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Library Spaces in the 21st Century—Meeting the Challenges of User Needs for Information, Technology, and Expertise

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Abstract: Libraries and library professionals face multiple challenges in meeting user needs in the second decade of the new millennium. This is particularly true in academic libraries where students and faculty demand and expect fast, easy, and seamless access to information as well as flexible, comfortable places to work alone was well as collaboratively with colleagues, friends, classmates, and instructors. These same patrons often require the assistance of information specialists to navigate a library's increasingly large array of online resources. The past fifteen plus years have seen a major shift in philosophy in the U.S. and in other parts of the globe in terms of the importance of "library as space" in enhancing the role of the college and university library. As a result, academic institutions, at the urging of librarians, have created spaces known as information commons, learning commons, research commons, etc. in response to user needs for 1) access to technology, 2) group work, 3) social interaction, and 4) knowledge creation.

The information commons in all its forms has not been static, indeed it has matured, adapting over time to changing technologies, patron needs, and pedagogies. This paper provides historical context and reviews recent trends in the area in the area of learning and study spaces in academic libraries. It also cites the successful Information Commons at the author's home institution, Loyola University Chicago, examining its first six years of operation and projecting changes in its next half decade.

I. Introduction.

Space has always been an issue in college and university libraries: how it is designed and utilized; where services are located; how materials are stored, displayed, and made accessible; where staff and service points are placed; growth needs for the collections; furnishings and equipment needs; use of technology; etc. Books such as *Planning Academic and Research Library Buildings* (1999) by Leighton and Weber, the third edition of the 1965 classic by Keyes Metcalf, addresses in great detail the space needs of an academic library. Despite being 15 years old, many of the book's ideas continue to be useful and instructive for today's space planners. The authors recognized constant transformation within librarianship and pointed out that "Library buildings…must be able to accommodate change more readily than other types of academic buildings."[1] They correctly observed that "the most striking change in the character of the library over the past few decades has been the result of computer systems, the Internet, the World Wide Web, the personal computer, the laptop computer, email,"[2] an insightful statement long before newer trends in social media, mobile devices, and cloud computing! In any case,

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[1] Philip D. Leighton and David C. Weber, *Planning Academic and Research Library Buildings* (Chicago: American Library Association, 1999), p. xxviii.
[2] Ibid.

technology has indeed altered library operations in a dramatic fashion and has influenced library space planning to a great extent.

Books, articles, and conference papers in most of the 20th century reflected a philosophy that library space should be designed by and for librarians. User needs, while recognized, often came second. We professionals thought we knew what students and faculty needed and planned new libraries accordingly. For instance, user comfort was mentioned as an important design consideration but it focused almost exclusively on the environment: for example, Metcalf wrote that "Comfort, to oversimplify, might be said to require conditions that enable the occupant to forget about such matters as temperature, humidity, drafts, lighting, visual and auditory distraction, and to go about his work oblivious to his physical surroundings."[3] Likewise, Rogers and Weber in their 1971 work, *University Library Administration*, noted that "Students and faculty members have heightened expectations with respect to pleasant surroundings, ample light without glare, colors that are pleasing, ventilation that is adequate, temperatures that are comfortable, acoustics that protect the reader from undue distraction, and seating and work surfaces that facilitate long and often intense concentration."[4] In addition to environmental comfort, much of space planning formerly concentrated on traffic flow, collection storage and access, arrangement of furniture, staff work areas, etc.

As a result, the typical academic library of the mid- to late 20th century was a quiet but sterile place focused on acquiring, processing, and holding collections as well as facilitating scholarly, studious work. While not explicitly stated, except for the graduate student and some faculty members, the university library was a place to avoid or, at best, get what was needed for a project and leave quickly. The exception was the student who needed a quiet location to study because their dormitory or apartment was not conducive to productive work. This (perhaps unintended) "mausoleum library model" was common for decades, quite in contrast to the philosophy of today which besides offering quiet study space also encourages group work and conversation, access to food and drink, ubiquitous technology, and more. No wonder many academic libraries saw minimal use until relatively recently.

