"Does the virtual campus demand a virtual library? Library leadership in response to Big Hairy Audacious Goals"

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DOES THE VIRTUAL CAMPUS DEMAND A VIRTUAL LIBRARY? LIBRARY LEADERSHIP RESPONSE TO BIG HAIRY AUDACIOUS GOALS

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Collins and Poras, in their *Built to Last: Successful Habits of Visionary Companies*, describe the importance of Big Hairy Audacious Goals (BHAGs) to innovative organizations. BHAG's stimulate bold progress, enable surpassing of competitors, and create daunting but also energizing and focused direction. The distance learning and e-commerce aspirations of many of the world's universities and colleges, working independently, in collaboration with other higher-education organizations, in partnership with the private sector, or through spin-off entrepreneurial structures have taken on the character of a BHAG.

This transformation in higher education in response to the perceived expansive markets for network learning and scholarship challenges the library to rethink its fundamental nature and role. The core library processes of information acquisition, synthesis, navigation and archiving must be increasingly focused on networked and interactive access to digital multimedia information at point of need and on the creative application of electronic technologies. The virtual campus demands rampant digital content creation, new strategies for information storage and management, more sophisticated search and query techniques, dependable and secure distribution and access systems, and new approaches to rights management.

This points to a library that will integrate a more market-based, customized and entrepreneurial approach to the packaging and delivery of information, that will become a center for research and development in the application of technology to learning, that will serve as an aggregator/publisher and learning/scholars portal for these new learning communities, that will advocate the interests of the virtual campus in national/global information policy debates, and that will advance its commitment to student literacy into the new distributed models of higher education.

The higher-education market, both its academic and corporate components, is viewed as a lucrative and expanding industry. Its electronically enhanced and distributed strategies are predicted to spread rapidly to meet the growing demand. E-learning is a "killer" application. Will traditional universities be replaced by consortia of public and private players that will own the dominant coursewares that will bypass the campus classroom? Diane Oblinger and Jill Kidwell in their May/June 2000 EDUCAUSE article highlight the rationale for institutional investment in distance learning: to expand access, to alleviate capacity constraints, to capitalize on emerging market opportunities, and to serve as a catalyst for transformation. These are powerful societal, financial and organizational incentives.

The library must understand and leverage the critical changes which are transforming the higher education environment. Consider these revolutions as examples. The personal computing, electronic and network revolutions are enabling more people to have desktop connectivity to expanding amounts of digital information. The cellular revolution, including wireless and satellite technologies, is enabling an expanding sense of freedom from place, of being able to access information whenever and wherever. The music-television/video games revolution is cultivating a generation of learners and consumers who demand a more graphical, integrated and interactive multimedia presentation of information. The security/authentication revolution is introducing new strategies and technologies for managing authorized access to information. The hypertext revolution is building powerful links among the millions of disparate files and enabling navigation among the intricacies of the new integrated if still chaotic Internet. The push revolution is shifting the nature of Web searching by narrow casting automatically to users through customized packaging and delivery of information.

The ATM/self-service revolution is encouraging a fundamental rethinking of user services as user-initiated and controlled activities are becoming more commonplace. The new majority student revolution is bringing to higher education individuals with family and work responsibilities and significant career advancement and lifelong learning needs. The intellectual property revolution is creating extraordinary conflict between the interests of information providers and information consumers as copyright is reshaped for digital and networked information. The information as commodity revolution is increasingly viewing information as articles of commerce and sources of profit rather than property held in common for societal good. The mutability revolution is elevating change and survival into organizational constants and encouraging hybrids or mutations in new structures. This random and selective list of revolutionary changes describes the environment in which the virtual campus is developing.

At the core of the advancement of electronic and distance learning are the expectations we bring to technology: more and better content, access and convenience, new capabilities, cost reduction, and growth in individual and organizational productivity. Higher education has advanced an effective network infrastructure: a common framework for interconnection, expanding connectivity, improving performance, horizontal integration, technological diversity, a skilled population, and high levels of knowledge creation and use. But the aspirations of the virtual campus will require improved connectivity, interoperability, reliability, capacity and performance, massive private sector investment, strategic public sector involvement, and demanding new applications.

As we build the technologies and telecommunications systems, we must understand and capitalize on the important advantages of the digital medium: accessibility, that is the ability to overcome the limitations of place; availability, that is the ability to overcome the limitations of time; searchability, this is the ability to probe a work in new ways; currency, that is the ability to make information available in a more timely way; researchability, that is the ability to ask new questions that could not be posed with a printed text; dynamism, that is the fluidity of the presentation and the ability to reshape the information;

interdisciplinarity, that is the ability to carry out research across multiple fields and to explore new approaches to a topic; collaborative nature, that is the ability to incorporate conversation and debate among scholars and student into the use of a work; multimedia aspects, that is the ability to integrate text, images, sound and video; linkability, that is the ability to use hypertext to link a work to related materials; interactivity, that is the ability of the user to not only read and view the information, but to also interact with the digital text and images and to use them in creative ways; procedural qualities, that is the ability of the computer to carry out tasks over and over again with high accuracy and efficiency, thus allowing the user to focus on the intellectual work; spatial capabilities, that is the ability to view objects in multiple dimensions and relationships, and the ability to navigate easily through files of information; and encyclopedic potential, that is the almost unlimited capacity of the computer to store and display massive volumes of information without the restrictions of the physical format. Each of these qualities presents an opportunity for improving and expanding the virtual campus.

