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Achieving Success in Internet-Supported Learning in Higher Education:

Case Studies Illuminate Success Factors, Challenges, and Future Directions

By Rob Abel
ALLIANCE FOR HIGHER EDUCATION COMPETITIVENESS

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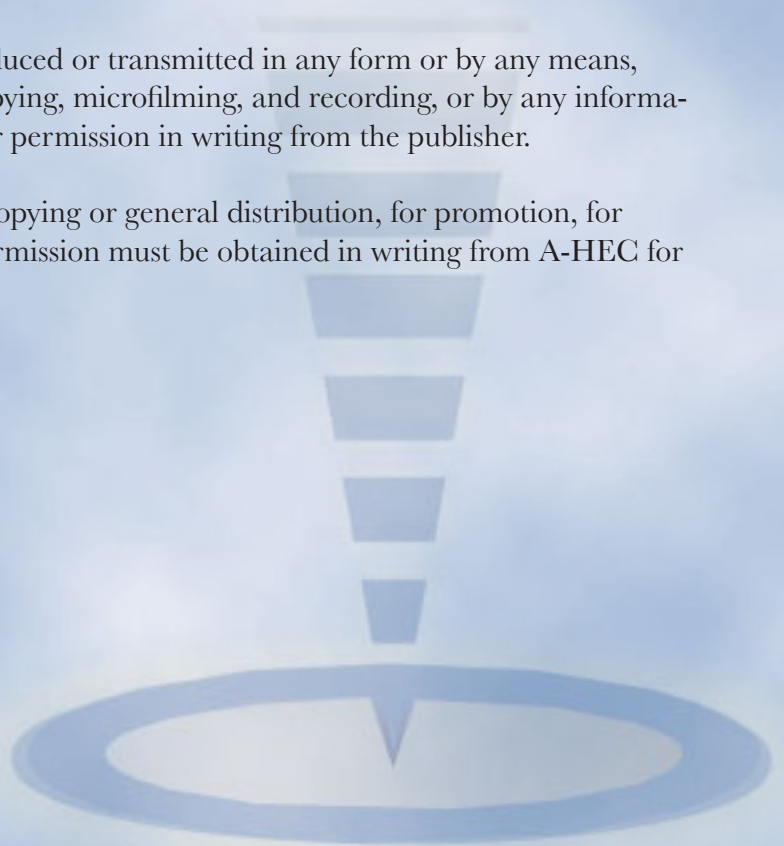
Achieving Success in Internet-Supported Learning in Higher Education: Case Studies Illuminate Success Factors, Challenges, and Future Directions

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Abstract

The popular and scholarly literature on the developing use of the Internet for delivery of higher education paints disparate views of success and failure. This paper summarizes the results of a set of surveys and interviews conducted with twenty-one higher education institutions of various types that consider their usage of e-Learning as successful. Through data collected from the participants and review of prior research, this paper provides some potential insights into the common success factors for successful adoption of Internet-supported learning, including motivation, leadership, measurements and expectations, student and faculty support, and delivery format. This paper also looks at best practices and innovations, major challenges faced, and priorities for the future. Finally, using well known models for adoption of new technology-based products, the paper comments on the progress of adoption to date and presents potential insights into future trends.
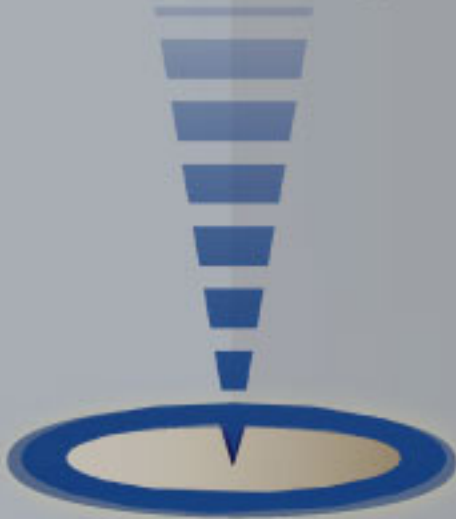
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"To successful institutions Internet-supported learning is an opportunity to reconsider the intersection of mission and student service and to create an improved educational product."

Section I: Executive Summary of Findings

Summary Finding One
Higher Education institutions that are succeeding in Internet-supported Learning have strong motivations to do so (see section VII).

Some of the factors that are most closely correlated with degree of success are:
- Consistency of Internet-supported learning with institutional mission (64%)
- Competitive pressure to provide Internet-supported learning (64%)
- Intention to grow enrollments through Internet-supported learning (59%)

Summary Finding Two
Institutions successful with Internet-supported learning have a strong commitment to the initiative (see section VIII).

- Administrators and faculty are clear that Internet-supported learning is a long-term commitment (91%)
- Administrators are actively involved in leading the efforts and administrative support for success is perceived as adequate for success (82%)
- While top-down leadership predominates, facilitative leadership that nurtures grass-roots support, coupled with a focus on high impact programs appears to be most effective

Summary Finding Three
Successful institutions measure themselves in a variety of ways depending on what is important to them; quality is at least or more important than growth (see section IX).

The measurements used to evaluate Internet-supported learning in

order of frequency are:

- Student outcomes (29%)
- Student satisfaction (21%)
- Growth in enrollments (21%)
- Faculty satisfaction (10%)

Summary Finding Four
Students and faculty are well-supported at successful institutions through a set of well established capabilities that are being constantly improved (see section X):

Most prevalent support services include:
- Highly available website or course management system (100%)
- Faculty helpdesk (91%)
- Course development help from a support center (86%)
- Student phone helpdesk (86%)
- Technical training for faculty (86%)
- One-on-one instructional design consultations for faculty (82%)
- Orientation to online courses for students (82%)
- Clear and effective policies for ownership of online materials (82%)
- A single program coordinator or student contact point (78%)
- Student feedback through course assessments (78%)

Summary Finding Five
The "secret sauce" of achieving success in Internet-supported learning varies from institution to institution, however, a "programmatic approach" with a commitment to fully online programs seems to be most critical (see section XI):

- A focus on getting programs (a full degree program) fully online (a "programmatic approach") as opposed to single courses fully online or web-enhanced courses, greatly increases the chance of achieving "overwhelming success" by a four

to one margin
- Best practices of the programmatic approach often result in new program/course configurations that enhance quality
  » Program redesign sessions to facilitate faculty leaders creating a better program
  » Pedagogy defined to reflect the uniqueness of the program

Summary Finding Six
Institutions successful in Internet-supported learning have gone beyond the technical issues and are much more focused on achieving a better educational product (see sections VI and XII).

A large variety of innovations and best practices have been developed by the successful institutions applied to all areas of the curriculum. Examples include:
- 24/7 learning labs
- Participation by 100% of full time faculty
- Faculty required to take comprehensive training program
- Course standards
- Maintaining a high degree of faculty/student interaction
- Use of class archiving and video replay to improve study
- Commitment to same high quality experience for all students
- Innovative business and centralized support models

Summary Finding Seven
The major challenges experienced by successful institutions indicate why many institutions continue to struggle with Internet-supported learning (see section XIII).

Even though the predominant methods for involving faculty in development of courses is to work with early adopters or those hand-picked by the academic leadership, the greatest challenges by far concerned the development and delivery of effective online learning materials and environments (42%):

- Technology learning curve and associated training required for faculty, coupled with lack of time for training (18%)
- Developing online learning materials and environments that support the quality and variety desired (13%)
- Finding and engaging enough faculty to meet the demand (11%)

<u>Summary Finding Eight</u>
To successful institutions Internet-supported learning is an opportunity to reconsider the intersection of mission and student service and to create an improved educational product. It is not about technology adoption. The successful institutions are addressing strategic, cultural and process issues that will help them perform their mission more effectively in the future no matter what direction technology takes (see section XVI).

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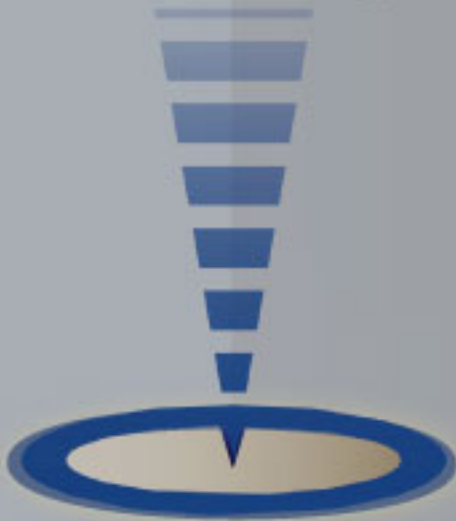
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"We hope to provide higher education leaders and online learning practitioners with information that will help them make the right choices with respect to the use of the Internet to support learning at their institution."

Section II: Background- Thwarted Innovation or Entering the Mainstream?

On a plane trip in preparation for the July 4th holiday of 2004, I brought along a copy of a recently published research report entitled, "Thwarted Innovation: What Happened to e-learning and Why" (Zemsky and Massy 2004). This well thought out study looked at e-Learning in both the higher education and corporate markets and generally painted a picture of an over-hyped technology that, although not dead, simply has not lived up to promises and is awaiting some future innovations before taking off in a big way.

Having recently departed a position at Collegis, Inc. (http://www.sungardcollegis.com/) where I was responsible for Online and Academic Services to a client base of about 50 higher education institutions, I was certainly very aware of the challenges associated with implementing e-Learning in higher education. The challenges are numerous and I could certainly sympathize with some of the disappointment relayed in the "Thwarted" study. On the other hand, I had personally been involved with many institutions that certainly had achieved success in using the Internet to support instruction. These included statewide consortiums, as well as all types of private and public institutions. Some institutions had turned around key programs that were in decline, others had significantly improved enrollments and revenues.

Some of the institutions I was aware of were clearly embracing the Internet as a fundamental component in a strategy to serve students better, while others were more laissez-faire in their approach. Some seemed to be in a reoccurring debate of "Is this a good thing?" Others seemed to be able to draw that debate to a conclusion and move forward. So, what was really happening in higher education e-Learning? Why did my experiences point to many examples of success while the "Thwarted" report described a "boom going bust"?(Zemsky

& Massy, 2004b)

In late 2003, prior to the "Thwarted" report, a report issued by the Sloan Consortium entitled "Sizing the Opportunity" (Allen and Seaman 2003) indicated from a survey of 994 institutions that 66.8% agreed that online education was critical to their long-term strategy while projecting a 19.8% growth rate in online students over the next year. The "Thwarted" study pointed out that the "Sizing" study may have drawn flawed conclusions for at least two reasons. The first was that the study represented a biased sample – those most likely to respond were those that were successful. The second was that the measurement of the number of online enrollments, which was the focus of the "Sizing" study, was not necessarily an accurate indicator successful adoption. This was because much of the adoption to date accorded to the "Thwarted" study was on a very simplistic form of online course (essentially a correspondence course delivered online) that was relatively easy to achieve but not consequential. The study proposed that the real innovation lies ahead in much more sophisticated capabilities, such as the faculty's ability to build courses from a "learning objects" database.

More recently Sloan has published the next annual update, "Entering the Mainstream" (Allen and Seaman 2004), in which 1,170 institutions participated. The report indicated the annual growth projection of close to 20% had been met. In addition, an increasing growth rate in online students of 24.8% in the next year is expected. Interestingly, the percentage of schools that indicated that online learning is critical to their strategy dropped to 53.6%. The "Entering" report has provided a more complete breakdown by Carnegie classification than its predecessor. This is revealing in that Baccalaureate institutions are clearly a laggard in terms of the importance of online learning to their strategy and non-profit private institutions clearly indicated that online courses were perceived as inferior quality compared to traditionally delivered courses.

The comparison of the findings of the "Thwarted" study with the "Sizing" study, in conjunction with my personal experience working with a range of institutions, indicated that there are differences in how institutions are approaching online learning and how they are perceiving their level of success. From those differences arose the current study that tries to understand why some institutions believe they are succeeding by looking at how they are doing it and identifying common denominators of success. In so doing, we hope to provide higher education leaders and online learning practitioners with information that will help them make the right choices with respect to the use of the Internet to support learning at their institution.

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Section III: Purpose of the Study- Understanding How the Successful Institutions Are Making Progress

The questions this study asks are motivated by a desire to uncover best practices in achieving success with the use of the Internet in higher education. Our objective is to understand the larger connection to institutional strategy as well as the necessary operational ingredients. Therefore, it is a study for leaders and practitioners.

Some of the key motivating questions we had at the outset were:

- Are there common factors for success? What are they?

- Why do institutions move online? Are there particular conditions under which e-Learning will be successful?

- What is the role of leadership and by whom? What level of investment or commitment is necessary for success?

- How do institutions evaluate and measure success?

- What are the most important and successful factors for student support and faculty support?

- Which online delivery format is most favored and why?

- What are some of the areas of best practice and key innovations so far and what can be expected for the future?

- Where do institutions get stuck? What are the key challenges?

- Where will successful institutions be placing their emphasis in the future with respect to Internet-supported learning?

