Building a library of 21st Century
Habib University Campus Library –a vibrant social learning space for promoting active learning, research, knowledge creation and collaboration
by

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Abstract

The digital revolution powered by Internet and its related technologies has revolutionalized the way we live, learn and work. The revolution has challenged the traditional concept of learning which was considered to happen only in classrooms or closed spaces to learning which takes place anywhere, anytime and everywhere. The NET generation users, who are *multi-taskers,* prefer learning experiences that are ***digital, connected, experiential, immediate and social***[1]*.* Worldwide, libraries are undergoing a massive change due to the fast paced digital revolution. A library nowadays is no more considered to be a warehouse of printed books, magazines and technical service provision space only. It is a space where *learning is celebrated*, *intellectual quest and research is appreciated*, *collaborative learning takes place, information is used and applied knowledge is created.* Keeping the above mentioned facts in view, a key question asked by the university planning and research team of Habib University Foundation (H.U.F.) was *"how a library space should be designed which enables faculty and students to cater to the learning needs and challenges of 21st Century and the Knowledge Society".*

This paper examines the role of libraries in the 21st Century and how library should be designed as a physical as well as an intellectual space to promote research, collaboration and knowledge creation. The paper also highlights key processes and steps undertaken to come up with a space planning document for helping architects to come up with the maps and design of library space. Finally it shares some of the key details of upcoming Campus Library of Habib University of Science, Technology and Society. It concludes with brief details observed in the perception of librarian about learning and facilitating it vis-à-vis 21st Century Learning requirements.

Introduction:
Let us begin by understanding and unpacking our perceptions about how adults learn or how an adult of digital age prefers to learn. Let us imagine a student walking into a university campus with his GPRS enabled cell phone or an iphone, a wifi enabled laptop, mp3 player and an ipod plugged in into his ears. He enters into a static classroom or a lecture hall, where he is supposed to listen to a lecture and take notes. What would be a common observation while the lecture is delivered? The student would pretend that he is listening attentively to the lecture, but in fact he may be recording the lecture on his mp3 player to listen to it later or he would be sending SMS messages to his friends and college mates, and if allowed to work on the laptop, he may start taking some notes or start

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[1]Oblinger, C. L. (2006). Student Practices and Their Impact on Learning Spaces. Learning Commons - Educa use Publication , pp. 5.1-5.2.

chatting with his friends, logging in to social networking website or browsing the web. If this scenario would have been shared 10 years ago, one would commonly argue that this scenario does not relate to any higher education institution in Pakistan, however, this is becoming applicable and observable day by day. So what this scenario tells us, it informs us that learning is getting personalized and adults love to learn in their own personal way.   Personal Learning Environments (PLEs) are emerging as a relatively new phenomenon (Van Harmelen 2006).   The Net generation or Neo-millenials are *multitaskers* and prefer learning experiences that are ***digital, connected, experiential, immediate and social***.   When it comes to content or dealing with content, the Net generation learns and create content through ***digital, mobile, independent, social* and *participatory*** ways (Oblinger, 2006).   Dan Tapscott has highlighted eight norms or characteristics of the Net generation which has impacted their lives at a personal and professional level. These norms (Tapscott 2009)are

1. *Freedom* to select, purchase, talk to a friend or choose when, how and the way they want to work
2. *Customization* matching and configuring things and devices as per their style and need
3. *Scrutiny* which entails differentiating between fact and fiction, finding the right sources from numerous information outlets and being aware of what's happening around
4. *Integrity* carrying values of honesty, transparency, accountability and fulfilling what they have committed. They expect it from others as well
5. *Collaboration* the Net generation is collaborative by nature. Their decisions and choices are heavily influenced by each other. They collaborate using chat forums, Web 2.0, social networks, mobile phones, and other online tools and gadgets. While working for companies, they are eager to collaborate and have dialogue with customers for collecting feedback and ideas.
6. *Entertainment* for Net generation, the work is and should be fun. Having aware of the ways Net generation employee prefers to work big corporations like Microsoft and Google have provided gyms, pool tables, Xbox consoles and rock climbing walls at their workplaces. Multitasking has become a preferred way to learn and work.
7. *Speed* the Net generation use frequent instant messaging, expects a quick response every time they send a message across to a fried or a company. E-mail for them has become too slow of a medium of communication.
8. *Innovation* dynamism, not comfortable in following the bureaucratic or hierarchical structures, cutting edge technologically driven work environment, devising work specs that promote collaboration and innovation are some of the emerging traits of the Net generation at the workplace.