In fact, when electronic journals proliferated and the World Wide Web appeared at the end of the 20th century, there were dire predictions of the death of the physical library. ("Why do we need libraries or books? Everything is on the Internet.") Attendance in the college library had declined while large bookstore chains were prospering thanks to their offerings of comfortable lounge chairs, classical music, and coffee. Fortunately, something happened at about the same time that changed the academic library dramatically, resulting in a resurgence in use and popularity like nothing ever seen in the academy. The institution of the university library was not only taken off "life support" but today is stronger than ever with record attendance and intensive use of collections, facilities, and user services.

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[3] Keyes D. Metcalf, *Planning Academic and Research Library Buildings* (N.Y.: McGraw-Hill, 1965), p. 6.
[4] Rutherford D. Rogers and David C. Weber, University Library Administration (N.Y.: H.W. Wilson Company, 1971), p. 356.

The primary impetus for the transformation was a change in attitude by the profession. At first, it was a small number of librarians who dared to oppose the traditional conservative thinking about library space and use. These included those who began to systematically ask users what would bring them back to the library. It involved those who dared to imitate the bookstore model which included comfortable furniture and coffee. It included those who had the vision that access to computers and the Internet was at the center of the library of the future. Gradually, more and more librarians accepted this new model, making changes that made the academic library a destination on campus, not a place to stay away from.

"Library as place," a common phrase today, was perhaps first mentioned by Leighton and Weber who defined it as "where students seek out intellectual interaction, informational exchange, and socializing in an academic environment, and even find the library a refuge from a world dominated by slick entertainment, the media sound bite, and pervasive commercial values."[5] One wonders what they would have thought of students in the library today, not only studying and doing research but Web surfing, using social media to communicate, watching YouTube clips for fun and education, and playing computer games.

While some changes, such as technology access or permitting food and drink, occurred independently and made an impact, a new model incorporating all the above changes and more began to appear in the 1990's in the United States. This new model was known by different names but at first most commonly as the Information Commons. Defined in different ways, the IC as it is called on many campuses, has four basic features: 1) technology in its many forms; 2) spaces for group work; 3) digital media and online collections; and 4) access to both librarians and technology experts. There are other aspects which vary from institution to institution and will be outlined later in this paper.

Finally, and unrelated to the Information Commons and its cornerstone, technology access, two other significant changes occurred after about 1995 which made the academic library more attractive and welcoming to students: allowing conversation and permitting food and drink (within reason). While simple ideas, for years librarians fought against both, with mostly unsuccessful results. For most of the twentieth century, librarians went around quieting users and taking their soft drinks and snacks. After all, this was a library, not a dorm room or cafeteria, rather a place for serious work. We knew that cookie crumbs attracted pests which destroyed books and a spilled beverage was a danger to library materials and furnishings. We did displays of insects and damaged volumes. We put up signs with the primary messages of Don't Do This, Don't Do That; and please, please Be Quiet! No wonder few of my college friends went to the library in the late 1960's.

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[5] Leighton and Weber, *Planning Academic and Research Library Buildings*, p. 3.

Happily today, most academic libraries are warm, hospitable, attractive places where students not only do serious work but go to be with their friends, write research papers, meet their professor for a cup of coffee, make a video presentation for class, do research in databases and electronic journals, prepare for a class group project or presentation, surf the Web and use social media, and attend an impromptu talk by a prominent faculty member. This paper is written to celebrate the library space of today, space which attracts users with technology, comfortable places to work, cafés, both print and electronic collections, and information professionals who smile and are helpful. The focus is on a place that embodies the above concepts, promotes learning, and has revitalized the concept of an academic library, the Information Commons.