- How far along are institutions in their adoption of Internet-supported learning and where will they go next?

"Are there common factors for success? What are they?"

"Our objective is to understand the larger connection to institutional strategy as well as the necessary operational ingredients."

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"A majority (59%) believed that faculty would say that the courses or programs resulting from e-Learning were clearly of higher quality than the classroom courses or programs upon which they were based."

Section IV: An "Academic" Exercise?

How relevant is Internet-supported learning to the future of higher education? Are we talking about another entry in a long list of technologies that have been applied to learning from the blackboard to the overhead projector? There are at least three reasons to take serious notice of Internet-supported learning. These are capacity, cost, and attainment.

Capacity. With a higher education degree now widely accepted as "the ticket to the middle class" (Newman *et al.*, 2004), U.S. enrollments in postsecondary institutions are expected to grow at about a 1.4% rate per year through 2012 (Gerald & Hussar, 2002). This number by itself is not cause for great alarm. In fact, the rate of growth was higher in the late 1980's. However, the projected growth varies widely from state to state with declines expected in some states and large increases, exceeding the national average by anywhere from 30% to 200%, in a group of about 20 states (Martinez, 2004).

The states with the highest growth rates will and already are (example: California) struggling to keep up with the demand, while institutions in states with declining enrollment are looking for ways to expand their reach to areas of growth. Internet-supported learning is an important, and some would say crucial, element in addressing both of these challenges. In fact, several participants in this study have used Internet-supported learning to meet these challenges.

Cost. Tuition has increased over six fold in just 25 years from 1978 to 2003, more than double the rate of inflation in that period (Vedder, 2004). More importantly, it is doubtful that this rate of increase can continue. According to calculations by Richard Vedder of the American Enterprise Institute and Ohio University, this trend must be reversed at some point soon as we are beginning to see potential scenarios that have annual tuition costing between one or two times an annual family income (Vedder, 2004). Also, according to Vedder, since 1980 the ratio of tuition to GDP output per student has been rising,

indicating that the output our society obtains from a dollar investment in tuition is on the decline.

Internet-supported learning has the potential to reduce costs. An investment in Internet learning technology is a direct investment in the delivery of learning, as opposed to facilities or non-academic programs. Additionally, increase in online programs, courses, or class sessions has a related decrease in the need for physical facilities, thus enabling serving more students at the same physical facility cost.

Attainment. The most frequently mentioned mission driver named by participants in this study was increased access. Clearly Internet-supported learning has increased access for many, from those too far to attend a campus to working adults who have enough time to obtain a degree now that the commute times and unworkable class sessions have been eliminated. However, while we historically have and are now continuing to make great strides in access to higher education in this country, the challenge we are failing to meet is success of students, or attainment, as measured by actual degree achievement. As pointed out by The Futures Project (Newman et al., 2004) we must go beyond access to attainment, especially for disadvantaged students.

In the recent Sloan "Entering" study over 50% of respondents (primarily academic officers) rated online learning outcomes as equivalent to or better than their face-to-face counterparts (Allen, I. E., & Seaman, J. 2004). In the study that you are reading, a majority (59%) believed that faculty would say that the courses or programs resulting from e-Learning were clearly of higher quality than the classroom courses or programs upon which they were based. From these two studies we can draw a conclusion that leading practitioners of online learning are committed to quality and believe they are achieving it. However, the work of the Futures Project reminds us that the objective for the future must be to increase quality and take more responsibility for student learning and outcomes than is the current practice.

As pointed out in (Twigg, 2002), until we move beyond trying to reproduce the classroom experience online and begin to tap into the potential to provide a more individualized approach to instruction, it will be difficult to "move beyond no significant difference in outcomes." In fact, Internet-supported learning holds great potential for achieving significant improvements that support potential gains in attainment. Five strategies implemented by participants in this study that enhanced student success were:

- Providing greater opportunity for students to participate than they would in a class session through well designed online collaborative experiences.

- Allowing faculty to allocate more of their time on individualized student guiding and monitoring as opposed to lecturing.

- Having better means to monitor student progress and satisfaction.

- Encouraging exploration of more material with better retention by encouraging self-directed learning rather than rote lesson plans.

- Providing dedicated student support representatives that helped students with process issues that are many times cause for failure.

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"We chose "Internet-supported" learning for the final title of the study because it turned out that all of the institutions involved were focused on delivery of education that was enabled by the Internet."

Section V: Study Methodology

Key Assumption. The Sloan "Entering" study appears to indicate that online learning is continuing to gain momentum. Consistent with that notion, the assumption of this study is that some institutions are "succeeding" in implementing Internet-supported learning.

Study Process. To answer the questions posed in the previous section this study required in-depth surveys and interviews with each institutional participant. Invitations were made to institutions referred by study sponsors and through A-HEC. The stated criterion was to work with institutions that believed they had achieved success with "e-Learning." There was no attempt to establish any more specific criteria for success, as we wanted the study to reveal each institution's perspectives on what determined success. Figure 1 indicates responses during the course of the study on internal perceptions of success. Being an in-depth study, a key criterion was the time availability of the participants.

Engagement with each institution was through the executive or manager most familiar with the online activities. This was institu-

Figure 1. Our e-Learning initiatives to date have been successful

- Overwhelming majority disagree — 0%
- Majority disagree — 0%
- About equal agree/disagree — 10%
- Majority agree — 29%
- Overwhelming majority agree — 57%
- Don't Know — 5%
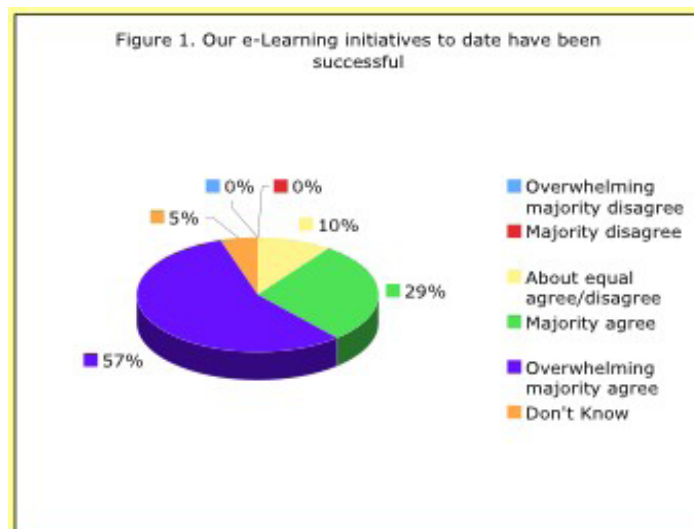
tion-specific and ranged from the President to Directors of online or learning technology activities. Titles of the primary contacts are summarized in Appendix B. Due to the wide scope of the questions, the contact individuals often involved others. It is important in interpreting the results to understand that 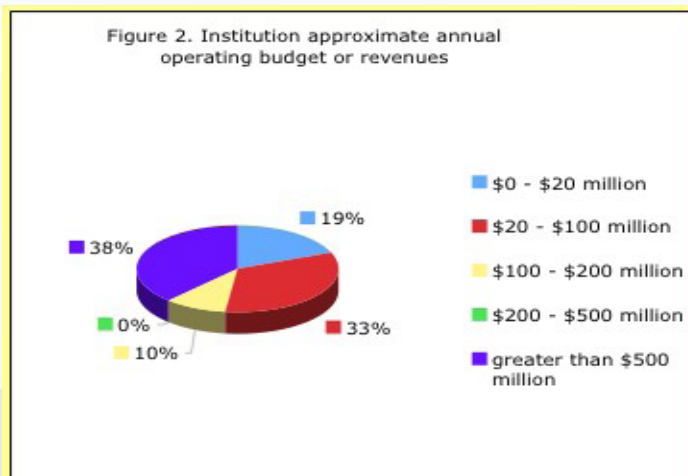we asked the respondents for their perception of the perceptions of other key constituents, such as faculty, students, and administration. While this introduces the possibility of bias by the respondent, this was considered acceptable because the purpose of the study was to understand the perceptions from the most knowledgeable contact, as opposed to trying to "ground-truth" those perceptions.

Engagement with each institution consisted of three steps. The first step was an extensive background web survey that consisted of over thirty multi-part questions, including many open text responses. The second step was a follow-up phone interview to discuss the specifics of the institution's experience and collect some key items for an included profile. The third step was a final web survey of over twenty questions that took some of the text responses from the initial survey and turned them into choices to be ranked among all participants, as well as collecting additional data on future expectations.

Participants. Participants consisted of 21 institutions from the complete spectrum of categories:

- 4 community colleges
- 1 community college consortium
- 1 national for-profit college
- 2 non-profit public baccalaureate/masters
- 4 non-profit private baccalaureate/masters
- 8 non-profit public research doctoral
- 1 non-profit private research doctoral

The participants and associated sponsors are summarized in Appendix A. Without any pre-intention, the sample set seems to be consistent with the findings of the Sloan "Entering" study in the sense that private institutions are less prevalent. The institutional operating budget distribution is shown in Figure 2.

Figure 2. Institution approximate annual operating budget or revenues

Legend:
- $0 - $20 million
- $20 - $100 million
- $100 - $200 million
- $200 - $500 million
- greater than $500 million

Definition of Internet-Supported Learning. The "Thwarted" study considered a wide spectrum in the definition of "e-Learning," from distribution of distance learning or correspondence course materials (often referred to as "online" or "fully-online" courses or programs – meaning that students never need to come to campus) to a facilitator of limited communications transactions between faculty and students (often referred to as "web-supported" courses, where a Course Management System is used to distribute course materials or provide simple interactions like quizzes) to "electronically mediated learning" in which the online materials provide the learning experience through a simulation or other form of learning interaction. On the other hand, the Sloan "Sizing" and "Entering" studies are focused on "online" courses, defined as having at least 80% of the course content delivered online. The Sloan studies also define blended/hybrid courses as having 30% to 79% of content delivered online, and web facilitated as having 1% to 29% of content delivered online (Allen and Seaman 2004).

For purposes of this study we chose a classification similar to the Sloan classification, but, realizing that it is very difficult to quantify the exact amount of content that was delivered online we chose to use terminology that was indicative of the student experience at both the course and the program (program of study leading to a credential) levels.

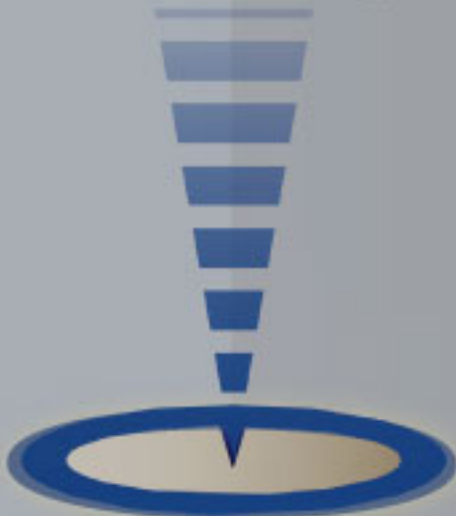Table 1. Internet-supported Learning Definitions

Terminology	Definition
Fully online program	Program that does not require the student to come to the main campus. This includes distance programs with occasional regional cohort meetings
Fully online course	Course that does not require the student to come to the main campus. This includes distance courses with occasional regional cohort meetings.
Hybrid/blended course	Course in which the number of traditional face-to-face sessions has been reduced significantly (at least 33%) due to online delivery, but, still requires face-to-face sessions on a regular schedule of at least twice per month or more.
Hybrid/blended program	Program that is a mix of traditional courses, fully online courses, or hybrid/blended courses.
Web-supported course	Traditional course that is supported by online materials, but whose face-to-face schedule is not altered substantially
Emporium-style course	Course that eliminates traditional class sessions in favor of online materials in conjunction with tutored lab or class sessions.

Sample Significance. This study is a compendium of case studies from 21 institutions that perceive themselves as successful in the use of e-Learning. Since the participant institutions had no special requirements, there is no reason to believe that other successful institutions would not exhibit similar characteristics. However, this study does not attempt to indicate the degree to which similar practices may or may not exist across all higher education institutions.

In this study, we consider all of the above types as "Internet-supported" learning. One of the explicit goals of the study is to understand the preferences among the participating institutions for these various alternatives and the rationale for those preferences. During the study we actually used the general term "e-Learning" in order to encompass the broadest possible set of experiences. We chose "Internet-supported" learning for the final title of the study because it turned out that all of the institutions involved were focused on delivery of education that was enabled by the Internet. Use of pre-Internet technologies and modes of delivery such as PowerPoint in the classroom, point-to-point distance learning networks, or instruction on CD-ROM were not the focus of any of the institutions participating in the study, although they may have been components of a larger Internet-enabled solution.

