Prepare Your Campus for E-Business

Tips for crafting a successful strategy

by Jill Kidwell, John Mattie, and Michael Sousa

From the boardroom to the executive suite to the music department, campus administrators are engaging in e-business initiatives. Enticed by profitable new markets, greater student satisfaction, and potential cost savings, vendors are capitalizing on the growing sense of urgency gripping campuses to offer technology-enabled teaching tools, put courses online, and provide Web portals for students, faculty, and administrators. The pressure to do something increases each time a new joint venture is announced or a college receives a sales pitch from a new vendor. While it is tempting simply to sign one of the many contracts sitting on your desk, it is important to investigate first. Even for those who have taken the plunge and are pursuing one or more strategies for doing e-business, due diligence will provide real dividends. These initiatives are new ventures. Often there are no well-established courses to follow. Yet in spite of the novelty of your e-business strategy, you can manage the risks. Whether your e-business initiative is an electronic commerce application, Web-enabled student services, or distance education, your institution will benefit by thinking through the drivers, implications, framework for evolving your e-business strategy, strategies for the future, and lessons learned.

E-Business Drivers

Will e-business applications become widespread in higher education? While these applications are being used primarily among early adopters, it is clear that e-business will garner more than ephemeral attention. According to some, the adoption of such applications in higher education will become pervasive as students and prospective students look to these applications for convenience and institutions seek to expand markets, lower costs, and provide improved customer service. Specifically, what's driving higher education institutions to develop e-business strategies include:

- Rising popularity of the Internet
- Demanding customers and unrelenting expectations for expedited services
- Continuing cost constraints
- Growing opportunities for new revenues

INTERNET POPULARITY

The Internet is fast approaching ubiquitous access, especially among college students because of increasing computer ownership and common use. Specifically, 55 percent of college students own a computer, and more than 92 percent have access to one. Furthermore, many of these computer users are active Internet users. Among four-year college students, 85.4 percent use e-mail and 86.6 percent use the Internet.

Current obstacles are expected to dissipate in the future. The biggest complaint today about the Internet—its slowness if connected through a modem—will eventually disappear as bandwidth, particularly to "the last mile," becomes more abundant. Cable modems, ATM (asynchronous transfer mode), xDSL, frame relay, low-earth-orbiting satellites, and an advanced Internet will make this possible.

DEMANDS AND EXPECTATIONS

Today's students are technologically savvy and proficient. They have grown accustomed to automated teller machines, toll-free numbers, next-day delivery, and the Internet. They can get books, CDs, and even term papers (much to the chagrin of educators) via the World Wide Web and increasingly expect the same type of instant fulfillment of needs and wants. Queues on campus—for course registration, feedback from advisors, financial aid decisions, degree audits, and other services—will be met with disdain and vocal dissatisfaction.

Similarly, because of services they receive from Web-based companies, students—and staff and faculty—increasingly will expect services to be available on a 24/7 basis and to be personalized for their needs and interests. As in other industries, only the Web and associated e-business applications can provide this function for colleges and universities. For example, Amazon.com remembers book preferences and provides suggestions to its customers. Can a student, in the process of registering online, receive suggestions based on past preferences or other variables such as meeting time, professor, learning style, academic area, number of credits, prerequisites, impact on degree completion, instructor and course rating by previous students, preparedness for other classes, or even cost of textbooks? Can a Web-based application recall a principle investigator's area of interest and provide customized information and services accordingly?

Colleges and universities need to understand the function of best-in-class portals (gateways to the Web) and services providers from other industries to anticipate student, faculty, and staff expectations. To research only the current services and plans available at other institutions is to think too little. To mandate across-the-board cutbacks, today, instead of cutbacks institutions are rapidly and strategically reallocating funds. Resources are going toward enterprise systems implementations, expanded technology use in the classroom, invest-

COST CONSTRAINTS

Even with favorable demographics and unique economic prosperity (and record tax receipts), cost pressures continue on college and university campuses. In the early 1990s, colleges faced deficits that mandated across-the-board cutbacks. Today, instead of cutbacks institutions are rapidly and strategically reallocating funds. Resources are going toward enterprise systems implementations, expanded technology use in the classroom, invest-

20 EDUCAUSE QUARTERLY Number 2 2000

21 EDUCAUSE QUARTERLY Number 2 2000
processes to enable reinvestment in higher priority initiatives. The quest to do more with less will continue as colleges and universities can aggressively pursue strategic opportunities in the midst of increasing competition. To accomplish these objectives, institutions will look to e-business applications to reduce administrative costs, especially in business-to-business services, by reducing manual activities.