II. The Information Commons: history, definitions, models, and goals

More than 20 years ago, the University of Iowa introduced what it called the Information Arcade, a place for students and faculty to utilize technology tools "to access, gather, organize, analyze, manage, create, record, and transmit information."[6] While not an information commons in the modern sense, it was an early attempt to integrate technology into an academic library program in a significant way. Two years later, in 1994, the University of Southern California opened a 24-hour "Information Commons," with similar offerings to those at the University of Iowa.[7] In the following two decades, this service model developed and became increasingly popular. There are now hundreds of examples of information or learning commons in libraries around the world. While some are standalone buildings, most are sections or floors of buildings, often the first thing a user encounters when entering the library.

A brief discussion of the definition of an information commons is in order. While the literature is full of opinions, in the interest of brevity only a few will be cited. The most often mentioned is the now classic definition in 1999 by Donald Beagle who wrote that the information commons is "a new model for service delivery in the academic library" in which there are two possible states: 1) "an exclusively online environment in which the widest possible variety of digital services can be accessed via a single graphical user interface (GUI) and potentially searched in parallel via a single search engine from any networked workstation" or 2) "a new type of physical facility specifically designed to organize workspace and service delivery around the digital environment cited above."[8]

Others have described the information commons as a "one-stop shopping experience" for all types of information needs, both library and technology. Halbert described the IC as "a

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[6] University of Iowa, Information Arcade website: http://www.lib.uiowa.edu/arcade/about/mission
[7] "USC opens $27.5M Leavey Library." *College & Research Libraries News*, 55, no. 10 (November 1, 1994):629.
[8] Donald Beagle, "Conceptualizing an Information Commons," *The Journal of Academic Librarianship*, 25, no. 2 (1999):82.

platform for innovation...fundamentally as the shape of libraries to come."[9] Since its inception, the concept has been influenced by the growth of the World Wide Web, advances in computer technology, the popularity of social media, and changing pedagogical methods and philosophy. Thus the information commons has continued to evolve and a more up-to-date definition might simply be a place where library, technology, and teaching merge to enhance research, create knowledge, and facilitate learning. Beagle summed it up best: "The IC potentially offers a "continuum of service" that can help the student move through and beyond the established regime of information access and retrieval, through further steps of interpretation, processing, and manipulation, and on to the development, packaging and presentation of new knowledge."[10]

Numerous other definitions abound and, while there are dozens of models each with their own set of features and goals, all have one primary goal in common: to meet the needs of the undergraduate student, the so-called millennial. While the academic library commons is aimed primarily at this demographic, it also serves to a lesser extent graduate students and faculty. Indeed, the administration of today's academic library often seeks ways to better integrate information commons programs with teaching and learning and thus work more closely with those whose primary job is pedagogical: professors and graduate teaching assistants.

The service philosophy of the information commons can be characterized by the four C's of connectivity, collaboration, creation, and community. **Connectivity** refers to the student's desire to be linked to the world around them via the Internet, to have easy access to information, knowledge, friends and family, the university and its professors, and more. The IC facilitates this connectivity with computers and peripherals, campus networks and email, high-speed Internet access, and ubiquitous WiFi. **Collaboration** denotes formal class group assignments as well as informal study groups working on homework or preparing for exams. The library commons supports this activity by providing large tables, group study rooms, seminar and classrooms, clusters of comfortable seating, and flexible furniture for creating impromptu cooperative activity. Specialized software for collaborative work may also be provided.

The **creation of knowledge** is the third C, facilitated by 1) online, print, and audiovisual resources; 2) software packages for analytical and statistical work, video and audio editing, and basic office functions such as word processing; 3) digital media services such as equipment loan, instruction in the use of equipment and software; 4) software for group projects; and 5) assistance from information professionals. Finally, the information commons is often a place for social interaction, creating a **community** which complements or even serves as a second (or replacement) student center. It offers formal and informal meeting spaces such as cafés, lounges, classrooms, study rooms, and special events venues, as well as comfortable chairs and sofas, and food service. In this way, Lippincott noted, "the Information Commons can…support the social

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[9] Martin Halbert, "The Information Commons: A Platform for Innovation," *The Journal of Library Administration* 50 (2010):73.