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Section VI: Profiles of Participant Institution Initiatives

Broward Community College. Broward Community College's motivation for progress in e-Learning was twofold. First, Broward believes it is important for students to have flexible learning options. Second, Broward feels it is important to support their faculty in becoming "21st century professors." Broward's greatest accomplishment has been achieving exceptional faculty participation through grass-roots growth in a highly supportive environment. One third of full-time faculty at Broward are involved in e-Learning that has supported about 15,000 enrollments in the last year, roughly 7% of the total credit hours produced by the college. Broward utilizes e-Learning across the curriculum, with roughly 47% of online activity associated with web support of in-class learning, 33% associated with fully online courses, and the remaining 20% associated with a hybrid or blended delivery approach. Consistent with its emphasis on faculty support and growth, Broward has implemented a very innovative approach of designating "e-Learning faculty associates" who are paid by the college to assist other faculty on a one-on-one basis.

Dallas Baptist University. Dallas Baptist University began its e-Learning initiative in 1998 motivated by the desire to better serve adult learners. The effort now encompasses nine graduate and eight undergraduate programs that are fully online, but, also supports traditional age students needing some flexibility to support their busy lives with online and hybrid courses. Today, 1026 of Dallas Baptist's students are online with over 5,000 online enrollments in the last year. The online programs have consistently operated at a 92% retention rate, which evidences strong commitment to quality. Dallas Baptist has implemented a required six-month course for all faculty teaching online. More than 150 faculty have gone through the course. The course fully equips faculty to deliver a high quality course online. Another Dallas Baptist quality innovation is a proofing process that involves academic reviewers at several levels before a course is offered to students.

El Centro Community College. El Centro Community

College started down the path of e-Learning as a result of strong vision of both the President and Chancellor. The college used grant funding to make a strong push to incorporate technology to record lectures and make them available online. Today, a significant number of the faculty are using the evolving system and more than 90% of students in the Health Occupations Division, are taking courses that feature the technology. To date, more than 2500 students have gone through technology-enabled Health Occupations programs. The institution reports anecdotally that the online review of lectures has enhanced student test score performance in the range of two to four points. The level of innovation in usage of video for better instructional results is evident in classes such as Echocardiology Technology, where students can watch the usage of equipment in real-time remotely with a better view than if they were watching from a seat in the classroom. They can also replay the archived session as many times as they need.

Florida Hospital College of Health Sciences (FHCHS). FHCHS began its quest into e-Learning with a strong interest in finding a way to advance the radiography profession. There were only a handful of baccalaureate degrees available. Therefore, for those in the profession who wanted to move ahead but were not in the vicinity of one of those programs there were few options. Today, FHCHS is serving over 500 students through the program, with more than 96% from outside commuting distance of FHCHS and 89% from outside Florida. Over 100 have already graduated. The success of the BS in Radiological Sciences spurred the development of an equally successful RN to BS nursing program with over 180 students. As a small institution, FHCHS accomplished success by leveraging technical and marketing resources from a for-profit partner, through very close cooperation and open communication. FHCHS's implementation has featured a pedagogical foundation that combines synchronous chat sessions with asynchronous instruction. Achieving best practice in this regard has enabled a strong sense of community among the participants as evidenced by 71% of the recent graduating class coming to campus for graduation despite no previous physical interactions.

Iowa Community College Online Consortium. Five years ago leaders from the fifteen community college districts in Iowa came together to discuss forming a consortium to pool resources to accelerate progress in developing and delivering online courses. Ultimately, seven of the districts decided to participate. In the latest term 3,246 unique students were served via 5,199 online course enrollments. It is estimated, through student surveys, that 30-35% of those students would not have been able to participate if the online courses were not available. The greatest accomplishment of this consortium seems to be the high level of cooperation that has enabled a highly consistent 91% student satisfaction rating across the system. The consortium has implemented a very innovative annual conference that is essentially free to the faculty and other participants, thus engendering a very collegial and cooperative atmosphere in which to participate. Another major accomplishment was the receipt of a major Title III grant from the U.S. Department of Education.

Johns Hopkins University Engineering and Applied Science Programs for Professionals. Johns Hopkins moved into online learning for its engineering programs for professionals in order to provide increased flexibility and access for students and faculty. A majority of the faculty in the program are part-time and it was initially envisioned that some might be recruited from outside the immediate region, although this has not turned out to be a major need. As part of an elite private institution, providing quality has been a major focus of the online program, which to date has focused on providing fully online courses. As such, Johns Hopkins greatest accomplishment has been the development of online course standards. Development and implementation of these standards has resulted in a framework suitable for the professional adjunct faculty to produce a high quality online experience while providing consistency of the student experience from course to course.

Kansas State University. Kansas State originally implemented early online technology eleven years ago to meet the perceived needs of a business degree for

farmers, which evolved into serving a wide constituency. These were and still are implemented in a blended program format. A couple of key strategic decisions were made early on: Focus on complete programs so distance students could get degrees and not just accumulate credits, and, focus primarily on programs in which the institution has a strong research reputation and ranking. Online evaluations have been an important component with the objective being to understand how to serve students better. A good example is some online advising tools implemented to address feedback on advising. From the lessons learned in distance learning use of online technology was brought into the classroom. In the latest fall term, roughly 17,500 students of Kansas State's 23,000 were being supported by online technology. Kansas State boasts several noteworthy innovations, among them are a "Teaching Scholar Academy" in which one faculty member is recognized each year and added to a group of scholars whose mission is to impact teaching and learning, and, use of new course formats in which students review lectures prior to class so that class time can be focused on more engaging activities.

Medical College of Georgia, School of Allied Health. The School of Allied Health at the Medical College of Georgia was motivated to make greater use of the Internet in order to provide a more flexible and inexpensive alternative to a legacy point-to-point video hook-up between distributed classrooms. The School of Allied Health implemented a solution that not only allows students to experience classroom lectures at any location at a lower cost than the legacy video link, but also allows faculty to put lectures online with little or no increase in development time. Of eight departments in the school, two have now put all of their courses completely online. Over 400 lectures are now available to students anytime and anyplace.

Michigan State University. Michigan State developed an early leadership reputation in online courses, with nearly 100 courses online in the late-1990's. In the late 1990's Michigan State established an innovative program providing online Advanced Placement courses throughout the State of Michigan. The materials developed for this program are currently the basis of several of the university's introductory courses. Over 1900 course sections currently are supported by a commercial course management system. Michigan State has developed and implemented LON-CAPA, an award winning content sharing and testing system that has become the core of its physics, chemistry, and sciences teaching programs. Michigan State's approach to e-Learning also reflects a best practice in providing a centralized group of course producers and instructional designers providing resources for faculty throughout the institution.

Montana State University, Billings. Montana State University Billings (MSUB) began its work in e-Learning in 1998, motivated by the need to serve a geographically dispersed student base and to keep up enrollments even as high school graduates in the area were predicted to decrease. From five online courses with 35 enrollments they have grown to 240 courses and 6500 enrollments in academic year 2004, serving 3500 students. The most important accomplishment at MSUB is reported to be making some good choices early on in focusing internal resources first and foremost on program selection and delivery and partnering with an external provider expert in online technology. This focus enabled rapid progress in what matters most to MSUB students: high quality programs. MSUB believes strongly on a student-centered approach and has achieved best practice with a dedicated online advisor and point persons in all divisions responsible for the various student services for online students. Unlike many institutions, MSUB has not been afraid to tackle the undergraduate curriculum, with the Bachelors of Science in Liberal Studies being its showcase program from the start.

Montgomery College. Montgomery College, Maryland, recorded 2414 "seats" in fully online courses in the latest Fall term and are growing at approximately 25% per year. Montgomery also provides hybrid/blended and web-supported classes. Montgomery's effort has been largely a grass roots success driven by the academic community. An early adopter of pre-Internet technologies for online courses, Montgomery's

faculty rapidly took to the Internet. Montgomery's implementation has featured a mandatory six-week intensive program for every faculty member teaching online. This training not only goes beyond technical features to include a significant emphasis on pedagogy, it also features development of the course that the faculty member will be teaching. An additional innovation of the Montgomery program that is just beginning to be implemented is a course observation process for online courses. This is a new tool that the academic departments will be using to monitor quality of the online courses in the same way that classroom delivery is monitored.

Ocean County College. Ocean County College's primary motivation to move online was to meet the needs of students who desired more schedule flexibility. Ocean's efforts have been primarily faculty led with faculty leaders serving as mentors to other faculty. This grass-roots effort has been complemented by a cooperative relationship with the faculty association for compensation of course development and the support of the president, especially as it relates to enabling the development of quality online courses. Faculty who teach online are required to have been an online student, which spurred the development of an online course in teaching online. Ocean has experienced almost 3000 enrollments in fully online courses over the past year. Building on this experience, Ocean is now involved in the Roadmap to Redesign effort funded by FIPSE and involving the Center for Academic Transformation, focused on improving high enrollment courses with a blended delivery approach.

Park University. Park University looked to the Internet, beginning in 1996, to better meet the needs of undergraduate degree completion students being served at military bases around the U.S. Today, Park serves 37 military bases in 21 states. From the start the focus of the Park initiative was student service – making all services that would be available face-to-face also available online. An example includes the equivalent of a campus director assigned to each student. To date over 120,000 students have now been involved in online courses, which now encompass 200 courses and three

complete graduate programs. Over 40,000 online course enrollments have been achieved this year. As a best practice, Park has focused on quality of instruction by requiring faculty teaching online to go through a 6-8 week training program in which they are the student in the course they will be teaching, thus understanding the student perspective. This is a rigorous process in which the attrition rate is purposefully high. In most cases, faculty are also required to have taught the course in a face-to-face format before teaching it online. The net result has been an achievement of 94-96% retention of students, despite the obvious uncertainties associated with military life.

Peirce College. Peirce College was motivated to create Peirce Online as part of its mission of practical, leading edge education in service to working adults and its legacy of innovative instructional technology in support of that mission. Peirce offers complete, accredited degrees totally online. Peirce feels that their number one strategic accomplishment with respect to e-Learning has been expanding from a strong regional brand to a national brand during the last five years. Peirce has degree students online in 43 of the 50 states. Today, roughly 46% of Peirce's tuition revenue is generated online. Traditional face-to-face instruction and online delivery utilize the same curricula, course descriptions, and professors. Both formats are included under institutional accreditation through the Middle States Association (MSA) as well as multiple program specific endorsements, such as the ABA and ACBSP. Peirce has an 86% retention rate currently in the online experience. Peirce has established a program advisor model that essentially is higher education's version of a relationship manager, making sure students have a "single touch point" for all their needs.

Penn State University. Penn State, an innovator in the use of technology in learning for 25 years, received a major shot in the arm four years ago when they undertook the creation of a common learning environment for all students. This common learning environment was championed by the provost and was seen as a way of providing a common framework for faculty to encourage progress through having a common set of

e-learning resources. Today, the major accomplishment is how ubiquitous but yet how invisible this framework is – invisible in the sense that it is a fully accepted part of the natural process of teaching and learning. As of November 1, 2004, some 62,000 of Penn State's 75,000 unique students were enrolled in a course supported with online technology. This equates to 137,000 course enrollments supported by online technology. Additionally, Penn State has used the same infrastructure to provide support to numerous online communities. Penn State has achieved best practice in enquiry-based learning, as exemplified by its School of Information Sciences and Technology, which features problem-based learning supported by online technology.

University of Baltimore. University of Baltimore (UB) has achieved considerable success in e-Learning in several specific programs as well as institution wide. For this study we focused on the MBA program. Out of a total of approximately 700 students in the UB MBA program, approximately 200 are fully online, and half of these students are from states other than Maryland. Greater than 50% of the credit hours delivered in the MBA program are through fully online courses. UB has a 75 year history of serving adult students, primarily through evening and weekend programs. With the arrival of e-Learning UB saw a potentially better alternative. The result has been increased access for local students and additional enrollments from distance students. UB feels that its greatest accomplishment has been a high degree of acceptance by traditional faculty. 50% of faculty across UB have taught an online course. From the early days, UB achieved best practice by fostering a high degree of faculty student interaction in its online courses.

University of Cincinnati. The University of Cincinnati points to the confluence of several factors as the catalyst for moving online, including their desire to increase access, a strong market need for select programs such as their top ranked criminal justice program, an institution-wide deployment of a course management system, and a new initiative for "revenue-based" programs. Growing a set of programs to over 1200 students in a few years, the University sees its most

significant accomplishment as achieving equal quality where students can receive the experience of a top-ranked program online. The institution has achieved best practice in maintaining a high faculty-to-student ratio, typically assigning a dedicated facilitator for cohorts ranging from 15 to not more than 25 students. A tenure track faculty member leads most courses. Feedback from students through both annual and course surveys shows that satisfaction levels in the online programs versus the campus-based programs are at least equal, if not higher. Retention in online programs is as high as 100% in the education administration program, with an average across the board exceeding 85% in select online graduate programs. The University has also achieved best practice with its strong focus on the pedagogical needs of working adults. For instance, a decision was made to structure some programs to be delivered one course at a time in intensive, shortened periods, in recognition of the challenges that working adults have in juggling the demands of school, work, and life.