Therefore, as a matter of fact, these characteristics inform us that the "one size fits all" model of education, learning and vocation is no more relevant in the 21st Century. It also has a strong bearing on how learning institutions and spaces are designed including a library to promote a culture based on the above mentioned characteristics of Net generation for promoting meaningful learning, knowledge creation with creativity and innovation.

Designing a 21st Century Library Space: paradigms and principles

How and for what learning spaces of future should be designed. Malcolm Brown and Phillip Long (2006) share that "Learning spaces in the 21st century should foster discovery, innovation and scholarship, not simply contain them".

Bennett (2009) has outlined three paradigms through which libraries have been going through from their birth to the contemporary times. The paradigms also represent the era or the particular point in time when the libraries were designed to achieve their objective of research, inquiry and facilitating thirst for knowledge. All these paradigms continue to influence the way libraries as spaces are designed today. The first paradigm is a reader centered paradigm, which brings service of books to users closer and the design was made as such that the contemplative and library space were closely constructed. He states that *"and because books were few and precious, the space was designed primarily for readers: typically a reading lectern or carrel for the monk, placed perpendicular to a window for the sake of light"*(Bennett 2009). It has given birth to the idea of having a departmental or a seminar library. The second paradigm is the book centered paradigm where floors and floors and shelves were stacked with books. In nineteenth century, due to growth of publications accommodation of growing collections became an issue, which resulted in coming up with huge buildings with lots of stacks to store collections. Referring to construction of main library of University of Illinois, he writes that *"Book space, not reader space, came to dominate this library over a period of just fifty years. A building type once thought to bring readers and books together was now less and less congenial to readers as books took over the space."(Bennett 2009)* The digital revolution and availability of information everywhere, anywhere and anytime has also transformed and put an emphasis on how library size as a building and facility should be considered? The economics have entered whereby questions are asked about resources and their availability. What balance of books and technology should be made available to the patrons and what how they will be accessed? However the most important question and a paradigm sought to be achieved is visualizing library from the learner centered perspective i.e. could learning become the primary motivator for designing a library space? This brings another question in the readers mind about what are the key factors of a learner centered design. Human Centered Design Guidelines and considering the element of human centeredness in learning space design is suggested(Gee 2006). The learner centered design should be human centered. Gee (2006) writes "*the learning spaces including the library should be human centered and a holistic approach should be undertaken to design it. Human beings seek both physical and psychological support."* The space, technologies and services should be designed keeping in view the human element rather just merely provision of the facilities, essential software and hardware. Furthermore, a person's sense of well-being and how it influences productivity, creativity and engagement should also be given a due consideration (Heerwagen and Cincinnati 1998). Their research has focused on four elements that must co-exist to create positive and productive places: *cognitive effectiveness*, *social support*, *emotional functioning* and *physical function*. If people aren't comfortable and don't have a sense of well-being, they become distracted. The first consideration should be given to what people make feel comfortable, freeing their brains and bodies for learning. Therefore, Heerwagen and Cincinnati (1998) has stressed on the following key learning principles to keep in mind

1) acknowledgement that brain/mind is social,
2) learning involves both focused attention and peripheral perception and

3) each brain is uniquely organized to learn and act and reflect.