[10] Donald Beagle, "The Emergent Information Commons: Philosophy, Models, and 21st Century Learning Paradigms," *The Journal of Library Administration* 50 (2010):9-10.

aspects of learning,"[11] since interaction among people is a key aspect of learning. Leighton and Weber supported this way of thinking by noting that "higher education is increasingly understood as a social activity, and the library provides the prime studious home with spaces specifically designed…"[12] for social learning. Even the presence of food and beverage can advance education as pointed out by Bennett who wrote "food domesticates a space, fostering the kind of informal, serendipitous conversation that leads to learning."[13] Sullivan also pointed out that "The availability of sustenance also allows students to stay in the library longer, increasing time on task."[14]

Because of this four-pronged philosophy and the variety of services offered (e.g. research assistance, circulation of books and equipment, peer tutoring, library instruction, and technology help, etc.), the information commons has revitalized the library, offering many benefits which draw in users. These advantages include, but are not limited to, seamless and convenient access to information resources; hardware and software needed to do research, write papers, and undertake projects; a variety of spaces to accommodate differing learning styles and study habits; and the opportunity to interact with classmates, librarians, technology specialists and professors, all of whom contribute to the success of one's academic work. It's no wonder that the information commons is such a popular, indeed productive space for our students.

III. The evolution of the information commons

The information commons model, first theorized, proposed, and implemented in the 1990's, has not remained constant. Like other aspects of the library profession, indeed society at large, the academic library commons has been evolving. Old ideas have been updated and improved upon and new aspects of the model have been introduced. Much of the transformation has come from advances in technology, new types of pedagogy, appearance of social media, and changing user need and expectations.

Not surprisingly, **improvements in technology** have had the greatest impact on the Information Commons model over the past decade. More powerful and faster processors, greater and cheaper memory and disk storage, shrinking CPU footprints, larger and touch screen monitors, declining costs, and mobile devices (smartphones and tablet PCs) have revolutionized and influenced the kinds and variety of computer equipment that are needed in today's library. This situation is in stark contrast to the early IC model of desktop computers, printers, and scanners. Of course, because technology advances day-by-day, it is a challenge for libraries to stay current as well as support the incredible number of electronic devices and software now

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[11] Joan K. Lippincott, "Information Commons: Meeting Millennials' Needs," *The Journal of Library Administration* 50 (2010):32.
[12] Leighton and Weber, *Planning Academic and Research Library Buildings*, p. 3.
[13] http://www.clir.org/pubs/reports/publ29/bennett.html
[14] Rebecca Sullivan. "Common Knowledge: Learning Spaces in Academic Libraries," *College and Undergraduate Libraries* 17, no. 2-3 (2010):142.

available to users. Mobile devices have spawned a related issue to an extent even greater than anyone designing a commons envisioned just a few years ago: an increased demand for power outlets to operate and charge multiple devices from laptops to cell phones to tablets. The old adage, "there are never enough electrical outlets," has never been more true and the need will only increase as time goes on. My own library has spent thousands of dollars in the past five year adding many more electrical outlets for our patrons.

Technologies seen in today's Information Commons include, but are not limited to, 1) mobile docking stations/modules for individual and group work; 2) video walls; 3) touch screen computers and signage; 4) 3-D printers; 5) circulating iPads and other tablets of all sizes; 6) copier/scanner combinations; 7) wireless printing; 8) poster printers; 9) charging stations or lockers; 10) splitters for group listening; 11) green screens; and the list goes on. Such an array of equipment is in response to user expectations and a desire to offer the latest technology in support of learning, knowledge creation, and collaborative work. The situation underscores the need for partnerships with the campus IT department, instructional technology units, and computer science departments to name a few.

