistent failure to insist on branding of content and resources on library web pages. When faculty and students access online databases or full text articles only too often the brand that appears is that of the publisher and not of the University or library. The user has no indication that the library is the source and broker of the information provided leaving many online users wondering what role if any the library has in fulfilling their information needs. Similar examples of libraries' apparent reluctance to advertise their role and services abound to the overall detriment of their visibility.

Marketing has become a critically important element in ensuring the library's survival.

Conclusion

The challenges that face our universities and technical libraries as a physical presence on campus are well known as is the understanding that the continuation of historical services and functions in the digital realm is not sustainable and increasingly viewed as less valuable. In the face of such a realization and the fact that libraries are now in competition for attention and resources, it must be made clear through new and revitalized services and functions, as well as through new partnerships, that the library is more relevant and important than ever to the learning and research mission of the institution. To survive and flourish and to continue in the

role of vital academic support service to the institution and its clients, fundamental change must be entertained and pursued. Ultimately the academic library must develop a new focus and vision which clearly states its role in providing an essential parallel and complementary learning and research environment for the university.

“What then becomes of professors and publishers and librarians? If we are very sure we know what our roles are and very determined to work hard to maintain them, we have every reason to look forward to extinction. Confident reliance on old models for such functions will not suffice. There will be traditional publishers and librarians and even professors for a good while, just as there are now professional scribes and schools of calligraphy. But just as the power ran out of the monasteries and ecclesiastical institutions of the late middle ages into new channels and forms, so too our educational institutions *qua* institutions are acutely at risk. Those who cherish them will do best to be self-conscious about what they value in those institutions and to be pragmatic about how to pursue the preservation of that value in a rapidly and dramatically changing environment. Paradoxically, this means *not* asking what computers can do in and for our old institutions; it means asking what needs *doing*, and then looking with a clear unprejudiced eye for the best way of doing it. The answer will often be electronic, but the challenge will be to make sure that what the electrons do is indeed valuable to our society. By concentrating on that side of the equation, the people, and even the institutions, who have managed the old information universe have a good chance of finding important roles to play in the new one.” [20]

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