University of Colorado Boulder, College of Engineering. Internet-supported learning was implemented in the graduate programs in the College of Engineering at the University of Colorado Boulder in response to students' desires to have access to courses in the "new currency" of today's connected world: digital content. Why? Graduate students at the school are primarily adults – many of whom have significant travel as part of their job description. In less than one year the school captured the live lectures for over 40 courses in digital video format and have made them available online. This includes five complete Masters programs. Today roughly 50% of all enrollments in the graduate programs are in the distance sections with 70% of those online. The school continues to improve the quality of the recording process, as the archiving of all lectures is rapidly becoming a standard for graduate engineering programs.

University of Florida. University of Florida's primary motivation for implementing e-learning was to provide increased access to their high quality programs. The university implements select programs

that are marketed and delivered nationwide. Since 1997 the Pharm.D program for working pharmacists has graduated over 600 students. Currently there are almost 600 active students in the program. University of Florida boasts one of the most innovative business models we have found. Programs are invested in and launched only after a sound business plan and market analysis have been performed. The centralized support unit receives a portion of the revenues from the success of the program and tuition levels are set competitively under the auspices of continuing education without reimbursement from the state. There are additional distance education-based programs for students in the state of Florida that are funded through the traditional tuition model. Approximately 6000 students registered in various Colleges on campus are studying at a distance. The best practice that was most notable, besides a very strong passion to serve the working adult learner, was the perfecting of a blended delivery approach that features regional meetings once per month that are run by University of Florida facilitators.
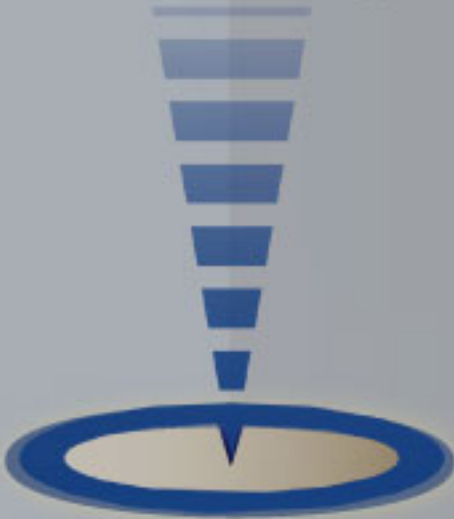
Virginia Tech Math Emporium. The Virginia Tech Linear Algebra Course is a hybrid program with online course materials supplemented by live in-person tutoring and access to computers at a center near campus. The students served are undergraduate, residential students in the Engineering program. Over 12000 students have successfully completed this course. There has been a 75% reduction in costs of delivery per student while maintaining equivalent quality to the lecture-based course and achieving a 33% reduction in failure rate. Implementing this course has allowed Virginia Tech students to participate in a personalized learning experience, especially as compared to the most frequently used alternative at most institutions: very large lecture sessions. The most significant innovation has been the successful design and implementation of the 24/7 math center that has combined the flexibility of online materials with personal face-to-face tutoring.

Westwood College Online. Westwood College initially looked toward e-Learning as a complement to its on-campus offerings. Westwood became motivated by the potential growth opportunity as well as by the opportunity to expand its brand by serving additional segments of the "non-traditional" post secondary student population. Westwood has since learned that fully online programs have allowed serving a different demographic in a different way than is being achieved on-campus. Westwood tracks demographics, outcomes, and satisfaction very closely. In fact, Westwood believes its most notable accomplishment in e-Learning is achieving outcomes as good or better than on-campus, especially for its "Design and Technology" programs, which require significant "applied learning." Westwood has achieved significant online success, supporting approximately 320 course sections, 8000 course enrollments and 2300 students in the most recent term. An extraordinary 94% of online students indicate they would recommend Westwood to a friend. In fulfilling the delivery of their Design programs online, Westwood has developed and integrated a very innovative set of tools that combine online interaction with locally run software applications on students' home computers.

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Section VII: Motivations for Moving Online

Why did the successful institutions in this study move online? Although there were a variety of reasons as illustrated in the profiles in the previous section, the short answer is a desire to increase service to students in a way that is consistent with their needs and the mission of the institution.

Figure 3 shows the responses to the question of consistency of the e-Learning initiative with mission from the respondent's view of senior executive perceptions. The most prevalent mission drivers in order of explicit mention were:

- Increase access
- Increase enrollment or revenues
- Increase student convenience
- Increase service to adult learners

Figure 3. Adoption of e-Learning is very supportive of our institutional mission.
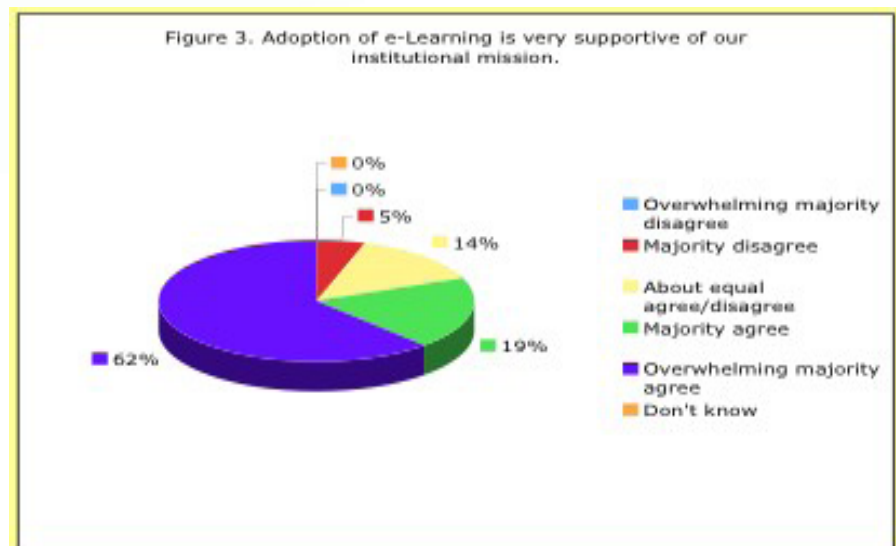
As shown in figure 4, the primary student focus for the online initiatives were degree-seeking adult learners. The responses indicated that the top three student needs being addressed through Internet-supported learning are flexibility, convenience, and access. The forth most important student need being addressed by Internet-supported learn-

ing is improving academic performance.

Figure 4. Please select the primary student focus of your e-Learning initiative.

- 11% ■ Traditional students
- 32%
- 0%
- 58%

■ Traditional students

■ Degree seeking adult students

□ Non-degree seeking adult students

■ A blended mix of some or all of the above
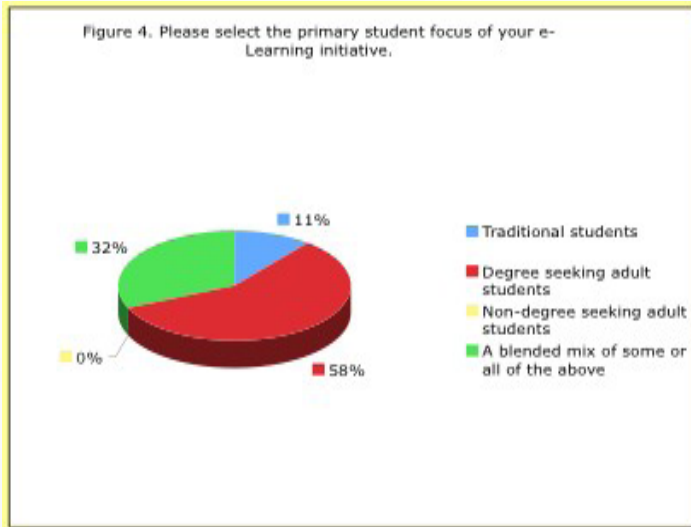
An important finding of the study was that three of the top four factors that had the strongest correlation with perceived success were also strong motivators to take action. These were:

- Consistency with mission (64%)

- Competitive pressure (64%)

- Ability to grow enrollments with e-Learning (59%)

The conclusion is that most of these successful institutions had strong and compelling motivators for implementing and succeeding in Internet-supported learning driven by the intersection of their mission and the desire to provide better service to students.

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"The most successful institutions have done a balanced and masterful job of combining top-down and grass-roots leadership, achieving strong faculty buy-in."

Section VIII: The Role of Leadership

What is the importance of leadership and by whom? An analysis was conducted to determine the correlation between the perception of success and the leadership provided directly by various key administrators. The results showed that support of administrators was a key factor in perceiving success, but not as key as the motivating factors illuminated in the prior section or the factors of prioritization of resources to high impact programs and allocation of funding to support the initiatives. Correlation of the perception of success to administrative support was as follows:

- Provost (41%)
- Key administrators – deans, chairs, etc (41%)
- President (36%)

An important leadership finding is illustrated in Figure 5.

Figure 5. Level of agreement on support from President, Provost, All Key Administrators

Legend:
- All of the key administrators are in agreement to fully support e-Learning
- The President has made it clear that e-Learning is a priority
- The Provost has made it clear that e-Learning is a priority
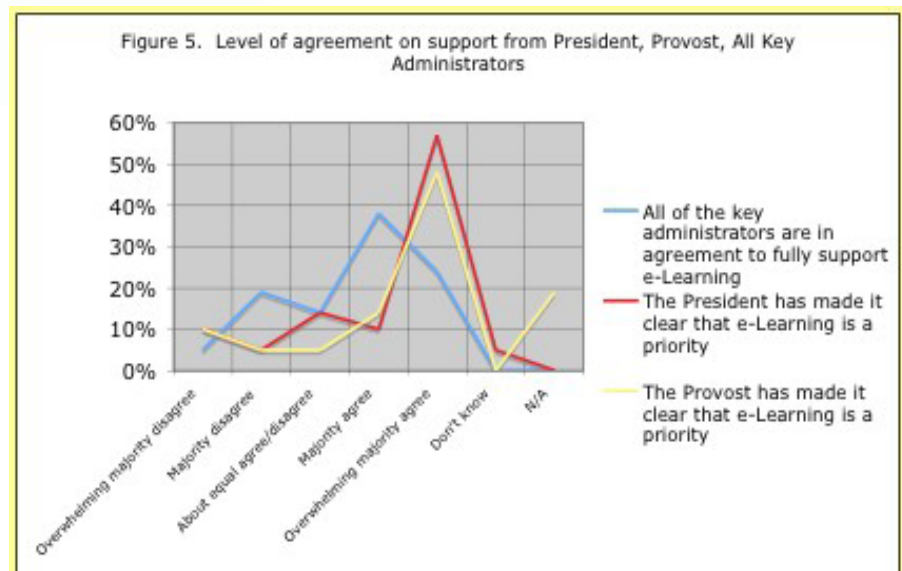
There was a clear indication that all key administrators were not necessarily on board with setting e-Learning as a priority. Whereas most of the presidents and provosts (not all of the institutions had

Figure 6. Most important INGREDIENTS OF YOUR SUCCESS: Top 9 out of a list of 20 Items.
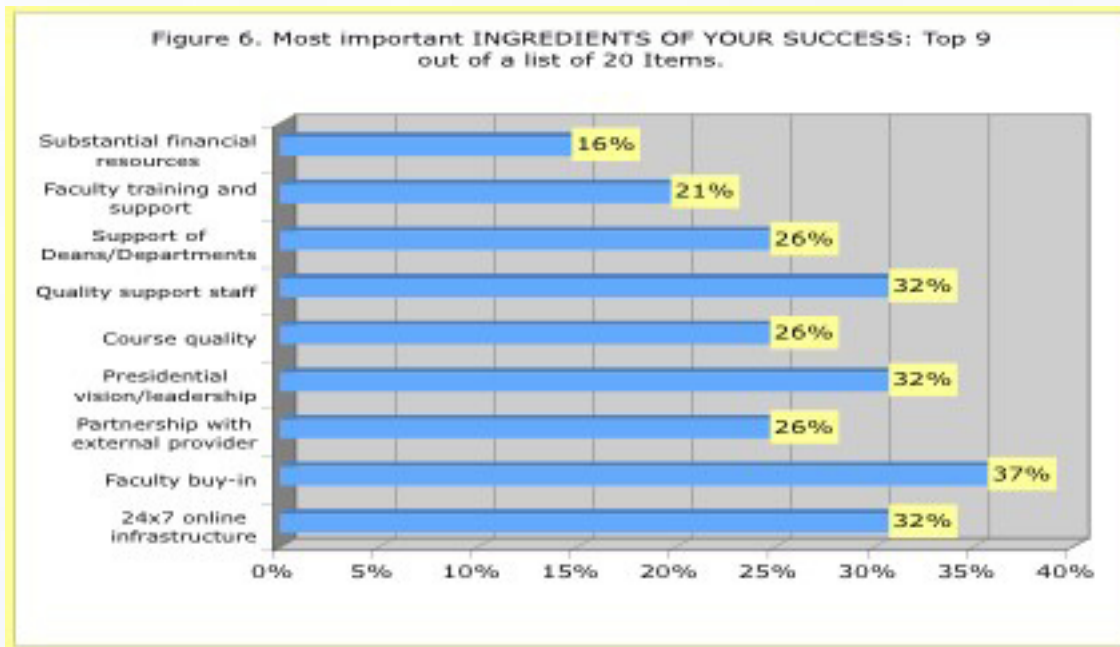
a provost-titled executive) clearly set a priority for e-Learning, a few did not, and, there was not universal agreement among key administrators. Yet, as shown above, the support from key administrators had about equal correlation with success as that from presidents and provosts. This finding correlates well with the answer to which individuals had primary responsibility for success of the e-Learning initiative. The top four responses were:

- Academic dean (52%)

- Provost (48%)

- President (38%)

- Vice president of or director of distance learning (38%)

But, this tells only a small part of the story on leadership. When asked to select only the three most important factors for success from a list of twenty, presidential vision/leadership comes in second only to Faculty Buy-In (see Figure 6). Another factor in the list of twenty was faculty leadership, which came in tied for thirteenth at only 5%.