Changes in pedagogy have also influenced the design of the learning commons. While many classrooms still feature the "talking head" professor lecturing while students (frantically) take notes, there have been transformative ways in which knowledge is imparted. Students working collaboratively is one example. While group projects and class presentations is nothing new in the academic setting, their use seems to have increased significantly since the turn of the millennium. This has evolved from in-class speeches or group term papers to presentations utilizing videos done by the students themselves, not to mention incorporating Web resources in PowerPoint slides, etc. The Information Commons, with its emphasis on collaborative work, has not only supported this change but perhaps has influenced it as well. Group study rooms, practice presentation spaces, collaborative software, and so on, all central features of the library commons, facilitate group work and *learning*.

The prevalence of online and blended classes (online with some face-to-face class sessions) is another area where the information or learning commons can be of assistance. Tools for the creation of PowerPoint presentations, help with identifying and downloading video clips, and aid with integrating library resources into course management system class shells, are all things that IC staff can and do assist with. With its fast Internet connections, wireless service, and large screen computers, the IC is an ideal place to participate synchronously with classmates and to review previously recorded class sessions. Instructors may even present online class sessions and participate in virtual discussions in the commons. While this may be done from a professor's office, even home, the Information Commons provides a strong alternative with more up-to-date technology than many teachers have access to themselves. It is unclear exactly how the IC may interface with and support Massive Open Online Courses (MOOCs) but surely there is a role similar to that for the institutions own online or blended classes.

So-called "flipped teaching" is in stark contrast to traditional instruction involving classroom lectures and exams with students reading textbooks and doing problem sets outside of class. In flipped instruction, students first study the topic by themselves using reading material assigned by the professor often along with video lessons either prepared by the instructor or a third party. During class time, students use the knowledge acquired from outside class to solve problems or lead discussions facilitated by the professor. In short, flipped classrooms allow time for hands-on work, for help with math problems for example, and for asking questions of the instructor. Students also help each other and learn from interaction. This process repeats itself in the commons in study groups, facilitated by flexible groupings of furniture including mobile chairs and whiteboards, not to mention group computing stations or rooms.

Many universities are beginning to record lectures for later viewing using so-called "lecture capture" software along with the video hardware itself. The recorded classroom sessions offer the ability to watch, rewind, pause, and replay which can aid in the student's retention of educational material and understanding of concepts. When universities utilize this technology and offer lectures in streaming format, the commons is an ideal location for viewing, either by individuals or groups. The software can also be used by librarians to create online tutorials in the use of databases and other resources; these sessions can be embedded in course management pages for individual classes.

A growing trend in the United States and elsewhere is to require a so-called capstone course or experience in one's major. In many instances this means the creation of an electronic portfolio to collect and showcase a student's work. Loyola University Chicago students often create an ePortfolio which the university website describes as "a digital collection of work that showcases skills, abilities, values, knowledge, and experiences through a variety of artifacts, documents, or media files that provide a holistic representation of a student's personal, professional, and academic progress. An ePortfolio may also function as a venue for sharing academic work with faculty members, a tool for inviting collaboration and feedback, a professional resource, or a private log of academic progress.including text, images, data files, blog entries, multimedia resources, Web pages, and more."[15] The technology and staff of the learning commons may facilitate portfolio creation through special software and instruction in its use, help with formatting text and data, and aiding in the capture of written or digital material as well as electronic resources, and more. While such support often comes from individual academic departments or an office of experiential learning, the IC, through its technology and services, is an additional resource which can aid students in the creation of this important collection of "electronic information," critical for learning and evidence of achievement.