NEW REVENUE OPPORTUNITIES

Universities have diversified revenue streams including research grants and contracts (with an increasing percentage from the corporate sector), fund-raising receipts, advertising, and continuing education students. Each of these areas requires e-business approaches to generate new—eventually to retain—current revenues.

Technology-based education—e-learning—is growing faster than classroom education, which is leading to a dramatic shift. For example, according to International Data Corporation (IDC), technology-based information technology (IT) training is forecasted to hit 55 percent of U.S. training by 2002, up from 21 percent in 1998, thereby displacing classroom training as the method of choice for delivering IT-related education and training. Indeed the IT industry is an early adopter of electronic education and training. However, as colleges and universities seek to increase—or even just retain—continuing education revenues, their success will depend on integrating technology-based approaches.

E-Implications

The case for adopting an e-business strategy is compelling and the urgency for doing so will grow. But how will this change in service delivery affect colleges and universities in the short term? We have identified four immediate implications:

• In all areas, multiple vendors with various products will increase confusion as institutions decide whether to “build or buy” and “compete or collaborate.”
• The Internet will affect process, organization, and policy.
• The Internet will raise new tax, legal, and security issues.
• Integrating information management will be a crucial challenge for institutions to fully leverage the benefits of doing business electronically.

MORE OPTIONS, MORE CONFUSION

Historically, colleges and universities assumed responsibilities for the strategically relevant activities in which an organization engages, how these components interact, and how they contribute to competitive advantage. The influx of e-business vendors in higher education across various processes will present choices and complexity. Where do core competencies exist? Should an institution build or buy, compete or collaborate? Table 1 illustrates a sample of process areas and new entrants that are providing e-business applications and services. Some of the vendors and applications listed provide colleges and universities with off-the-shelf solutions, others are potential competitors or strategic partners. Researching this ever-changing list of vendors and applications comparing solutions, selecting the right approach, implementing solutions, managing these relationships, and maintaining institution-wide technology standards will become the key to “build or buy” and “compete or collaborate.”

PROCESS, ORGANIZATION, AND POLICY

The promises of reengineering remain unrealized for many institutions. In many instances, large, expensive programs designed to institute change have been only partially implemented, often with less-than-expected results. As a result, it is likely that few fret the passing of the reengineering trend. Many institutions, however, have replaced these processes improvement projects with still larger (and order-of-magnitude more expensive) enterprise systems implementations. These implementations are often referred to as ERP, for their enterprise resource planning approach to integrating student, financial, and human resource systems. In this context, the less-than-warm reception the e-business projects or initiatives are receiving may be partially caused by fatigue from these previous efforts. Conversely, others may be eager to embrace an e-business strategy as the vehicle for organizational restructuring with more tangible and expedient results. Implementing e-business applications, similar to the reengineering processes and ERP projects, will require process redesign, organizational restructuring and alignment, new job descriptions, and reviewed and revised policies. As a result, these projects are likely to be met with similar skepticism and resistance. The enabler may have changed—in this case, Internet-based applications—but these projects will require institutions to continue the difficult and often arduous restructuring efforts. However, those institutions that have realized significant progress from previous efforts will be able to leverage these initiatives and should experience a higher probability of success.

Academic policies also will require reexamination. Policies and processes related to articulation, faculty evaluation, student development, and assessment of student outcomes, among many others, will require revision and review by institutions that expect to succeed in delivering online courses, programs, and supporting services.

TAX, LEGAL, AND SECURITY ISSUES

While there are similarities with previous institutional improvement efforts, new challenges exist as well. Implementing e-business applications will require institutions to examine tax, legal, and security issues. In the area of tax and legal issues, institutions will be forced to examine intellectual property issues, review Internet-based revenues for unrelated business income tax (UBIT), and document legal and audit trails. Security issues, while examined in ERP implementations, will be more important as vendors and other constituents will have expanded access to institutional data and systems requiring firewalls, authentication, encryption, confidentiality and integrity controls, and enhanced management of security breaches. These issues raise risk management challenges to the top of the agenda for senior management at all colleges and universities.