However, it was noted out of the interviews that in some institutions there emerged a theme of the importance of grass-roots leadership from the faculty.

This was particularly true in the community colleges where in at least a couple of cases it was clearly viewed as necessary that the primary driver comes from the faculty.

To explore the issue of top-down presidential and grass-roots faculty leadership we added a question in the final survey that forced the respondents to select only the one primary source of leadership from executive-driven, faculty-driven, or student-driven. The results show that executive leadership was the primary driver by a factor of three to one.

Figure 7. If you had to choose only one of the following answers, how would you describe where the leadership for your e-Learning initiative has come from?

Figure 8. Signs of strong leadership and support for the Internet-supported initiatives

The reasons the institution wants to use more e-Learning are clear

Significant financial/other resources have been invested in e-Learning

E-Learning efforts have been prioritized to high impact programs/ courses

E-Learning is seen as a long term commitment

However, our conclusion from the combined surveys and interviews was that the best practice that resulted in the most substantial progress was the ability to provide top down leadership that facilitated the health and growth of the grass-roots sources. In other words, a combination of top-down with grass-roots appeared to be most advantageous.

Another apparent takeaway was that the source of leadership was most varied in the non-profit public research/doctoral institutions where there was not only a mix of executive and faculty, but two institutions selected student demands being the primary driver.

The surveys revealed the strength of executive support and leadership through the following dominate perceptions:

- A long-term commitment to the initiative
- Investment of significant financial and other resources
- Prioritization of expenditures on high impact programs
- A clear understanding by faculty of why the institution is implementing e-Learning

Taken in total our interpretation of the data in conjunction with the interviews leads us to the following conclusions:

- The most successful institutions have done a balanced and masterful job of combining top-down and grass-roots leadership, achieving strong faculty buy-in
- The large majority of these institutions have no doubt that they are engaged in a long-term commitment that has been adequately resourced and designated as a clear priority

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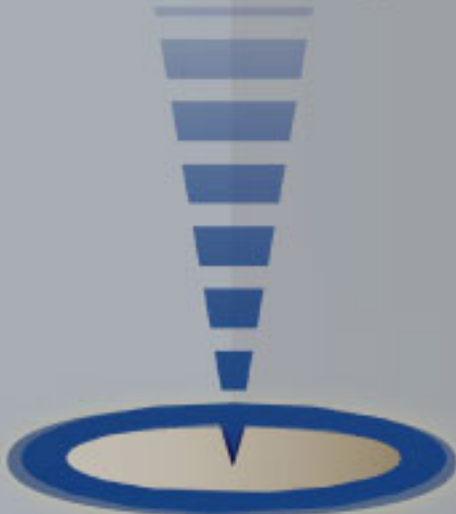
"These successful institutions are doing better than they expected with respect to e-Learning, significantly exceeding expectations between 20-25% of the time and exceeding expectations about 25% of the time."

Section IX: Measures of Success and Expectations

So far we have found out that perceived success in Internet-supported learning appears to be correlated with strong motivations and balanced leadership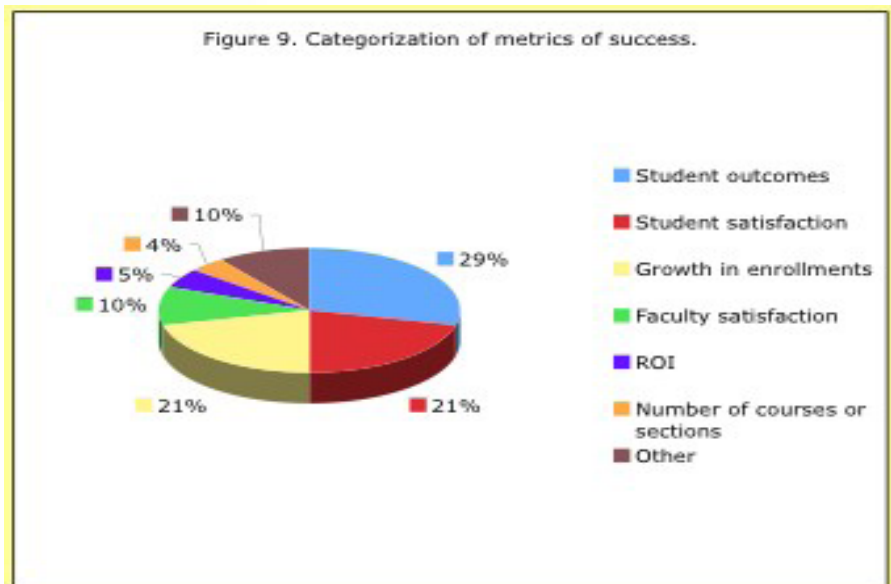. We next turn our attention to how institutions are measuring themselves with respect to their Internet-supported learning initiatives.

Respondents were asked to provide in free text format the top five measures of success. The answers were interpreted and classified into about 20 categories. The results are shown in Figure 9. Fully 50% of the measures were related to student outcomes or satisfaction, consistent with the strong motivators to move online to provide better service to students. 21% of the measures related to growing enrollments, consistent with the mission drivers of providing increased access and increased enrollment, revenues, and market reach. Faculty satisfaction came in at a distant but strong 10%.

Figure 9. Categorization of metrics of success.

- Student outcomes — 29%
- Student satisfaction — 21%
- Growth in enrollments — 21%
- Faculty satisfaction — 10%
- ROI — 5%
- Number of courses or sections — 4%
- Other — 10%

A very interesting result was that measures that involved the shear volume of courses or sections online or using CMS technology

Figure 10. Impressions of online course quality

Figure 10. Impressions of online course quality
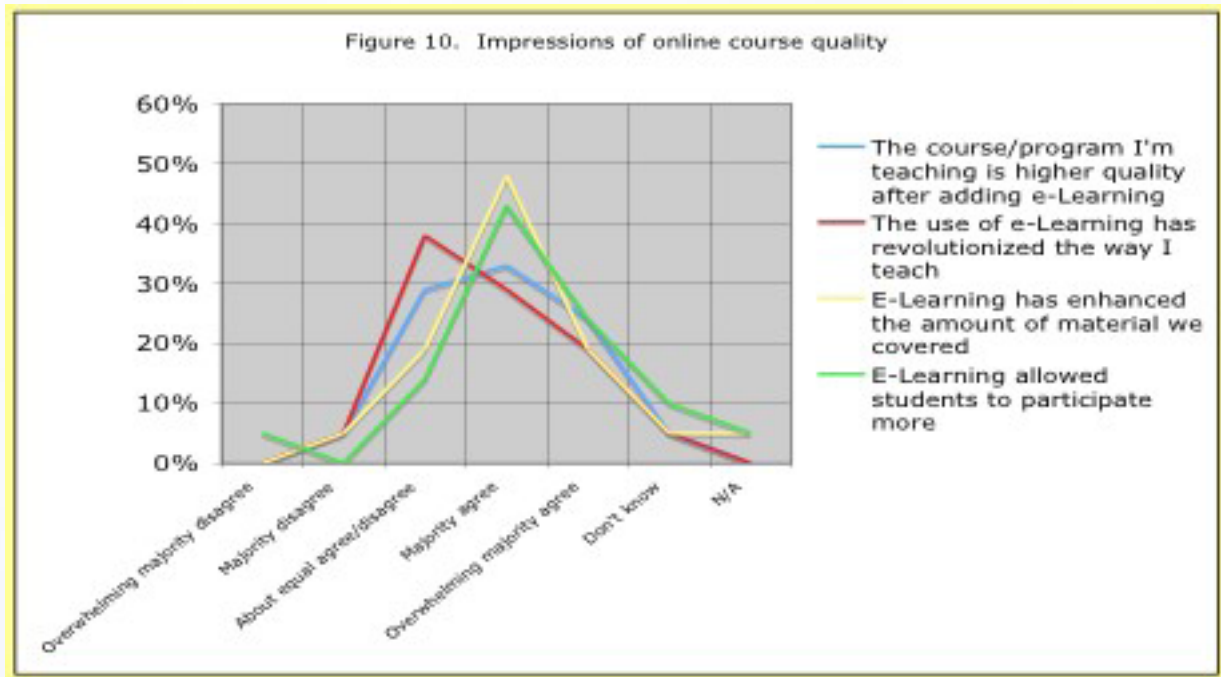
were only mentioned in 4% of the responses.

A few of the institutions had put in place relatively sophisticated measures of Return on Investment (ROI), but this was a small minority. The majority favored direct input from students to gauge progress.

Consistent with the focus on student outcomes, several of the institution profiles (see Section VI) point prominently to the equal or favorable student outcomes, as measured by retention and quality ascertained through student interviews, in comparison to face-to-face courses. How much progress is being made in terms of quality and the "no significant difference" phenomena (Twigg, 2001)? The recent Sloan "Entering" Study indicates that 40.7% of schools offering online courses agree that students are "at least as satisfied" with the online course in comparison to the face-to-face course (Allen & Seaman, 2004). Only 3.1% disagreed. The remainder were neutral, which we assume is interpreted as "not sure".

In this study of institutions that considered themselves successful at e-Learning we explicitly asked how it was believed most faculty and students involved in these efforts would assess certain quality-related issues. The results are shown in Figure 10.

Our interpretation of the results is that a majority of the institutions (59%) believed that their courses or programs were of higher quality due to the e-Learning initiative. A slightly smaller majority (54%) felt that they had revolutionized the teaching process. A larger majority (68%) felt that e-Learning providing students with two distinct advantages over the classroom experience: The ability to cover more material and the ability to be more participative in the learning process.

The "Thwarted" Study portrayed e-Learning as a "Boom Gone Bust" (Zemsky & Massy, 2004b). So, a natural question to ask of these self-admitted successful institutions was if they were more or less successful than they expected to be. Surprisingly, they were more successful than they expected, indicating that they would probably not characterize their experience as a boom gone bust (see Figure 11).

As previously mentioned, the Sloan "Entering" Report predicts growth in online enrollments of 24.8% in the coming year (Allen & Seaman, 2004). Based on the expectations of our participants, the majority of which selected enrollment growth in the range of 15% to 25% (for those that chose enrollment as a key metric), the Sloan prediction appears to be on the high end of

Figure 11. Indicate how performance to date has matched expectations
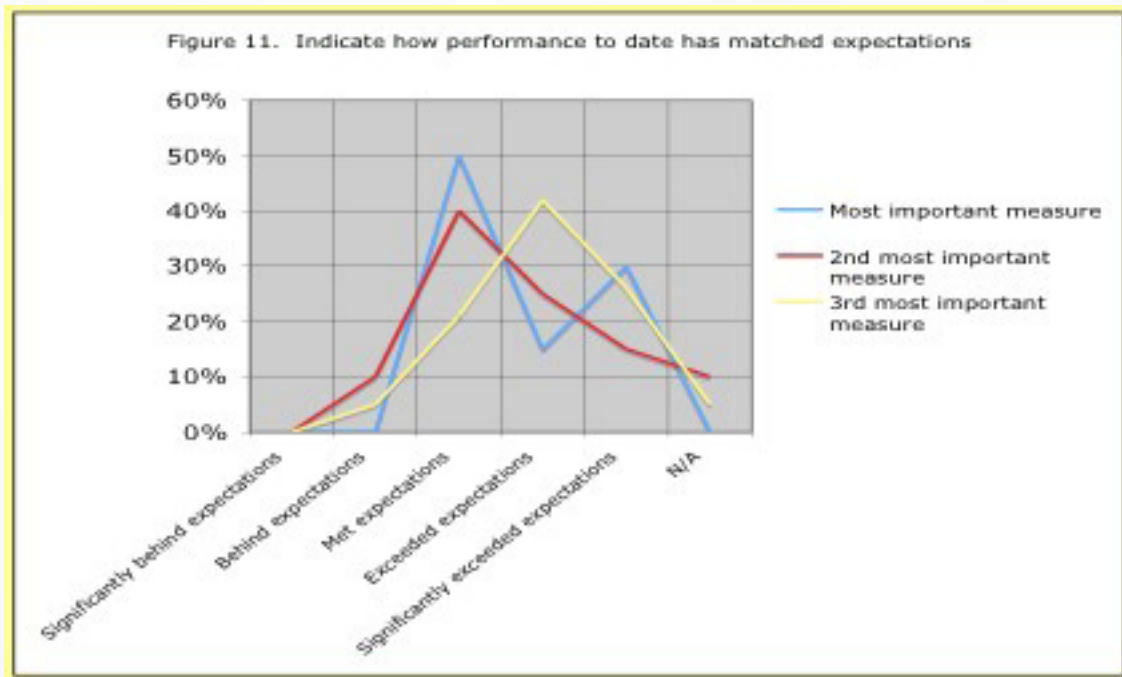
expectations. If we had to venture a guess based on our limited sample we would guess closer to the last year's growth (reported by Sloan of approximately 20%.