Social networking has likewise had an impact on the learning commons. Students (and we) use these tools to stay in touch with family and friends, share photos, play games, offer

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[15] http://www.luc.edu/highimpactlearning

opinions, read articles, blog about personal experiences, and much more. The Information Commons is a place to check for and send messages using the library's desktop computers and other devices. The ubiquitous wireless access in the commons also supports using one's own laptop, tablet, or smartphone for such communication and information exchange. The IC staff use these tools to communicate with each other, announce instruction sessions and cultural programs, communicate changes in hours, and receive feedback from users. Using social media, libraries create contests to stimulate interest in collections and services including, for example, offering prizes for the best video or photo about the library or commons. Such activities were not possible before the appearance and now great popularity of social media.

Another impact on the Information Commons model has been, of course, the **changing expectations of our users**. Before the commons, patron attitudes toward the library could be described as neutral at best. We had library lovers in our academic community to be sure, but for the vast majority of students, the library was just a place to study, find a book or journal article for a specific assignment, and little else. It was **not** a destination as mentioned earlier in this paper. One went there because you had to. It was more fun to hang out or more productive to study elsewhere. Expectations of finding things easily, even getting help, were often low. There were exceptions, naturally, but in general one didn't spend much time in the university library.

Then along came a new generation of student, the so-called Millennials, the ones who grew up with computers and the Internet. They expect fast, seamless access to information for class assignments. They prefer to find information themselves. They like and choose the concept of self-service. They want access to technology anywhere and everywhere. They don't want someone telling them to be quiet or not to eat or drink when studying. The traditional library for the most part had nothing for them except a quiet place to study and check the hometown newspaper if they were lucky.

As noted earlier, the Information Commons changed all that with its computers, café, permission to talk, and one-stop shopping for information needs, both library and technology. But now that we have given our students what they wanted, they want even more. They want faster Internet access. They desire equipment checkout—digital cameras, microphones, podcasting equipment, video cameras, laptops and tablets. They expect the latest technology: up-to-date PCs and Macs, large format scanners, video editing software, a fast, strong wireless signal, and smartboards. They want a variety of seating and moveable furniture to create their own work and collaborative space. They need resources and spaces to create and practice class presentations or prepare for a job interview. They want more than coffee and soft drinks—they want yogurt, bagels, salads, even sushi. The good news is that we as a profession are responding to these needs as we design and keep our information and learning commons up-to-date. However, we must continue to respond quickly and regularly if we wish to avoid becoming the place on campus that everyone takes for granted and begins to abandon for something else.

IV. The Information Commons of Loyola University Chicago

A look at an example of a successfully implemented information commons can be instructive, and this portion of the paper provides an overview of the Information Commons at Loyola University Chicago, describing its goals, philosophy, characteristics, and operation. Keys to success and future directions will also be discussed. Founded in 1870, Loyola University Chicago is a doctoral granting institution offering a variety of degree programs at the graduate and undergraduate levels in the humanities, social sciences, sciences, law and medicine. In 2013-14 it had more than 16,000 students, including more than 9,000 undergraduates. It is a private institution with a diverse student body, a high percentage of which has a "study abroad" experience before graduating. Academic strengths are the humanities, law, nursing and medicine, business, social work, teacher preparation, and communication.

The school has five libraries in Chicago and another at the Rome, Italy campus. One of the Chicago facilities is an information commons, a standalone building connected to the main library by a corridor with a café. Located on the shores of Lake Michigan north of downtown Chicago, the Loyola IC was constructed in 2006-07 at a cost of $32 million and has 72,000 square feet distributed over four floors. Described at the time as a "library of the future," it has only a handful of reference books and utilizes computer technology to access information on the Internet and in hundreds of databases and thousands of e-journals and e-books.

Since opening in January 2008, our information commons has been an overwhelming success in terms of attendance, utilization of technology, user satisfaction, and programming. From the beginning it had three primary objectives:

- Focus on undergraduate library and technology needs
- Create a one-stop information shopping experience and
- Provide tools for the creation of knowledge.