INFORMATION MANAGEMENT

Colleges and universities, like other organizations, have struggled to integrate information management. Replacing formerly disparate systems and applications to improve decision-making capabilities and minimize shadow systems and resultant redundant data entry and maintenance was the key impetus for many institutions to implement ERP solutions. The promises of reengineering remain unrealized for many institutions. In many instances, large, expensive programs designed to institute change have been only partially implemented, often with less-than-expected results. As a result, it is likely that few fret the passing of the reengineering trend. Many institutions, however, have replaced these process improvement projects with still larger (and order-of-magnitude more expensive) enterprise systems implementations. These implementations are often referred to as ERP, for their enterprise resource planning approach to integrating student, financial, and human resource systems. In this context, the less-than-warm reception the e-business projects or initiatives are receiving may be partially caused by fatigue from these previous efforts. Conversely, others may be eager to embrace an e-business strategy as the vehicle for organizational restructuring with more tangible and expedient results. Implementing e-business applications, similar to the reengineering processes and ERP projects, will require process redesign, organizational restructuring and alignment, new job descriptions, and reviewed and revised policies. As a result, these projects are likely to be met with similar skepticism and resistance. The enabler may have changed—in this case, Internet-based applications—but these projects will require institutions to continue the difficult and often arduous restructuring efforts. However, those institutions that have realized significant progress from previous efforts will be able to leverage these initiatives and should experience a higher probability of success.

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Table 1

<table>
<thead>
<tr>
<th>Process Area</th>
<th>Sample of E-Business Vendors</th>
</tr>
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<tbody>
<tr>
<td>Online admission applications</td>
<td>Embark, CollegeNet, XAP</td>
</tr>
<tr>
<td>Online student services</td>
<td>Campus Pipeline, YouthStream's MyBytes.com, Jenab.com</td>
</tr>
<tr>
<td>Online textbooks</td>
<td>VarsityBooks.com, Textbooks.com, ecampus.com, efollet.com</td>
</tr>
<tr>
<td>Online procurement</td>
<td>CommerceOne, Ariba</td>
</tr>
<tr>
<td>Online alumni communities, contributions, and merchandising</td>
<td>Harris Publications's Alumniconnections.com</td>
</tr>
<tr>
<td>Tools and systems for online delivery and management</td>
<td>Blackboard Inc, Centra, Convene, eCollege.com, WebCT, Eduprise.com</td>
</tr>
<tr>
<td>Online content distributors</td>
<td>Caliber, UNext.com, Pensare</td>
</tr>
<tr>
<td>Learning portals</td>
<td>Asymetrix's click2learn.com, Hungry Minds, ZIF-Davis' Smartcorner.com, Blackboard Inc's Blackboard.com</td>
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</tbody>
</table>
integration projects that link companies’ Web sites to administrative systems. This category of growth is expected to skyrocket in the United States from $25 billion in 1998 to $104 billion in 2003, according to a study by Input, a market research company. The trend is expected to apply to higher education as well.

**Evolution of an E-Business Strategy**

At PricewaterhouseCoopers we have identified four evolutionary stages for adopting an e-business strategy that are relevant for all industries, including higher education. These four stages include presence, integration, transformation, and convergence.

**PRESENCE**

The first step to doing business on the Internet is to establish a presence there that represents your institution. Often called “electronic brochureware,” this presence usually describes your institution’s basic programs, courses, services, and contact information. Examples include online purchasing procedures, campus information catalogs, syllabi, and course information. At this stage risks are low, and so are the likely bottom-line benefits. This is an essential stage nonetheless for experimenting, learning, and building commitment. Virtually all colleges and universities have reached this first stage because it is relatively simple to create and maintain a read-only file of programs, courses, and faculty.

