

# Interprise Vision: Unleashing the Power of the Internet in Your Higher Education Enterprise

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## THE INTERNET CHALLENGE

Eleanor Roosevelt, the former first lady of the United States, stated that “the future belongs to those who believe in the beauty of their dreams.” Buried deep in the rich history and traditions of Higher Education, is the belief that its core mission is about reaching for dreams, preparing for the future, and challenging old assumptions. Providing leadership for the institutions that enable students, faculty, and communities to reach for these dreams, however, is becoming much more complex as we move forward into a new millennium.

The headline of the April 26, 1999, *USA Today*'s Money section sums up a key concern that is gripping college and university leaders as they step forward into the 21<sup>st</sup> century: “Failure to tangle with Web may Jeopardize CEOs.” The story boldly states that “CEOs are endangered if they lack an Internet vision,” and documents how organizational leaders in various industries are scrambling to strategically integrate the power of the Internet into their enterprise.

While this story focuses on business and industry, Higher Education leaders can relate to the pressure being felt by their peers outside of academia. Internet technologies are certainly impacting the Higher Education world, so much so that we have moved from the need for just quality technology management to the imperative of visionary leadership in the information age.

In these fast moving times, developing a vision for use of the Internet in the Higher Education enterprise is easier said than done. However, if we look at how the Internet is being used in business and industry, and relate that to its already rapid integration into education, we can point to some key implications for educational leaders striving to formulate an “Interprise Vision.” Moreover, we can begin the process of working together to bring the best of Internet technologies to bear to serve your institution in more powerful ways.

## INTERPRISE VISION IN BUSINESS AND INDUSTRY

In his 1996 book, *Creating Value in the Network Economy*, Don Tapscott stated:

*Today we are witnessing the early, turbulent days of a revolution as significant as any other in human history. A new medium of human communications is emerging, one that may*

*prove to surpass all previous revolutions—the printing press, the telephone, the television, the computer—in its impact on our economic and social life.*

Predictions like these that once rang with hyperbole are being answered by stunning facts about how Internet technologies are changing the way we work, play, and learn. It took only four years for the World Wide Web to be regularly used by more than a quarter of the U.S. population—a feat that took electricity 46 years, the telephone 35 years, the radio 22 years, the television 26 years, and the personal computer 16 years to achieve. When you consider that each of these technologies massively transformed industrialized nations over the span of their adoption, we can only ponder the impact of the short cycle of our embrace of the Web.

More than 100,000,000 people currently use the Internet and its network traffic doubles every 100 days. Approximately ten percent of the U.S. population made online purchases in 1998—more than one billion in travel bookings alone. The U.S. Commerce Department estimates that consumer e-commerce will reach \$300 billion and business-to-business e-commerce \$1.53 trillion by 2002. America Online has grown to more than 16 million members, increasing more than 4 million members in the last year.

### **Digital Drivers**

According to the book, The Digital Economy, this explosion of Internet technologies has changed the business and industry landscape. This change is driven by a number of factors, not the least of which is *Digitization*—the ability to digitally transmit and store audio, video, and data. Digitization leads to increasingly fluid data use and sharing over the Internet and Intranets. This ease of data transmission drives *Disintermediation*, the elimination of the “middleperson.” For example, when you can use the Internet to download your favorite movie directly to your TV, you will no longer need to go to your local video store. This driver puts companies closer to the consumer, but also increases the expectation for *immediacy*. We as consumers want products and services “on demand,” “just in time,” and “on our timeline.”

These changes in data capacities and consumer expectations have companies focusing more on *Workgroups* to effectively and easily share data, communicate, and make decisions to meet customer needs. And, as workgroups engage in these tasks, the technology supports *Mobility*—bringing the work to the people through the Web, e-mail, voicemail, and FAX. The capacity to disperse work to mobile employees is a complete shift from the industrial age where people moved to the cities because that was where the work was. The current trend is to outfit home offices for employees, an interesting digitally driven return to family. Finally, more often than not in large companies, these workgroups are linked *Globally*, connecting employees in multiple countries working toward common goals.