Beginning with the planning process, the Loyola Chicago IC has been a cooperative project of the University Libraries and Information Technology Services (ITS), the campus IT group. The Libraries provide research assistance, information resources, and bibliographic instruction, while ITS provides the computer hardware and software, technology training, customer support, and the network and wireless infrastructure.

Designed for the future with an open, flexible layout, the building includes a video conference room, digital media creation and editing software, a satellite of the University's writing center, equipment checkout, a large, multipurpose meeting space, and group study rooms which can be reserved online. Staffing is a combination of librarians, supervisory staff, technology specialists, and student assistants.   The facility is open 24 hours a day, five days a week.

From the founding of the Loyola IC, we sought to fulfill the primary library requirements of today's student: 1) spaces to study, work, and be together; 2) up-to-date technology; 3) robust network connectivity; 4) library and technology expertise; and 5) information resources. As a result, we based our service philosophy on the "four C's" cited above: connectivity, collaboration, creation of knowledge, and community. For illustrative purposes, what follows is a description of how Loyola Chicago has responded to each of those areas.

Today, in 2014, **connectivity** implies a need for fast and reliable Internet access, cell phone communication, and strong, ubiquitous wireless networks. In response, the Loyola IC offers high speed Internet via 222 PC and Mac desktop computers, more than 50 circulating laptops, multiple iPads and Android tablets, and robust wireless access throughout. The need for **collaboration** is aided by spaces and furniture for users to work together: 1) 30 group study rooms, each with a computer; 2) four technology equipped seminar rooms accommodating up to 12 persons; 3) six 24-seat digital classrooms; 4) large tables in open study areas; and 5) groupings of soft seating throughout the building.

Our information commons facilitates the **creation of knowledge** via multiple types of hardware and software as well as a vast array of online resources with ready access to library and technology professionals for guidance in their use. Noted features include numerous high-end Mac desktops for audio and video editing, a website for 24/7 access to the library's information resources, and a very popular equipment checkout program offering digital and video cameras, headphones, podcasting equipment, microphones, portable devices such as digital voice recorders, hard drives, and DVD players, and more.

Almost immediately, the Loyola IC became a focal point for student gathering, both for study and research as well as social interaction. Even the opening of a new campus student center in 2013 did not diminish the **community** role of the building which for many has served as what sociologists speak of as a "third place," a location apart from where we live or go to school or work, a place we spend our free or leisure time. To facilitate this atmosphere, we offer a variety of study spaces with around 700 seats that accommodate different learning styles, one floor devoted to silent study, a café, and round-the-clock opening, five days a week. Our location on Lake Michigan provides patrons with relaxing, beautiful views of the water, even in the winter. Regular talks by faculty promote learning outside the classroom in an informal, comfortable setting.

Services in the Loyola IC include 1) a help desk staffed by reference librarians and technology specialists; 2) private reference consultations by appointment; 3) information literacy classes; 4) workshops on technology tools and online library resources; 5) book checkout and return; and 6) group study reservations. Technology-related services involve 1) troubleshooting personal computer problems; 2) resolving network access and password difficulties; 3) poster printing; 4) high resolution scanning, and, as noted above, 5) equipment circulation. All services are regularly monitored and have been modified over time.

Quality of service has been maintained via the aforementioned partnership with Information Technology Services. Our success over the first six and a half years can be attributed to several factors including 1) creating a steering committee of key players from both library and ITS; 2) regular staff meetings and instant messaging (IM) communication; 3) rapid response to and consultation on problems; and 4) regular assessment of services, the web site, equipment use, and other issues. While there have been challenges and disagreements at times, such matters have normally been resolved quickly and in a straightforward manner due to a willingness to communicate and be flexible.