**INTEGRATION**

In the integration stage, an institution connects with its wider network of suppliers and students by extending its reach beyond institutional walls. At this stage your institution will conduct business through the Web, such as allowing students to register for courses online. In addition, you will use business-to-business links with procurement vendors, the Department of Education for financial aid eligibility verification, funding agencies, research subcontractors, benefit administration vendors, and financial institutions.

There are opportunities at this stage to realize efficiency and revolutionize customer service. However, there are challenges in integrating Web-based applications with legacy administrative information systems, providing prompt customer service, competing with nimble new entrants, and allocating resources to significant IT investments. Also, tax, legal, risk management, and audit issues loom larger as you begin to conduct real business online.

Typically in this stage, colleges and universities will:
- Begin offering online courses.
- The institution will experiment with technology-enabled and -mediated courses to test and improve processes for developing and delivering online courses. The objectives will be to generate additional revenues, stay ahead of competitors, and gain feedback in an operational setting to test assumptions and help refine new process, organization, and technology designs prior to full-scale implementation.
- Provide online student services. Students will be able to go online to apply for admissions and financial aid, register for courses, monitor progress, check financial status and pay bills, select housing options, and e-mail faculty. Many institutions use packaged applications such as Campus Pipeline, MyByUtes.com, or vendor-provided ERP system enhancements.
- Provide online alumni and development services. Web-based excellence by selling services, rebundling products and services, and develop new entry barriers by developing superior knowledge of customer needs and wants. There are challenges because margins are squeezed and new entrants increase competition. And identifying and partnering with the best vendors may be impeded ultimately if the best vendors form exclusive arrangements with other institutions, leaving some institutions to choose among less-than-optimal partners.

At this stage, colleges and universities will usually:
- Form strategic partnerships by partnering with vendors, institutions can complement their expertise and resources. While some institutions will develop and provide online services themselves, most will select a partner for online procurement, student services, research administration, advancement, and distance learning. This disengagement of the value chain will be met with some resistance by various stakeholders, but the results—reduced costs, improved services, and heightened focus on core competencies—will prove beneficial to the higher education industry generally and to individual colleges and universities specifically. Narrowing margins and increasing competition will force even the reluctant institutions to outsource many noncore processes.
- Deliver technology-mediated education. A core competency in the technology-mediated education sector will definitely be an advantage. In many instances distance education courses and programs are developed and delivered by a separate organization. In some cases it is a for-profit entity—a university com-subsidiary—similar to what New York University, Columbia University, and the University of Nebraska have already done. These organizations are free from the traditional institution’s confines but support the institutionwide mission. Avant-garde options will allow stu-dents, not colleges, to determine the convenient time, place, and pace for educa-tion, which is ideal for lifelong learning. Students will be able to choose modes from a variety of providers, thereby enhancing consumer choice but intensifying competition.

**TRANSFORMATION**

The final stage, convergence, is about more than simply integrating the industries of consumer electronics, information technology, telecommunications, and e-business. Convergence blurs market boundaries. For example, colleges and universities will soon compete with training providers, publishers, software ven-dors, and entertainment providers as these industries converge into the learn-ing industry. Certainly there are opportunities to enter new markets with language, export skills (for example, superior cus-tomer skills), and exploit strong brand name, but there are challenges regarding how to maintain entry barriers for core businesses (that is, teaching and research) and where to focus the brand name. Colleges and universities will find
In developing this strategic plan for e-business, you mustn't just evaluate the value chain and redefine the roles of colleges and universities. As institutions successfully navigate the stages of e-business—from presence to integration to transformation and finally to convergence—substantial opportunities will become available for students, faculty, staff, alumni, and other constituents. Benefits will include enhanced and expedited services, reduced cycle time, increased process efficiencies, improved decision making, expanded access for students, alleviated capacity constraints, personalized and customized marketing opportunities, and expanded market opportunities. However, threats will loom, as failure to incorporate the functions now available online will negate your strategy. E-business strategy is more than just determining target markets and developing business plans that describe the return on investment (ROI). It is a comprehensive view of your institution’s e-business goals, expected outcomes, rationale, branding, marketing, and launch strategy. Sample diagnostic questions to assess readiness include:

- Do you have an e-business strategy?
- Do key stakeholders buy into the plan?
- Have you clearly defined the goal of your strategy?
- Do you have a robust implementation plan for this strategy, including key milestones?
- Have you created a feedback loop and a time at which you will review the results and reevaluate your strategy?