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## Enterprise Resource Planning

Business leaders faced with these new economic drivers and the explosive growth of technology are hard-pressed to think broadly about how to bring their technological pieces together to rise to the challenge of the modern age. Of course, the best of breed have taken on this challenge by improving current systems and engaging new strategies, serving customers and developing products in new and innovative ways.

For example, with advances in software and Internet distribution, recent years have seen the development of more comprehensive and integrated Enterprise Resource Planning (ERP) systems. ERP systems are the large administrative systems that handle finance, human resources, supply-chain management, decision support, and business intelligence. Elements of these systems have been adapted for and are being applied in Higher Education as well. In education, the recent emphasis has been on developing institutional HR, finance, and student systems that seamlessly share data and provide user-friendly interfaces for multiple audiences: administrators, faculty, staff, and students. Thanks to Internet technologies and more powerful databases, the promise of the integrated and easily accessible ERP systems is now being realized.

The goal of CRM is to integrate marketing, sales, and service with ERP systems to build a holistic customer relationship from "lead to loyalty."

## Customer Relationship Management

Additionally, Internet technologies and services (e.g., e-commerce) have spawned an aggressive push to fully develop and deploy a complement to ERP—the *Customer Relationship Management* (CRM) system. If you've ever met with a sales person, called an 800 number, or ordered merchandise on the Web, you have experienced pieces of CRM.

The goal of CRM is to integrate marketing, sales, and service with ERP systems to build a holistic customer relationship from "lead to loyalty." In other words, the system is so tightly connected that the business can meet customer needs seamlessly at any stage of the relationship with a wide array of options.

The standard integrated CRM package supports marketing, sales, and service on at least three levels: (1) in person, (2) on the telephone, and (3) over the Web. Using Internet technologies and robust databases to underpin both the ERP and CRM systems, businesses are able to provide an array of integrated services to today's consumer (e.g., a Web-enabled sales and service force, call centers, and Web stores). Ten of the top-ten consumer e-commerce sites and nine out of the top-ten business-to-business e-commerce sites use Oracle technology, making Oracle the leading company in the CRM arena.

In a relatively short period of time, we as consumers have come to expect CRM. At the very least, we expect our preferred airline to have a Web site where we can peruse and reserve flights online; an 800 number we can call if we have more detailed questions; and a counter in the airport staffed by knowledgeable agents who can answer our questions. If we have problems or questions about

our reservations for our upcoming vacation, we expect to be able to use the Web, phone the airline's call center, or visit their counter in person for help—whichever mode is most convenient to us at our moment of need.

Finally, because we indicated in our customer profile that we wanted to be notified about the airline's frequent flyer program, we expect to receive e-mail informing us about new promotions and free tickets for first-time enrollees. All of these interactions should be seamlessly supported by an integrated data system that keeps our information on file so we don't have to go through a customer history with each and every interaction.

In the near future, net-to-phone discussions, one-touch video conferencing, and digital personal service agents will further enhance and become standard elements of CRM. Each new innovation will further enable business and industry to build positive, long-term relationships with their customers. If we look back only five years, we can see that the use of the Internet to enable ERP and CRM has certainly changed the ways businesses are operating and, more so, what we as consumers expect.

### **INTERPRISE VISION IN HIGHER EDUCATION**

Higher Education is being influenced by and quickly embracing Internet technologies as well. In the administrative and student service areas, almost every RFP for major administrative systems released over the last three years has required that key functions are "Web-enabled." In instruction, Kenneth Green's 1998 Campus Computing Survey reveals that more than 44 percent of higher education classes use e-mail, 33 percent require Internet research, and the average faculty member or student accesses the Internet at least once a day. Since 1994, the use of these and other tools to enable online learning has taken the distance learning field by storm. Every day we read of another "cyber" college or consortium of colleges that are "going virtual" to provide on-demand, synchronous and asynchronous online instruction.

Given the resistance of Higher Education to prior technologies ranging from overheads to CD-Roms, these developments are staggering. They are not as surprising, however, when one considers how effectively Internet technologies connect students and faculty to educational content, rich context, and to each other—not to mention how readily they enable better service and support. In Dr. K. Patricia Cross' 1999 monograph, Learning is About Making Connections, she points out that research on learning from multiple fields demonstrates that quality education is about helping students make these more meaningful connections with content and with each other—neurological synaptic connections, cognitive schematic connections, socially constructed connections, and experiential connections. In short, Internet tools have succeeded precisely because they have more quickly and easily made the connection to the core mission of Higher Education than had their technological predecessors.