There are several noteworthy parallels between the development of higher education on the Internet and the history of economic development. The rush of universities and companies to stake out Web space is similar to the land rushes in many countries in the nineteenth century seeking to populate expanding geography. The radical reductions in operating costs enabled by the railroad in comparable to the economic impact of e-commerce. The initial rampant fragmentation of utility industries like electricity and telephone and their eventual consolidation is very much like the online education entrepreneurs.

James Duderstadt, president emeritus at the University of Michigan, in a February 4, 2000 *Chronicle of Higher Education* article, builds on these ideas to outline the transformation of the 21st century university: universities that view their marketplace as the world, that serve a society of growing diversity, that focus more on the creative process, that will be far less specialized and far more integrated, that offer the cyberspace classroom as a commodity, that bifurcate into undergraduate and adult institutions, that establish a lifetime of interactions with students, that are community learning centers and knowledge networks open and available to all, and that carries out rigorous investigations and testing sites to improve teaching and scholarship.

These transformations of the future university highlight the key advantages of the Internet for distance learning: the interactivity that can be achieved, the flexibility that is enabled, the functionality that is enriched, and the costs of access to education that can be massively reduced. Universities become central to facilitating career shifts and employment transitions. Liberal arts colleges seek to prepare perpetual learners and graduate learning as a gateway to perpetual collaboration. Daily learning sustains teams of workers as higher and corporate education is integrated into the office and the factory. Network scholarship begins before college as universities expand relationships with the K-12 community. Public confidence increasingly demands routine and ongoing professional credentialing through continuing education and testing.

One of the results of these developments is the forging of new learning communities, which the Coalition for Networked Information in the U.S. describes as seeking "to promote cross fertilization of professionals across higher education who use networks and networked information resources to enrich the curriculum and to broaden student learning experiences." New learning communities focus on student productivity, student learning styles and student learning. They assume a wide matrix of learning time and space. They promote good practices, such as: student/faculty contact, cooperation among students, active learning, prompt feedback, high performance expectations, and a respect for diverse talents and ways of learning.

A recent e-College supplement to the *Chronicle of Higher Education* outlines the "Keys to success" for integrating the Internet in instruction: adopt a systems approach focusing on institutional readiness and concurrence; stress pedagogy and not technology; support the faculty; provide comprehensive online student services; provide state-of-the-art server technology; create a comprehensive marketing strategy; sustain research and product development; and plan for the long-term costs.

Successful distributed learning will require expanding content, enterprise software, sophisticated access, and a new philosophy of property rights, all areas where the library can partner with faculty. These needs have spawned an exploding educational commerce with layers of involvement, including destinations on the Internet that provide courses, educational portals or pipelines that provide organized access to education providers, and business-to-business sites that provide such things as course creation software or even library services to students.

The expanding base of experience is helping us to understand the primary obstacles to improving teaching and learning through technology: limited and uneven access, fragmented planning, underdeveloped support services, distrust and poor communication, the advancement of anybody/anytime/anywhere as a misleading educational banner, difficulty in faculty adoption, lack of information about good practice, too conservative approaches to the "fair use" of copyrighted material, inadequate faculty reward systems, and expectations that are set too high too soon.

As distance learning programs expand, there are many important policy issues to work through: alliances with the private sector, leadership appointments for faculty and administrators in educational commerce companies, the use of profit potential as the primary assessment tool, the creation of a star system/free agent professoriate, the sharing of revenue between faculty and university, conflicts in faculty commitment, and appropriate use of the university's name.

The academic library community has also recognized critical policy issues in the need for standards for distance learning library services. The Association of College and Research Libraries has prepared such guidelines which emphasize the need for equivalent services. Key components of these guidelines include: a philosophy that maintains that traditional on-campus library services cannot be stretched to meet the needs of distance learning students and faculty, management, sufficient budget support, professional staff, infrastructure, physical and electronic access to collections, informational and educational

services, and documentation to demonstrate that the guidelines are being addressed.

Libraries have responded with a wide range of content and information services for distance learners: electronic reference collections, online reference services, access to citation and full-text databases, electronic and physical delivery of materials, electronic course reserves, discipline home pages, and electronic instruction.

As universities and their libraries work together to advance the BHAG of the virtual campus, it is important to focus on critical information policy issues. These include intellectual property/copyright, Internet development, telecommunications programs to enable global access and availability, privacy, intellectual freedom, information technology research funding that also embraces electronically enhanced education, and information technology workforce development, for example. These policy areas will influence the ability of universities and libraries to advance e-commerce educational agendas.

As universities and libraries become more involved in serving a distributed and Internet-based learning community, it is important to refine the culture and processes of the organization. BHAGs demand a new physical, expertise and intellectual infrastructure. They require a new understanding of the geography, psychology and economics of innovation. And they encourage the adoption of entrepreneurial practices like business plans, competition and venture capital.

The virtual campus remains in all settings a Big Hairy Audacious Goal, a bold aspiration that will dismantle the university as we know it, and replace it with a more agile, aggressive and market-driven organization. Will the virtual library be an influential and essential component of this future academic environment? Bold leadership, economic savvy and entrepreneurial risk-taking will dictate success and survival.