E-business strategy is more than a technology initiative; its impact will be pervasive and should be viewed as a mission-critical undertaking. Brand issues are paramount. Accordingly, sponsorship for an e-business project should emanate from the university president, provost, or executive vice president’s office to ensure that sufficient importance and institutionwide perspective is embedded in this endeavor.

Business units take ownership of strategies, and success will be reflected in how collaboration, coordination, and development are priorities. In colleges and universities it is likely that various offices have spoken to vendors about alluring applications. While initiatives at the business unit level will evolve, integrated and unrelenting expectations for excellence is embedded in the plan. E-business objectives should be linked to critical activity. Instituting the technology initiative; its impact will be pervasive and should be viewed as a mission-critical undertaking. Brand issues are paramount. Accordingly, sponsorship for an e-business project should emanate from the university president, provost, or executive vice president’s office to ensure that sufficient importance and institutionwide perspective is embedded in this endeavor.

E-University

Is your campus ready for e-business? The eight sets of questions below can serve as an initial gauge of e-business readiness. Answer the questions that correspond with your e-business strategies. Determine the causes of the identified deficiencies.

1. E-Business Strategy: E-business strategy is more than just determining target markets and developing business plans that describe the return on investment (ROI). It is a comprehensive view of your institution’s e-business goals, expected outcomes, rationale, branding, marketing, and launch strategy. Sample diagnostic questions to assess readiness include:

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- Have you created a feedback loop and a time at which you will review the results and reevaluate your strategy?

Reference:

References


Have you clearly defined the goal of your strategy?
- Have you developed a plan and timetable to address deficiencies based on institutionwide objectives and internal capabilities?
- Have you developed a funding plan? Do you have a plan to recoup up-front investment?
- Have you developed your strategy's ROI? Have you defined success and set clear milestones to gauge progress? Have you considered an exit strategy should market conditions change?
Have you developed a brand for your institution and a corresponding pro-
cess to maintain, protect, and enhance this key asset?

Have you developed a pro-
motional campaign for your
Web site?

Have you adequately iden-
tified the downside risks?
Do you have a plan to
address them?

3) Organization and
Capabilities
There is far more to e-
business than creating a
Web site and online processes.
Each unit that implements e-
business requires dramatic
change. Often referred to as
“e-engineering,” e-business
means that organizational
structures change, new posi-
tions are created, roles and
responsibilities are dramat-
cally altered, and new ven-
tures are launched. For many
institutions, requisite skills are
in short supply and they turn to
to outsourcing arrangements
to accelerate the transition to
a new way of doing business.

Diagnostic questions to
assess readiness include:
✓ Have you clearly identified
business leaders and
administrators who are
responsible for e-business?
✓ Are the appropriate people
in the organization respon-
sible for e-commerce?
✓ Have you appointed Web
designers responsible for
the look and feel of your
Internet applications?
✓ Have you communicated
e-business roles and
responsibilities across
the entire institution?
✓ Can you be entrepreneurial?
Can you move rapidly
enough to achieve your
goals on time?
✓ Have you appointed Web
architects whose roles are
to turn business require-
ments into a system design
with capabilities for online
transaction processing (for
students, principal investi-
gators, alumni, and ven-
dors) and related services?
✓ Do the organization
have access to appropri-
ately qualified resources?
✓ Do you have a plan to
retrain staff?
✓ Have you rethought human
resources performance and
reward systems?

3) Delivery and
Operations
The IT support area in your
organization will go through its
own transformation as it
supports e-business initia-
tives. Not only will the roles
of your IT professionals
change, but new organiza-
tions will develop to take on
new quasi-IT tasks such as
converting content online.
This area includes the following topics: backup and continuity planning,
content development and man-
gement, service provider
management, systems failure
prevention, systems mainte-
nance. Web site development
and implementation, database
administration, interfaces and
message coordination, net-
work management, and serv-
ience coordination. Diagnostic questions to
assess readiness include:
✓ Are there processes for
Web content management,
publication, evaluation, and
quality assurance?
✓ Have you defined uniform
Web design principles to
support your Web site?
✓ Have they been communi-
cated to all schools, divi-
sions, and departments?
✓ Do you have a backup sys-
 tem to allow access to
your Web site should the
primary system fail?
✓ Has your institution estab-
lshed lode balancing and
cost error tolerance on a
multi-site architecture?