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The challenge now is to think holistically about Higher Education administrative systems, student services, and learning options. Indeed, Internet technologies can improve each of these areas individually. However, as has been seen in other sectors, there is greater promise in using the Internet to bring together long-separated processes and people to improve higher learning. A basic framework for exploring the Internet in your educational enterprise is to think about how this technology can help operations, services, and learning. By ensuring that your institution is developing an integrated infrastructure in each of these areas, you are positioning your college or university to get the most out of the technology infrastructure you want to support your core organizational mission, vision, and goals.

### **Interprise Operations**

To fully develop Interprise Operations, you must build your infrastructure on state-of-the-art core technology. Oracle 8i is the only database available that is built specifically for Internet computing and will allow you to better integrate your systems. In the past four years, Oracle has focused all product development on simplifying technology for the Internet. Oracle 8i and the Oracle Single Platform Server are a foundation for clean, efficient computing. On this foundation, an institution can work with Oracle to bring together a robust set of applications including: human resources, financial, learning, student, grants management, and alumni development.

Each of Oracle's applications are not simply "Web-enabled," but truly "Internet native." They are always distributed via a Java-enabled browser, as opposed to an expensive, hard-to-upgrade, and expensive-to-maintain client-server infrastructure. Moreover, because the applications are based on Internet distribution, you have additional options for your operational infrastructure, including Oracle's Business Online (BOL). If BOL makes sense for your institution, all server hardware, software, and maintenance can be managed by Oracle in a data center, significantly reducing the cost to your institution for these functions.

### **Interprise Services**

Once this operational infrastructure is in place, you can begin to consider how to use these and other tools to create Interprise Services. With the right Internet infrastructure, a college or university is able to more quickly create a service infrastructure that includes Web, phone, and personal options for general information, recruiting, admissions, registration, orientation, support services, bookstore, athletics, career services, and work study. Taking it one step further, you can help develop custom student services and portal strategies that link to the organizational database, enabling better service and support to the diverse students coming through your institution.

## **Interprise Learning**

With the foundation of an Internet-based operations and service architecture, Interprise Learning can reach greater heights. As previously stated, the reason the Internet and its associated technologies have inspired such unprecedented adoption is that they quickly, easily, and more scalably increase an educator's capacity to help students make connections to content, context, and community—resulting in more powerful learning experiences overall. Improved communication, collaboration, presentation, production, and research are only a few of the core benefits. Student services and faculty—particularly part-time faculty—can work together more closely as they use integrated data systems and applications to wrap powerful support around each student. Also, instructors are enabled to take advantage of the latest technology through Oracle's learning solutions to enable everything from faculty-driven to student-driven, in-class to in-home learning.

This Interprise operations, service, and learning infrastructure leads to much the same hybrid Customer Relationship Model as is being seen in business and industry. In Higher Education it may be better termed Learner Relationship Management (LRM). Notwithstanding the limitations of any business metaphor in education—the process of learning being far more complex than a simple business transaction—the LRM concept could move us toward a more integrated educational infrastructure that supports robust interactions with students across multiple modalities.

Clearly, students, faculty, staff, and communities are beginning to expect the outcomes this kind of Interprise Vision provides. They expect to have a variety of options—Web, phone, or in-person—to check out programs and services; apply for admission; register for classes; take courses; reference syllabi ; check grades; communicate with faculty, staff, or peers; and access state-of-the art research materials. Moreover, they expect all of these services to be supported by an integrated data system that shares information seamlessly and securely.

**With these expectations comes the realization for today's educational leaders that developing, fostering, and maintaining a thriving academic community in the modern age also means that they, too, will have to develop an Interprise Vision.**

## **IMPLICATIONS OF INTERPRISE VISION IN HIGHER EDUCATION**

With these increased expectations comes the realization for today's educational leaders that developing, fostering, and maintaining a thriving academic community in the modern age also means that they, too, will have to develop an Interprise Vision. Our intent is that the result of our collaborative endeavors will be technology infrastructures that transparently and seamlessly support the important mission and goals of Higher Education, allowing the rich interactions between educators and students to take precedence as they develop relationships with students from "leads to lifelong learners." As we move forward with efforts to unleash the power of the Internet in the Higher Education enterprise, we must consider key challenges, constituencies, and questions.