Should there be some standard metrics of success that all institutions of a given type compare themselves against? Our assumption going into this study was that institutions and the public would be best served by institutions developing and communicating their own mission-specific metrics. However, at the request of some participants we included a question in the final survey that asked respondents to give their opinion on the usefulness of each of a list of 18 metrics in comparing their progress to like institutions. The results indicated a set of metrics that were perceived as absolutely essential or very useful and a few that were considered by the majority to be poor comparison metrics. These are summarized in Table 2.

Table 2. Most and Least Favored Comparison Metrics

Most Favored Comparison Metrics	Least Favored Comparison Metrics
Student retention in online programs vs. on-campus programs	Cost control passed on to students in reduced tuition or fees enabled by the focus on e-Learning
Student completion in online programs vs. on-campus programs	Percentage of all course sections making use of the CMS
Learning outcomes (employment, wages, etc.) against a normalized set of factors	Online course quality as determined by administrators
Enrollment growth of students served by selected online programs	
Student e-Learning satisfaction against a normalized set of factors	
Online course quality as determined by students	
Percentage of enrollment growth in online courses in tandem with enrollment growth across the institution in all programs, i.e. total enrollment gains for the institution regardless of delivery format	

Consistent with the previous findings, the measures considered most useful are those concerning learning outcomes and quality as perceived by the students.

Our summary interpretation regarding measures of success and expectations is as follows:

- Metrics and expectations are focused primarily on measurements of student success and satisfaction with a secondary emphasis on increasing enrollment

- Quality in online courses and programs is perceived as clearly higher in a majority of these institutions than the equivalent face-to-face experience; significantly just under half feel that the majority of faculty believe it has revolutionized the way they teach

- These successful institutions are doing better than they expected with respect to e-Learning, significantly exceeding expectations between 20-25% of the time and exceeding expectations about 25% of the time

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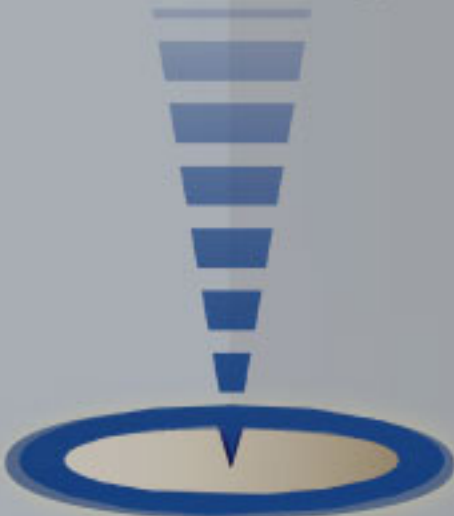
Seven student support services and seven faculty support services were predominant at these successful institutions. A host of additional services were implemented with varying success.

Section X: Student and Faculty Support

Clearly the previous sections on motivating factors, leadership, and metrics have already set markers for commonality among the participant institutions. From this baseline we now add explore the specifics with respect to student support, faculty support, and the selection of delivery format (the type of Internet-supported learning implemented).

Student Support. Respondents were asked to rate the success of implementation of 12 student support services. The responses enabled us to group the services into four different categories. The first two categories are contained in Table 3 and represent common elements of success in the clear majority of participants. The first category (A) is services implemented by all participants with success. Only two fit that category. The second category (B) are those in addition that were implemented with success by a significant majority of the participants. Five services made this category. These first two categories or seven services represent the common denominator student services of these successful institutions.

Table 4 contains student support services that are not as widely implemented. The first category in Table 4 (C) are those student services that were not implemented by at least 15% of the institutions but were implemented with good success by at least one third of the institutions. These services represent potential opportunities for more institutions to implement successfully. Six services made this category. However, one of those services also qualified for the second category (D) in Table 4, which are services whose successful implementation rate is less than twice their limited or non-successful implementation rate. In other words, services in this last category represent a potential implementation challenge or risk and should be considered carefully.

Table 3. Predominant Student Support Services

Category	Support Service
A. Student support services implemented with good success by essentially all participants	• Student phone helpdesk • Highly available website and/or course management system
B. Student support services implemented with good success by a significant majority (>65%) of participants	• Orientation to online courses (81%) • A single program coordinator, hotline or other program specific contact to report and resolve student issues (81%) • Student feedback through course assessments (76%) • Student web/email helpdesk (72%) • Online or phone-based registration (67%)

Table 4. Student Support Opportunities and Risks

Category	Support Service
C. Student support services implemented with success by a significant number (>33%) of participants that were not implemented at all by a significant portion (>15%) of the participants	• Student 24x7 helpdesk (57% vs. 29%) • Student focus groups or surveys to determine e-Learning program features most important to students (38% vs. 33%) • Program or college community building website (39% vs. 24%) • Online or phone-based registration (67% vs. 19%) • Online or phone-based payment (62% vs. 24%) • Program or college community building website (29% vs. 19%)
D. Student support services implemented with good success rates less than twice the limited success rates	• Student focus groups or surveys to determine e-Learning program features most important to students (38% vs. 28%)

Faculty Support. A similar analysis was undertaken with respect to faculty support services. A list of 22 faculty support services was presented to the respondents. None of the faculty support services qualified for the first category (A) of ubiquitous implementation. Seven faculty support services made the second category (B) of successful or highly successful implementation by a substantial majority. Again, these first two categories shown in Table 5, containing seven services, represent common denominators of the study participants.

Table 5. Predominate Faculty Support Services

Category	Support Service
A. Faculty support services implemented with good success by essentially all participants	• None
B. Faculty support services implemented with good success by a significant majority (>65%) of participants	• Faculty web/email helpdesk (90%) • Course management or other technical training classes (86%) • Faculty phone helpdesk (85%) • Course development support from support center staff (85%) • One-on-one instructional design consultations (81%) • Clear and effective policies for ownership of online materials (81%) • Additional fees paid to develop an online course (67%)

Table 6 contains faculty support services that are not as widely implemented. The first category in Table 6 (C) are those faculty services that were not implemented by at least 15% of the institutions but were implemented with good success by at least one third of the institutions. These services represent potential opportunities for more institutions to implement successfully. Eleven services made this category, indicating that there appears to be much opportunity for improvement in faculty support services, even at these successful institutions.

Nine services qualified for the second category (D) in Table 6, which are services whose successful implementation rate is less than twice their limited-success or non-successful implementation rate. In other words, services in this last category represent a potential implementation challenge or risk and should be considered carefully. The riskiest service appears to be learning object repositories, which fail more often than they succeed.

Table 6. Faculty Support Opportunities and Risks

| Category	Support Service
C. Faculty support services implemented with success by a significant number (>33%) of participants that were not implemented at all by a significant portion (>15%) of the participants	• Faculty support website for technical support (58% vs. 29%) • Faculty 24x7 helpdesk (53% vs. 33%) • Course to develop the online course (58% vs. 29%) • Additional fees paid to develop an online course (67% vs. 24%) • Additional fees paid to teach an online course (48% vs. 29%) • Formation of faculty team to redesign courses or programs (43% vs. 29%) • Specific support resources for adjunct faculty (33% vs. 38%) • Grant or other funding to put courses or programs online (52% vs. 24%) • Faculty sessions to profile student needs and select appropriate online pedagogy (43% vs. 19%) • Course testing support prior to deployment (33% vs. 38%) • Support for use of publisher content (48% vs. 19%)
D. Faculty support services implemented with good success rates less than twice the limited success rates	• Program website to support faculty sharing of best practices (24% vs. 34%) • Formation of faculty team to redesign courses or programs (43% vs. 24%) • Specific support resources for adjunct faculty (33% vs. 20%) • Faculty sessions to profile student needs and select appropriate online pedagogy (43% vs. 34%) • Learning object repositories to aid program or course development (15% to 34%) • Help from unbiased experts to assess the course quality and effectiveness (24% vs. 15%) • Process and support to improve the course or program each term it is offered (52% vs. 33%) • Support for use of publisher content (48% vs. 29%) • Course testing support prior to deployment (33% to 24%)

In summary, student support services appear to be converging on uniformly successful implementation much faster than faculty support services. While both areas still represent targets of opportunity even for successful institutions, the faculty support area has much more diversity and risk associated with it.

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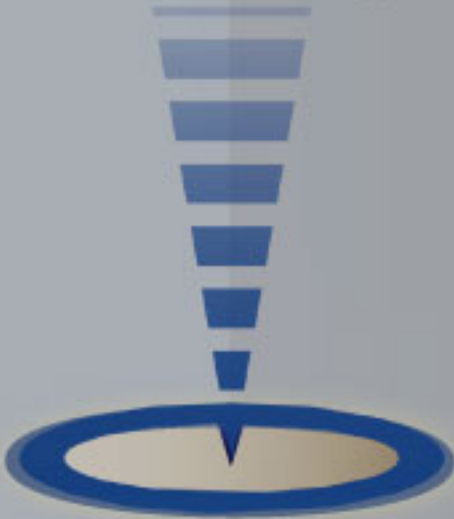
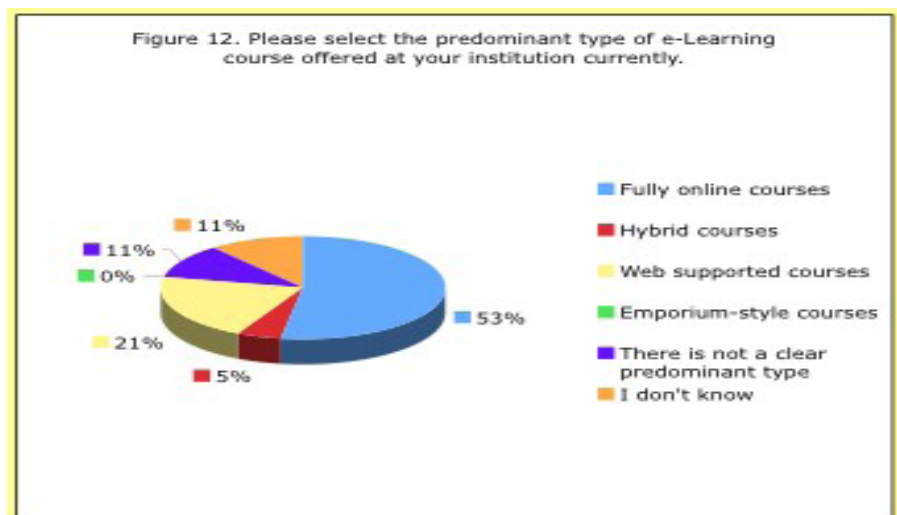## A-HEC

"Focus on getting complete programs fully online, which we refer to as a "programmatic approach", as opposed to single courses fully online or web-enhanced courses, greatly increases the chance of perceived success and quality."
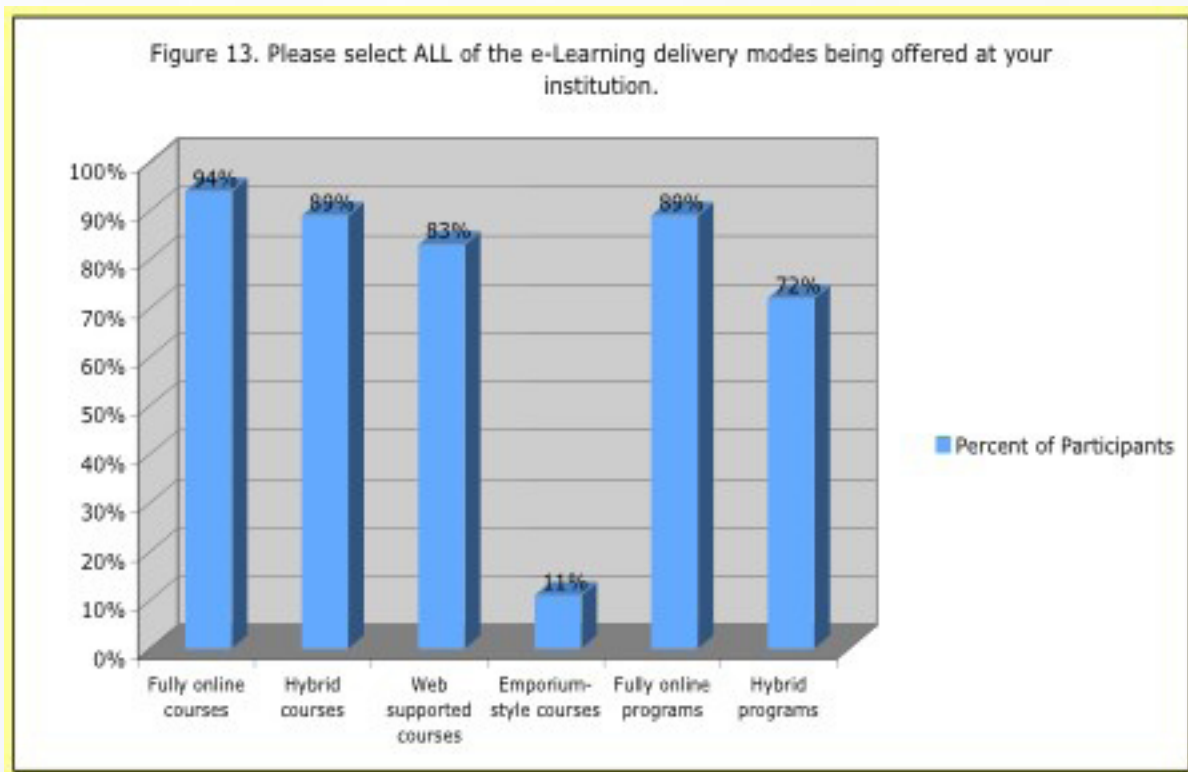
Section XI: Delivery Format

What types of online courses are preferred by these successful institutions? Web support of face-to-face instruction? Fully online? Hybrid?