4) Processes
Yes, e-business means e-
engineering processes. You
cannot simply put your exist-
ing forms online. To take full
advantage of the power of
the underlying processes must
be completely rethinked and
dramatically changed. You’ll
need links between existing
systems as well as new support
desks. Don’t forget to plan and
implement upgrades.

And, at the same time, put
proper controls in place.
Diagnostic questions to
assess readiness include:
✓ If you plan to offer full
programs (degree or non-
degree) via the Internet,
do you have the concomi-
tant supporting processes
in place?
✓ Have your institution devel-
oped Web-based applica-
tions so services and
transactions can occur
online (for example, online
applications, online regis-
tration, and online alumni
pledges)? If so, have you
documented how to change
the process?
✓ Have you linked these new
processes to existing
systems? Do these
Internet-based applications
feed data directly into your
core administration (for
example, student, financial,
human resources, or research)
without manual intervention?
✓ Do you have online links
with suppliers for func-
tions such as ordering
and services, remit-
ting payment, and submit-
ting proposals or quotes?
✓ Do you use offline meth-
ods to promote your
Web site?
✓ Do you offer a 24/7 help
line to Web site users
with technical problems
encountered while using your
Web-based applications?

5) Systems and
Technology
E-business depends on ade-
quate systems and technology
infrastructure to support your
objectives. Systems and tech-
nology include back-end sys-
tems, front-end systems, mid-
dleware, and transaction
processing as well as an
overarching IT strategic plan
to update capabilities contin-
uously to meet e-business
requirements.

Diagnostic questions to
assess readiness include:
✓ Does your institution use
accepted Internet stan-
dards for both internal
and external systems?
✓ Have you assessed your IT
technical resources for e-
business?
✓ Has your institution imple-
mented automated systems
to check the consistency
and quality of Web sites?
✓ Are the technologies sup-
porting e-commerce suit-
able and scalable?
✓ Are the current electronic
delivery channels appro-
appropriate for user
profiles?
✓ Is the organization able to
respond and capitalize on
rapid changes in underly-
ing technologies and deliv-
ery channels?
✓ Are the e-commerce ser-
vices implemented to min-
imize additional invest-
ment and duplicated
business logic?

6) Performance
Management
You will need to establish
and monitor tailored criteria
to evaluate e-busness effect-
iveness. These criteria will also
serve as an important reference
frame for assessing the success
of your e-business initia-
tives, which should be linked
to institutional objec-
tives and priorities.

Measures can be strategic
(for example, student satisfac-
tion, impact on learning
outcomes, and impact on
research productivity),
financial (revenues generated
and impact on process costs),
or transactional (Web site
availability and user profile
and usage).

Diagnostic questions to
assess readiness include:
✓ Do you have a plan to
monitors key performance
indicators and business
benefits?

7) Security
It’s true that e-business
exposes your campus to new
security risks: cybercrime,
torrential data, and privacy con-
cerns. However, proactively
identifying and addressing
security risks can mitigate
these concerns and instill
confidence for all campus
constituents.

Diagnostic questions to
assess readiness include:
✓ Have you implemented
security programs that
protect your institution’s
network?
✓ Have you conducted
security response drills?

8) Tax and Legal
Issues
E-business-related tax and
legal issues abound. It is
important to involve your
department and solic-
its the advice of tax
consultants as part of the e-busness
planning process. It would be
risky not to. Failure to do so can
result in unforeseen costs
and unforeseen consequences.
Some so dramatic they can
stop a strategy in its tracks.

Diagnostic questions to
assess readiness include:
✓ Have you appointed tax
specialists who can help
you navigate these issues?

9) Strategic Plan
A successful e-business
strateg
is a useful guide to
improve e-business
management and
innovation. Diagnostic
questions to
assess readiness include:
✓ Is your organization
making strategic plans and
implementing
the plan?