## **Key Challenges**

First, Interprise vision is sweeping across the business world because it helps companies meet key challenges while achieving core mission. But, will it do the same for Higher Education? We argue that if Oracle can work closely with your institution, it can. Interprise Vision can help colleges and universities develop the kind of learning infrastructure that provides new options beyond the traditional time-bound, place-bound, role-bound, and bureaucracy-bound models of education. Internally, the technology transitions that ravage your organization will be reduced because of Oracle's common Internet-based distribution and ease of installation and upgrading.

Additionally, your institution will have the ability to handle the flood of new students that are slated to come into Higher Education over the next ten years—as well as the increasing number of returning and workforce development students. Also, as your college and university faculty and staff retire, your new employees will have a state-of-the-art service and learning infrastructure to walk into, not to mention new options for accessing information from home or on the road. Furthermore, your institution will be well positioned to partner with business and industry as they continue to advance further with their use of Internet technologies. And, as more than 44 states and the Federal Government call for more accountability data, your institution will be able to use Oracle tools to quickly and easily gather process and outcomes data for use in internal decision making or external reporting.

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## **Key Constituents**

If we look at the likely results and expectations of Interprise Vision in Higher Education, we can develop a good picture of what students, faculty, and administration will be seeing in the coming years. Students will have robust on- and off-campus access to college services and learning programs. They will have multiple modalities of communication and interaction with the institution, including Web, phone, and in-person. Moreover, students will have more customized learning and service selections because they will be more fully supported by an infrastructure that gives them access to more options. Ultimately, students will have choices galore. As more for-profit and aggressive colleges and universities continue to move into the online learning market, students will have the ability to choose from a wider array of education providers. Staying close to the learner and diversifying the learning options in this environment is an imperative.

Faculty, too, will have robust on- and off-campus access to college services and learning programs. Instructors will have a range of new learning tools with which to teach students. This does not mean that teaching and learning will be better necessarily—the Web clearly has the potential to make terrible instruction that much more available. What this does mean is that the instructional tool kit will certainly be more complete. Faculty will have closer connections with

student services because of the linking of academic and administrative systems which enables greater collaboration and support. Of course, research, reference material, and student data will be that much more readily available. And key grant projects will be much more manageable, enabling grant research to take precedence over grant management. Finally, Interprise Vision will help faculty broaden their academic community to better serve local, regional, national, and international discipline and instructional groups.

An Interprise Vision means that administration and support staff will also have robust on- and off-campus access to college services and learning programs. They will have a database and application suite that enables them to serve their institutions like never before. They will have powerful data systems to improve and track student, financial, and operational processes and outcomes. Their applications will be easily adaptable to meet the rapid changes in today's business processes and procedures. But, they, too, will be facing fierce competition. And, just as business and industry are discovering, without nimble ERP and CRM systems, they will be hard-pressed to continue to meet the changing needs of their learners and communities.

### **Key Questions**

The continued expansion of Internet technologies is a given. Higher bandwidth, voice automation, and on-demand video will soon join these powerful innovations. As these and other technologies continue to change the way we work, play, and learn, Higher Education leaders must ask themselves these hard questions: (1) Is my institution taking advantage of or disparately dabbling in Interprise Vision? (2) How can my institution use Interprise Vision to serve students, faculty, administration, alumni, and community better? and (3) Who can help me take on this challenge?

These are the sorts of questions that drove the *USA Today* story about CEOs grappling with the Internet. These are the sorts of questions that have driven the top companies using the Internet today to work with Oracle. These are the sorts of questions that drive Oracle to think of new and innovative ways to work with Higher Education as they strive to meet the challenge of leadership and learning in the information age.

We agree that “the future belongs to those who believe in the beauty of their dreams.” And we are bringing our world-class core technology, applications, consulting, education, and services to Higher Education to help you build the infrastructures of tomorrow—the infrastructures that will help academic communities prepare for the future, challenge old assumptions, and dream.

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