Therefore, for designing the library, it is important to come up with a structure and facility, which is conducive to learning consistent with the learning principles. Gee (2006) recommends the following design principles to be considered while designing a library space:

1. ***The library should be designed as such that it promotes Do it Yourself (DIY) attitude to facilitate learning,*** which is the key objective of the University. It should promote self reliance in exploring, searching and identifying resources and acquiring services.
2. ***The library should stimulate and motivate students and educators to work collaboratively.*** Learning is also a social activity. Library should provide individual and mixed spaces for learning. For e.g. the transparent view of various spaces / zones in the library would encourage most of the students to use library as a venue, where teamwork and collaboration is valued.
3. ***The library should attract people and spark a love for learning.*** The library walls, corridors and, hallways should have posters, online displays, which could spark thinking and discussion. The arrangement of books and other resources should also give an invitation to users. Another way is to connect with Nature, having avenues where people can interact with and ponder upon nature and its gifts itself.
4. ***The library furniture and design should be ergonomic.*** Since the library will be used for multiple functions i.e. browsing, discussion, writing, word-processing, researching, reading and presentation etc. therefore, the furniture and design should support physical body postures. Furniture should also be designed in different colors, texture and shapes, which can reinforce association and retention. The lightening should be done in a way that it should not strain eyes.
5. ***Library should be flexible, welcoming and familiar*** Library should consider how students could be involved in various operational aspects, interior designs / displays, beautification aspects, which would increase the familiarity and ownership. Use of mobile displays would also add to this purpose. Some of the spaces in the library should provide flexibility, so users can customize them according to their need. Libraries should be spaces for celebrating learning. Programmatically, libraries should also be flexible and invite feedback for improvement. It should also promote a sense of security, and pleasure, as many of the users will be working late nights.
6. ***The library should promote and embrace diversity*** the resources and services should be diverse and should meet individual as well as collective needs.

With respect to the role of librarian in 21st Century (Emanuel & Adams, 2007) surveyed 3400 respondents about what three words describes the librarian in digital age. The responses include *Tech Savvy (687), Information/Informed (376), Knowledgeable (368), Flexible (317), Savvy (277), Innovative (262), and Helpful (208).* Alison J. Head & Micheal B. Eisenberg (2009) in their survey based research found that nine out of 10 students in the sample turned to libraries for certain online scholarly research databases (such as those provided by EBSCO, JSTOR, or ProQuest) for conducting course-related research, valuing the resources for credible content, in-depth information, and the ability to meet instructors' expectations.

Internationally, libraries are revisiting and rethinking the ways through which they could incorporate human centered design principles which would not only increase the credibility in the eyes of users but promote scholarship, creativity, innovation and meaningful learning. The massive digitization process and availability of resources in digital form have also given birth to the question of physical existence of brick and mortar library and its size.

Habib University of Science, Technology and Social Science – An Introduction

Pakistan is struggling to cope up with the massive challenges of 21st century emerging from globalization, knowledge based economy and high paced revolution of IT and other technologies. At a societal level, some of the challenges include energy crises, deteriorating environment, pursuit and creation of knowledge for wealth, fading social relationships, brain drain, unhealthy and unsustainable lifestyle and lost sense of community and identity. At higher education level, there exists a dearth of higher education institutions which focus on research and creation of knowledge, place high value on intellectual rigor and quality, create awareness about emerging careers and develop programs, dovetails its academic programs with the current challenges and emerging needs of the society.

The University of Science, Technology and Society aspires to become a research-based university and will offer both graduate and post graduate programs in the fields of science, computer technology, social sciences and entrepreneurship. Its curricula, pedagogical and assessment framework and research and publication portfolio will be determined keeping in perspective challenges and opportunities stated above. Initially, programs will be initiated in a city campus and then the university will be a part of network of universities situated in the Education City, Karachi. It will provide a state-of-the-art learning space to the youth of Pakistan for their higher education and will contribute to the efforts of the Government of Pakistan for the promotion of higher education and science and technology.

Vision of the University
The University will be a preeminent institution in higher education—manifesting excellence, embracing diversity, inspiring confidence, and engaging society. The University will aspire to a national and international recognition of excellence and performance in scholarship through teaching, research, and service.

The University will
- be recognized as one of the top educational and research universities in the country, attracting the best students, faculty, and staff;
- prepare students to be leaders and decision makers, articulate and principled, innovative and confident, and able to think critically with sound reasoning ability;
- be a learning-intensive institution where faculty is encouraged to generate and impart new learning and prepare students to compete in a knowledge-based society; and
- be engaged in local, national and regional, social and economic development for the benefit of both the public and private sectors.