V. The Committee to Re-envision the Information Commons

As popular as the Loyola IC has proven to be in its first six-plus years, it became clear several months ago that the building and our services had fallen behind what other institutions now offer users in their Information or Learning Commons. While we have kept our desktop computers and equipment checkout items up-to-date, there is much more that we could provide to our patrons. A review of the literature, examinations of websites, visits to other colleges and universities, and presentations at conferences such as the second annual "Designing Libraries for the 21st Century Conference" at North Carolina State University, all told us that we cannot be satisfied with what we planned and implemented in our IC in 2008. As noted earlier in this paper, rapid changes in technology, new types of teaching, and rising user expectations demand that we must keep our model up-to-date.

As a result, a committee of Loyola libraries and Information Technology staff was appointed in the fall of 2013 to plan for the next several years of our Information Commons. Their task was to investigate and recommend changes in programming, furnishings, and technology to bring our award-winning building up-to-date and respond to current and future needs. The committee has been studying the following issues: 1) services offered by both the libraries and IT; 2) role and use of service desks; 3) staffing needs and patterns; 4) new technologies in support of learning, in open areas, group studies, classrooms, and other spaces; 5) better support for collaborative study and learning; 6) improvement of programming and presentation spaces and technology; 7) infrastructure upgrades, e.g. power outlets, wireless capacity, and Internet speed; 8) software upgrades and additions; 9) furniture needs for study, computing, and collaborative work; 10) redesign of the library instruction classroom; and more.

In terms of furniture, the group has been looking at replacing some of our fixed wooden tables with more flexible, moveable, modular tables and portable white boards to allow for impromptu group work. Tables and carrels for group listening and mobile device collaboration is another possibility. Technology additions might include 3-D printers, a large interactive video wall, touch screen computing, expanded equipment checkout, group work stations accommodating multiple mobile devices, interactive digital signage, and the use of collaborative software, to name a few. Service concerns include cross-training staff between some library and

IT functions, new workshops on library resources and software tools, and future types of reference and technology help for our users.

In addition to the planned updating of our Information Commons, the staff has been focusing for the past three years on incorporating aspects of a 'learning commons" into the IC program with the goal of becoming better integrated into teaching and learning at Loyola University Chicago. To this end, we are focusing on increased numbers of workshops to teach our students how to better utilize the information and technology resources at their disposal. We have implemented a series of programs which involve faculty and librarians in discussion around topics of mutual interest such as use of technology in the classroom, social media, digital humanities, electronic textbooks, and teaching partnerships. A series of "flash seminars" featuring our faculty giving brief talks on subjects as wide ranging as philosophy and the environment has proven to be an effective way for students to become engaged with their professors outside the classroom. In the future we are hoping to implement additional programming and services for graduate students and faculty in the information/learning commons.

Beagle observed that "the IC becomes an LC when its resources are 'organized in collaboration with learning initiatives sponsored by other academic units, or aligned with learning outcomes defined through a cooperative process.'"[16] At Loyola, our partnerships with ITS academic resources, the faculty development center, the writing center, and individual faculty, are moving our successful information commons toward a learning commons model, providing opportunities for education outside the classroom, fostering creativity, and offering a platform for the creation of knowledge.

VI. Summary

The information commons is now so mainstream that for many it is no longer a new idea. Yet it cannot and will not remain stagnant for the foreseeable future as evidenced by changes in the field over the past two decades. Driven in large part by technological advances, the IC has also responded to new types of pedagogy, increased and ever changing user expectations, and creative, visionary librarians who put their patrons first. Library professionals have always given customer service high priority and through the information commons model they have seen an opportunity not only to meet, but exceed, the expectations of library users by fulfilling the IC's "4 C philosophy" of connectivity, collaboration, creation of knowledge, and community. Because of both internal and external influences in education, technology, and society, the Information Commons and Learning Commons are here to stay but with the knowledge and expectation that they will continue to evolve and complement traditional library services and collections.

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[16] Donald Beagle, "The Emergent Information Commons: Philosophy, Models, and 21st Century Learning Paradigms," *The Journal of Library Administration* 50 (2010):17