One of the most startling findings of the study concerned the predominance of the move to fully online delivery of courses and programs and the connection to success. Remember that the study did not have any preconceived bias toward delivery format. It was up to the institutions involved to inform us of their use of e-Learning, their measures of success, etc. In reading the "Thwarted" Study, one would believe that the most predominant format that would have achieved successful adoption would be what the "Thwarted" Study refers to as "enhancements to traditional courses", such as use of PowerPoint, or, simplistic use of Course Management Systems for what the Sloan reports refer to as "Web Facilitated" and what this study refers to as "Web Supported".

Figure 12 illustrates that there was a predominance of fully online courses in 53% of the institutions, with web supported course predominance coming in at a distant 21%.

Figure 12. Please select the predominant type of e-Learning course offered at your institution currently.

- Fully online courses — 53%
- Hybrid courses — 5%
- Web supported courses — 21%
- Emporium-style courses — 0%
- There is not a clear predominant type — 11%
- I don't know — 11%

Figure 13. Please select ALL of the e-Learning delivery modes being offered at your institution.

This was an intriguing result because common sense would dictate that there would be more pervasive use of the simpler approach. To analyze this we looked at additional data. Figure 13 shows all of the types of e-Learning supported at the participating institutions. While fully online course were still in the lead, we were relieved to see that hybrid and web supported courses were only a few percentage points behind.

We believe that the answer as to why the sample for this study featured a dominance of fully online came with the type of student primarily served via the e-Learning initiatives or market segmentation. Please refer back to Figure 4 in section VII, which illustrates the predominance of focus on the adult learner, where fully online courses are preferred for the convenience factor. Our preliminary conclusion is that along with a strong focus on the adult learner comes an accelerated move to fully online courses. Our participant sample was also somewhat biased towards a focus on commuting students at their campus locations:

- 32% served mostly residential students at their campuses
- 47% served mostly commuting students at their campuses
- 21% served an approximately equal mix of both types at their campuses

As shown is Figure 13 above, 89% of the participant institutions have gone the next step beyond the fully online course and implemented fully online programs, where program refers to an academic program of study. A key finding of the study, is that a majority of the institution participants, 71% implemented what we will refer to as a "programmatic approach" to moving online. This approach involves an intentional focus on moving all or most of the student's experience in a program to the online format.

The study looked at the common practices involved in the programmatic approach to moving online. Respondents were presented with a list of sixteen processes and asked to rate how successfully they had been able to implement each one. As with the analysis of student and faculty support services, Table 7 indicates the prevalent features and Table 8 indicates the opportunities and risks.

Table 7. Predominate Features of Programmatic Process

Category	Support Service
A. Programmatic processes implemented with good success by essentially all participants	• None
B. Programmatic processes implemented with good success by a significant majority (>65%) of participants	• Support resources dedicated to the selected program(s) (93%) • Development of a project plan, including schedule and milestones (87%) • Prioritization from institutional leadership to choose most impactful programs (86%) • Program redesign sessions to facilitate faculty leaders creating a better program using e-Learning (74%) • Pedagogy defined to reflect the uniqueness of the program(s) (73%) • Involvement of enrollment management in the program planning (67%) • Development of success measures, such as enrollment targets (67%)

Table 8. Programmatic Opportunities and Risks

Category	Support Service
C. Programmatic processes implemented with success by a significant number (>33%) of participants that were not implemented at all by a significant portion (>15%) of the participants	• Involvement of marketing in the program planning (60% vs. 27%) • Involvement of enrollment management in the program planning (67% vs. 27%) • Development of a Return on Investment (ROI) model to quantify financial return (53% vs. 23%) • External industry experts brought in to help with project planning or implementation (53% vs. 33%) • Explicit mention of program success as a key institutional priority (54% vs. 20%) • Domain specific resources set up to support adjunct faculty (54% vs. 20%) • Grant funding to support program development (40% vs. 40%) • Increased operational budgets to support program development (58% vs. 29%) • Student fees or differential tuition implemented to support program development (60% vs. 20%)
D. Programmatic processes implemented with good success rates less than twice the limited success rates	• None

Seven programmatic processes (B) were implemented by the predominance of the participants. These processes represent best practice in moving programs online and the ramifications of these on the transformation of a program to higher quality is significant. A review of the list of seven shows a strong emphasis on achieving a very clear and definable objective that provides a framework for measurement. We would conjecture that the ability to measure progress, academically or otherwise, is much more challenging in a course-focused approach.

Nine processes represent potentially under-utilized strategies that should be considered. A very interesting result is that unlike the faculty support services, there were no programmatic processes that represent implementation risks and challenges.

Is there any relationship between the programmatic approach and success? The short answer is a very strong "Yes". The following data contributes to this conclusion:

• Among the top four factors that contribute to perception of success, three had to do with mission motivators and were mentioned in section VII. The one remaining factor, that was actually second in terms of strength of correlation, was prioritization of resources to high impact programs.
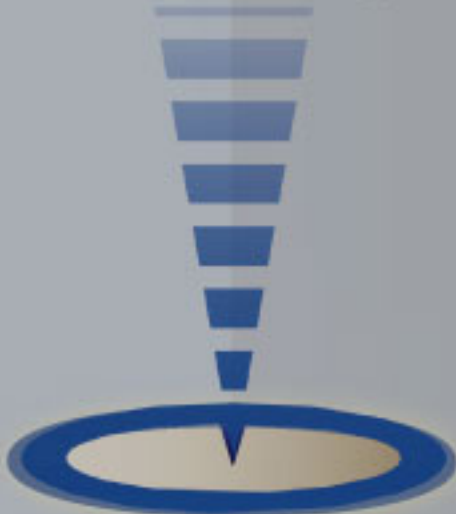
Internet-supported Learning

- An analysis was performed to compare the correlation between success and a focus on moving courses online versus a focus of moving programs online. The analysis showed roughly a four-to-one stronger correlation of programmatic focus to level of success (53% vs. 17%)

- There also appeared to be a connection between programmatic approach and perceived quality. Five institutions believed that faculty would agree overwhelmingly that the online course or program exhibited higher quality than the comparable classroom course. All five were using a programmatic approach.

In summary, focus on getting complete programs fully online, which we refer to as a "programmatic approach", as opposed to single courses fully online or web-enhanced courses, greatly increases the chance of perceived success and quality.

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Section XII: Best Practices and Innovations

What are some of the areas of best practice in Internet-supported Learning and key innovations so far and what can be expected for the future? Obviously the common denominators of success presented in section X represent best practices. In this section we review best practices and innovations that the participants named in their responses for the purpose of encouraging readers to think about the role of these in their Internet-supported learning efforts. Section VI also contains best practices and innovations in the participant profiles.

Through an open-ended question regarding each institutions top three ingredients of success we were able to derive a categorization framework for best practices and innovations. Figure 14 shows the breakdown of the free-form responses into nine categories.
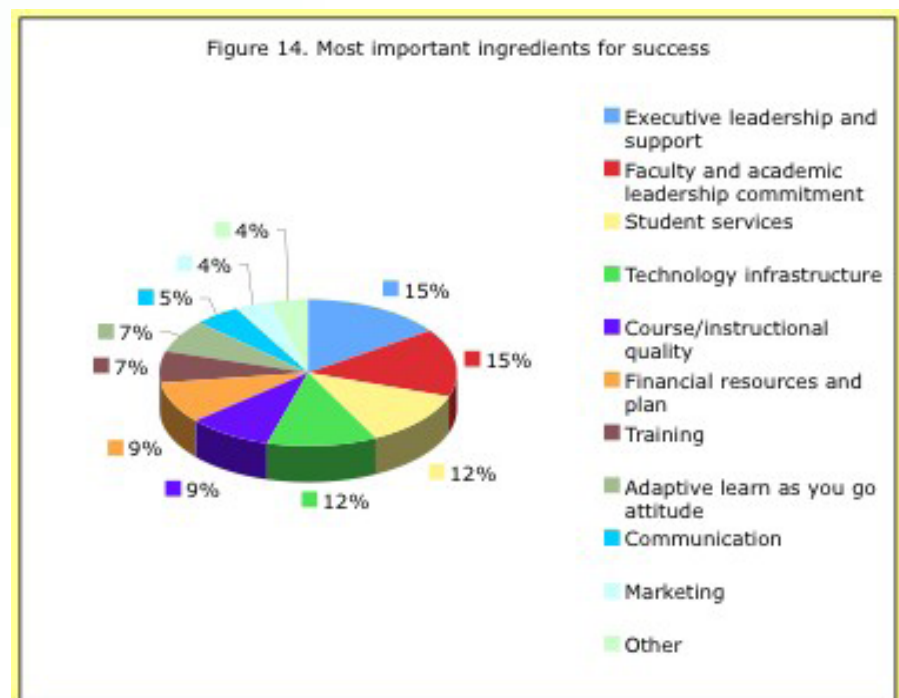
"Best practices and innovations in Internet-supported learning are numerous and unique to the specific needs of an institution."

Figure 14. Most important ingredients for success

- Executive leadership and support — 15%
- Faculty and academic leadership commitment — 15%
- Student services — 12%
- Technology infrastructure — 12%
- Course/instructional quality — 9%
- Financial resources and plan — 9%
- Training — 7%
- Adaptive learn as you go attitude — 7%
- Communication — 5%
- Marketing — 4%
- Other — 4%

Subject Matter. A review of best practices would not be complete without looking at the subject matter being delivered through Internet-supported Learning. The subject matter being taught with Internet-support was extremely diverse. Appendix C contains a listing of course and program topics that our participants felt were most successful. Suffice it to say that the topics ranged from math to science to social science to business to practical professions, such as Nursing and Design. The range of innovation with respect to the course content was surprising. Thus, the subject matter was not an area of commonality. Please read the institution profiles in section VI for more anecdotes on innovations in specific subject areas.

Categorization of Best Practices and Innovations. Table 9 contains respondent's short references to achieved best practices and innovations. Obviously there has been no attempt in this study to delve into these areas in any more depth than is contained in the profiles and what is revealed in the common denominators of success. The purpose here is to relay some of the ideas from this group of successful institutions.

Table 9. Example Best Practices and Innovations Achieved

Category	Best Practices Achieved	Innovations Achieved
Executive leadership and support	• Clear policies • Importance of teaching and learning quality in raise and tenure • Program focus	• Revenue sharing to fund centralized support resources • Cooperation through a consortium
Faculty and academic leadership commitment	• Incentives for faculty participation • Protection of faculty intellectual property • 100% full time faculty involvement	• Annual conference free for all participants • Teaching scholar academy
Student service	• Program advising • 24x7 help desk support • Web-based enrollment and financing • Faculty role in early term retention • Dedicated staff to support distance learners	• Full student support 24x7 • 24x7 learning lab environment • Wide range of online student services
Technology infrastructure	• Highly reliable 24/7 infrastructure • Use of technologies to match pedagogy	• Strategic partnerships • Provide lower cost and higher access alternative to full video
Course/instructional quality	• Integration of enquiry-based and team activities • Content management • Student/faculty interaction • Standard course structure/course standards • Faculty led regional cohort meetings • Live lab demos of equipment • Lecture archiving, review, and feedback • Cohort model to better track student performance	• 24x7 learning lab environment • Serve multiple learning styles • Use of advanced software by students at home • Facilitator groups of 15-20
Financial resources and plan	• Sufficient financial resources and seed funds	• Implementation throughout a consortium
Training	• Mentoring of faculty • One-on-one support from curriculum designers • Reduced time involved in creating e-lectures • Required faculty training and/or orientation • Web based training for the faculty	• Peer tutors • Emphasis on trained, certified faculty • Faculty required to have been an online student
Marketing	• Marketing and retention plans	• Strategic partnerships

From reviewing the table one can see that not all categories had best practices or innovations mentioned. Also, the judgment as to what is a best practice versus an innovation is a subjective one. Either type represents potential new territory to be considered.