Academic Framework
The university will be offering following degree awarding programs in:

- **Sciences:** The faculty of science will offer BS in computer science. It will also offer BS in Physics and BS in Mathematics because of their fundamental role in science research and innovation in engineering. All the programs will be integrated with Arts, Social Sciences and Humanities to create a comprehensive program of studies.
- **Arts, Humanities and Social Sciences:** University has identified development studies as an umbrella area to house various relevant disciplines from social sciences and humanities. A BS degree in development studies with a provision of specialization in selected fields such as Women Development, Development Economics, and Sustainable Development etc.
- **Entrepreneurship:** keeping in view the emergence of entrepreneurship as an avenue to transform innovative ideas into products, processes and service, university will offer Entrepreneurship education integrated across the curricula (for science, arts and social sciences students) and a standalone degree. It will offer MS in Entrepreneurship.

Language and communication skills will be an integrated component with a focus on business communication, academic writing and effective presentation skills and needs based specialized courses will be offered for faculty and students. Similarly Cultural and Religious Studies will be offered as core and elective course.

Quantitative Scope of the University
Initially the university will offer course in the four disciplines i.e. BS in computer science, Maths, Physics and development studies. The first cohort will be initiated with 100 students. Eventually within the next four years, the number of students will gradually increase to 800. The university envisages to start its first intake in spring 2013.

Library Space planning process – initiating the journey
After careful analysis of the overall vision, mission and academic scope of the university, various teams were formulated to work on space planning tasks which included library, student support services, administration, curriculum and courses, campus life etc. A team comprising of four members including one research associate, one university planning personnel, one member from IT and one library professional were assembled to accomplish the task of library space planning. The process of space planning helps communicate the architects what is required to facilitate the learning outcomes and objectives of the university. It is a practice which is followed internationally.

The team went through a thorough process of reviewing literature, international trends and analyzed challenges and concerns related to university libraries in Pakistan. Focus group discussions and meeting were organized for brainstorming and sharing ideas related to library and its relationship with key learning outcomes. Several deliberations were made during the writing of space planning document. After completion of the first draft of document, it was sent to local, national and international librarians and LIS department chairs and professors for their input and feedback. A survey was also conducted through e-mail for collecting views about the physical size of the library, current usage patterns, trends and gate counts recommendation for foreseeable collection of hard resources. The feedback and input was incorporated and the working

document was finally sent to the architectural firm. Presentations were done by the library space plan development team to the architects for providing them with more clarity about the visions, conceptual importance of library space and its relationship with the academic programs.

Habib University Campus Library (HUCL) – Salient Features

University of Science, Technology and Society, is determined to establish a world class library seeking to provide variety of space for a range of activities and services. It will be the center of information and knowledge where people from all fields can come together, engage, learn and discover by utilizing the various facilities and resources offered. All the services offered at the library will be concerned and cohesive with learning, not mere "services". It will be a space for learning and training in information skills and literacy, a space for effective use of information resources housed in a variety of formats along with their associated technology requirements. The *vision* of library is

"Promoting and facilitating the culture of critical inquiry, research, scholarship and self directed lifelong learning"

The Campus Library (CL) will be a driving force in promoting the essential academic endeavor i.e. lifelong learning. This will serve as an innovative and vibrant space which will support university's mission of achieving excellence and advancement in teaching and research for the learning community.

The Campus Library (CL) will support University's vision and mission by:

- providing a stimulating, adaptable environment that facilitates the innovative and creative work of students, faculty members and research community
- enabling both formal and informal collaborations by connecting people who share research interests
- facilitating scholarly, research and academic activities for enhancing intellectual capacities of an individual and H.U's learning community
- anticipating and providing prompt information services, access and delivery
- keeping abreast with new developments and innovations in information provision
- ensuring the provision of quality service, consultation, and comprehensive reference services to students, faculty and other clients
- playing an active role in building and strengthening socio-cultural learning fabric of University

Clientele

The CL envisages serving diverse set of clients including its students and faculty members. In the long run, services will also be offered to the graduates of the university, retired staff members, researchers, librarians, scholars and university libraries within and outside education city.

Goals and Objectives

Provide state of the art, diverse and up-to-date Information Resources

Availability of appropriate, updated and relevant Information Sources and making it available to its users is one of the key objectives of the CL. These resources (print, non-print, online etc) coupled with high quality services will pave the way for carrying out

research and intellectual capacity enhancement of the users. The library will also serve as a warehouse of knowledge and intellectual resources of the University. It will also preserve the products and reports generated by its students and faculty members.

Promote Lifelong Learning

The library will keep abreast of new developments and innovations in information provision and research. It will design a numbers of programs for the professional development of its users specifically the faculty and staff of the University. The students presumably are, technology savvy, but may require support in becoming "information fluent" or "information literate"(Lorenzo and Dziuban 2006). Library will extend its support in achieving this purpose. Similarly, faculty will need support in polishing their IT and information searching skills. Furthermore, specialized support programs for academic writing, information searching, academic writing and citation will be developed and conducted by the library team. Since Campus Library will house a variety of resources (print, non print, electronic etc.), it will promote those practices amongst its own community, faculty and students which promote fair, responsible and appropriate use of resources, through counseling, guidance and demonstration.

CL will also extend its support to the quality of teaching, learning and research undertaken at the University. Furthermore, it will promote collaboration between scholars, faculty members, librarians, instructional technologists and information technology specialists to serve the core purpose of learning and research.

Providing services with Excellence

CL will ensure that the services delivered to students and staff of the University are of innovative and high quality. The services and programs offered will meet the current information requirements and anticipate the future needs in a rapidly changing information environment. CL aspires to continuously evolve and enrich its customer base, by attracting and engage diverse individuals, organizations and other resources bodies. It will also promote its services and achievements through a comprehensive marketing plan and communication strategies.

Create secure, welcoming and well designed spaces to accommodate variety of learning styles and technologies

It is fact that most of the users have their own personalized learning styles and will possess devices including laptops, cell phones, smart phones, iphones, iPods or emerging technologies of the time. CL will ensure that each user gets seamless and ubiquitous[2] access to digital information resources including library catalogues, online resources etc. It will provide individual and group learning zones, along with collaborative spaces for socialization.

Engage with a wider community and sustain strategic and intellectual partnerships

CL will form the soft image of the University, which is vital for undertaking a market lead in this competitive age. The Library aspires to become the diplomatic pillar of the university in establishing strategic and intellectual partnerships spread across a variety of domains ranging to long term research to active learning among other. It will establish formal and informal relationships with the national and international universities, research institutions or centers, local government bodies, personnel and other

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[2] being present everywhere at once wordnetweb.princeton.edu/perl/webwn

associations to enhance and exchange research and formulating consortiums for resource sharing and mobilization.

Establish Effective Management Information Systems (MIS) for quality service delivery

To provide efficient, effective and up to date quality services, it is essential to develop an effective management strategy which could facilitate the process. Library will create an effective and flexible administrative, financial and technological infrastructure for quality service delivery.

Recruit Enthusiastic Library Staff

Competent, pro-active, passionate and motivated staff will be recruited and retained for development and implementation of programs and services based on current and emerging needs. Library programs will also include development and implementation of ongoing professional capacity enhancement training workshops for the library staff.

Essential Services and facilities

Following is the list of essential services which will be provided in the library.

- Most of the students and faculty members will have laptops, therefore, power access points to charge batteries will be made available.
- The access to library services and resources will be made available 24 X 7
- Separate washrooms for male and female students / staff will be made available
- Seamless access to Video on demand service will be available
- Fiber optic cabling / links will be used to connect from main access points / servers etc.
- High speed internet connectivity (cable and wireless) will be made available 24 X 7

Brief details of Learning Spaces and Zones

The library will house a variety of spaces, zones and support service areas for facilitating learning and promoting scholarship. The library and its key functions and services will be spread over three floors. Details of some spaces are mentioned below:

- The main entrance after security clearance and entrance will house Information Commons. "Information Commons" is driven by sophisticated technology infrastructure, a conducive space infused with technological resources which bring technology, content and services in a physical space that results in an environment different from that of a physical library (Lippincott, 2006). Beagle (1999) describes information commons as "a cluster of network access points and associated IT tools situated in the context of physical, digital, human, and social resources organized in support of learning". In an information commons the underlying philosophy is to provide users with seamless work environment so that they may access, manage and produce information all at the same workstation. The information commons will be a one stop solution for electronic and print resources, tools and assistance. "Information Commons" will be one of the largest spaces to accommodate individual and small group study carrels and workstations. Approximately, a seating capacity of 200 will be allocated to information commons. Information commons will also provide desktop workstations, information KIOSKS for visitors and students to enable them to search catalogue, wireless access points and power access points for laptop

connectivity. The reference and research services librarians will be available in the information commons for assistance.

- **Silent reading zones** will be available for students who want to contemplate and work with full concentration on their products and assignments. These rooms will be sound proof and will contain a space including study carol with an access power point to use laptop.

- **Group discussion zones** with a seating of 8-10 students will be made available to promote group activities amongst students and faculty. This facility will be available for students to work in groups, share their presentations amongst each other for feedback. A big LCD screen will be placed on the wall for projection purpose.

- A **Book Bazaar** will be associated with the library entrance. Books related to a wide variety of subjects including literature, philosophy, religion, social sciences, technology etc. will be available for sale in this Bazaar. Urdu books will also be available in the Bazaar. It will be outsourced to various local agencies and distributors on a rental basis.

- **Administrative Zones** all the administrative offices, including acquisitions, technical processing sections etc. and will be housed in the basement.

- **Information Resources** as discussed earlier, a variety of information sources will be housed within the library including books related to the disciplines offered, electronic journals and databases including JSTOR, IEEE Explore, BPO, Econlit, ACM and IEEE Explore, JSTOR, PakSearch, VISTA, World Development Indicators (WDI), EBSCOHOST reference collections, publications of government and international organizations, videos etc.

- **Automated Circulation** hard resources including books will be housed mostly on first floor with an automated circulation system using RFID or the latest technology available at that time. To start with a collection of 25000 books will be made available to the learning community. The circulation system will be a part of Integrated Library Management System (ILMS) including integration of mobile phone applications for supporting users.

- **Support Services** Electronic Document Supply for patrons focusing on research will be made available through e-mail requests. If the requested documents are not available within existing resources, they will be ordered and made available from library partners. Support for academic writing will also be made available including onsite on-call technology support for not only trouble shooting hardware but for addressing software related concerns and queries.

- **Information Technology and Skills Training Labs** will have a responsibility for direct consultative support and training to students, staff, and faculty on information technology-based operations mainly in the areas of applications software, multimedia, database resources, and network support. The labs will be equipped with desktop computers or laptops for the hands-on use of students, with instructor station connected to LCD projector for the demonstration of online search techniques and for other information handling skill workshops.

- Like Campus Library which will be centrally located, **Auditorium** will also be associated with the library. The main function of the Auditorium will be to provide a location for hosting theatres, student presentations and seminars, inviting key researchers and renowned personalities for delivering seminar, book talks by authors etc. When not being used for these purposes the auditorium will be made available for use by other University related groups or University sponsored groups.   The

auditorium will be equipped with Instructor's station for demonstrating applications through projection equipment and sound facilities.

- ***Institutional Repositories*** A lot of research reports, project reports, thesis, dissertations and research assignments will be undertaken by the students and faculty members of the University. The university research centres will also generate a number of products. These resources will also be housed in the library.

Conclusion

The process of coming up with the space plan of Habib University Campus library was an exciting and challenging journey. One of the key learning it brought with itself was a shift in the perceptions about library itself, which in contemporary times considered to be an active living entity versus a dead space. Concepts like customer driven or customer centered library, library as a place for celebrating learning, a collaborative space, a flexible space aligned with user needs and learning styles were very new to the team especially for the librarian who was a part of the team. In fact, the architectural firm was astonished to see the vision and its relationship with all the processes and spaces. To them this was first time that any institution has thought to come up with a library space plan for orienting architects about what do they need and its rationale, which is an unusual practice in Pakistan. We wish and look forward to see a library of the 21st Century in 2013.

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