Our conclusion with respect to best practices and innovations in Internet-supported learning by successful institutions are:

- They are numerous
- They are unique to the specific needs of an institution
- They are primarily focused on content/instructional quality, student service, and training
- A majority of the innovations being worked on are in support of creating a better learning experience for students through better courses and better developed faculty

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Section XIII: Challenges

Up to this point we have covered a large territory with respect to what needs to be focused on to achieve success in Internet-supported Learning. It is also natural to ask where do institutions get stuck? What are the key challenges?

Section VII makes it clear that the substantial majority of successful institutions in this study have clear motivators in terms of the intersection of mission and the desire to provide better service to students. We can conjecture that most or alt least many elite private institutions get stuck right at that point. Since most of our study institutions did not fall into that category, we would not expect that issue to arise when asking where the greatest challenges were. To solicit input we again used the technique of collecting open ended responses. Figure 15 shows the grouping of those responses into eleven categories.

"42% of the challenges related to the source of the delivery material, that is, the faculty and the online learning materials and environments that are largely developed by them."

Figure 15. Please list your greatest challenges in implementing the e-Learning initiative

- 18% ■ Technology learning curve for faculty
- 13% ■ Developing content of quality and variety
- 11% Engaging enough faculty
- 9% ■ Cost/funding
- 7% ■ Student readiness
- 7% ■ Infrastructure reliability
- 7% ■ Dealing with change
- 5% ■ Convincing the administration
- 5% ■ Communication
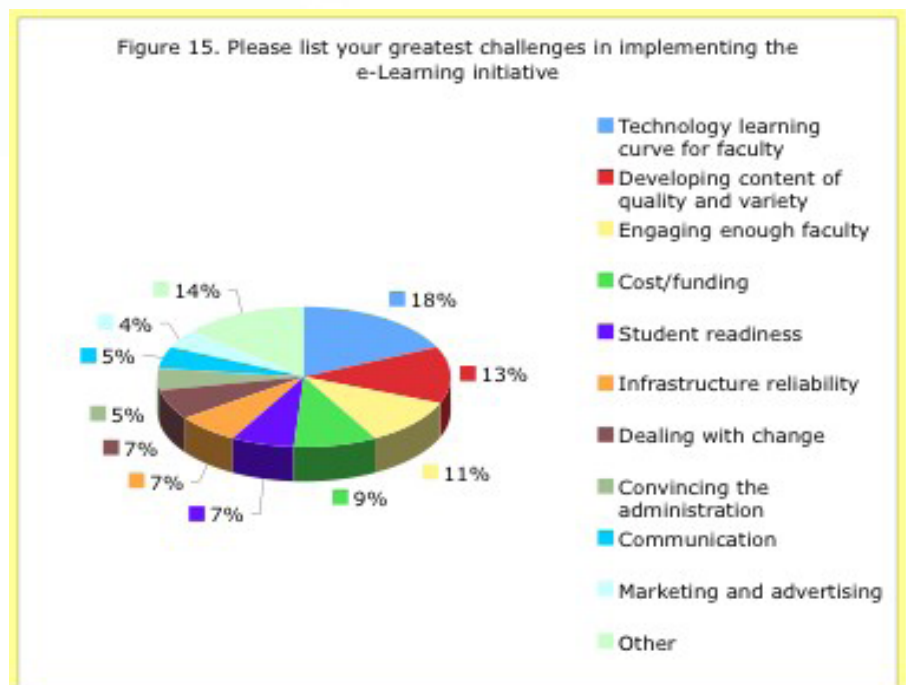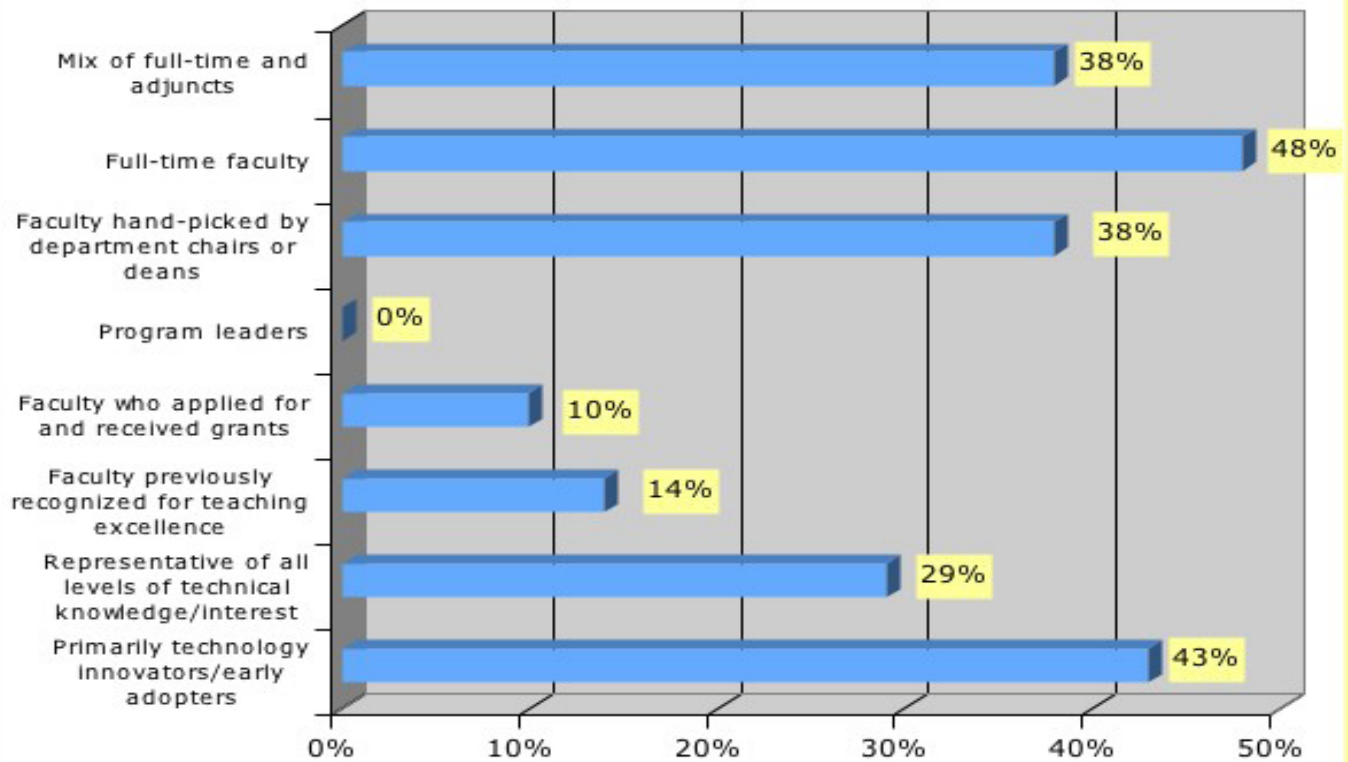- 4% Marketing and advertising
- 14% Other

Figure 16. Faculty adoption characteristics

The top three categories, or 42% of the responses related to the source of the delivery material, that is, the faculty and the online learning materials and environments that are largely developed by them. This is despite the fact that most faculty are early adopters or others that are hand-picked as shown in Figure 16.

For these successful institutions these represent past challenges. However, in light of the analysis of prevalent and successful support services presented in section X and the best practices and innovations presented in section XII, it is clear that faculty support represents both an oportunity to create a better educational experience as well as a risk that can derail progress. The support services highlighted in section X as well as

the details of the programmatic approach highlighted in section XI provide means to reduce the risk substantially.

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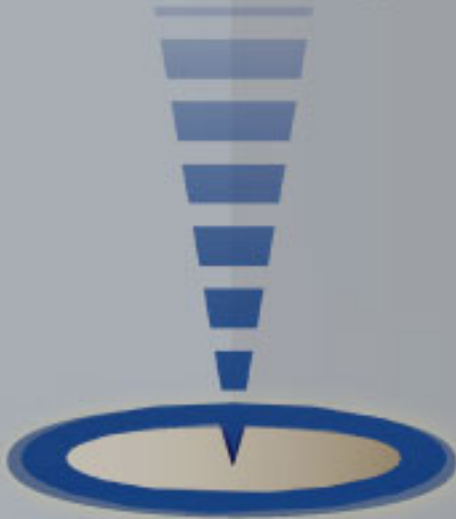
The next three years should see additional emphasis on fully online courses, hybrid courses, faculty support, quality stand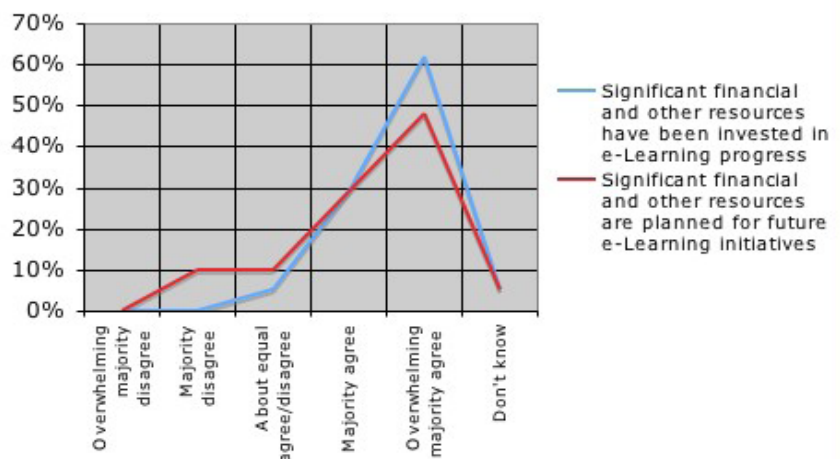ards, multimedia, interactivity, quizzing, library services, marketing, recruiting, and assessment of learning outcomes.

Section XIV: Future Priorities and Expectations

Where will successful institutions be placing their emphasis in the future with respect to Internet-supported learning?

Finances. One of the implications of the "Thwarted" Study was that financial support for e-Learning might be dropping off at some institutions. We specifically asked our participants about future funding expectations. As was already pointed out in section VII, a substantial majority of the participants felt that financial support was adequate and that there was a long-term commitment to the e-Learning initiatives. The results shown in Figure 17. There is only a small decrease in future expectations from past levels.

Figure 17. Financial support to date and in the future.

Legend:
- Significant financial and other resources have been invested in e-Learning progress
- Significant financial and other resources are planned for future e-Learning initiatives

X-axis categories: Overwhelming majority disagree, Majority disagree, About equal agree/disagree, Majority agree, Overwhelming majority agree, Don't know
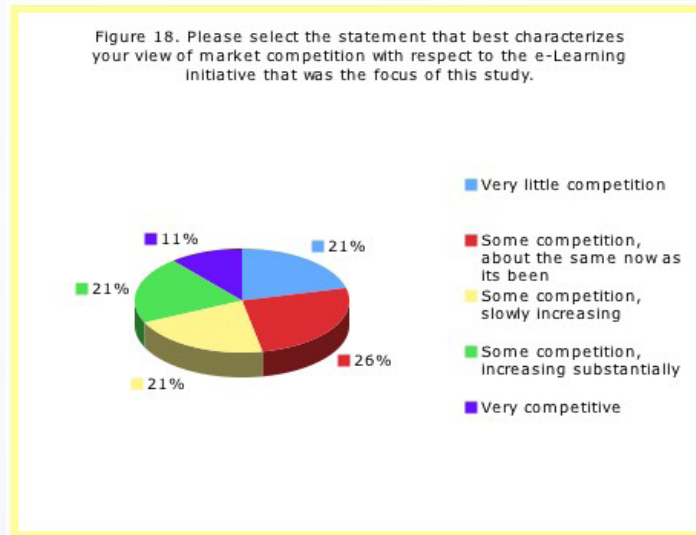
Competition. How competitive is the market for online learning as perceived by our participants? About 32% of the institutions felt that their online initiatives were either already involved in significant competition (11%) or were heading rapidly for significant competition (21%). 47% reported that there was essentially a status

quo of an environment of limited competition.

Figure 18. Please select the statement that best characterizes your view of market competition with respect to the e-Learning Initiative that was the focus of this study.

- Very little competition — 21%
- Some competition, about the same now as its been — 26%
- Some competition, slowly increasing — 21%
- Some competition, increasing substantially — 21%
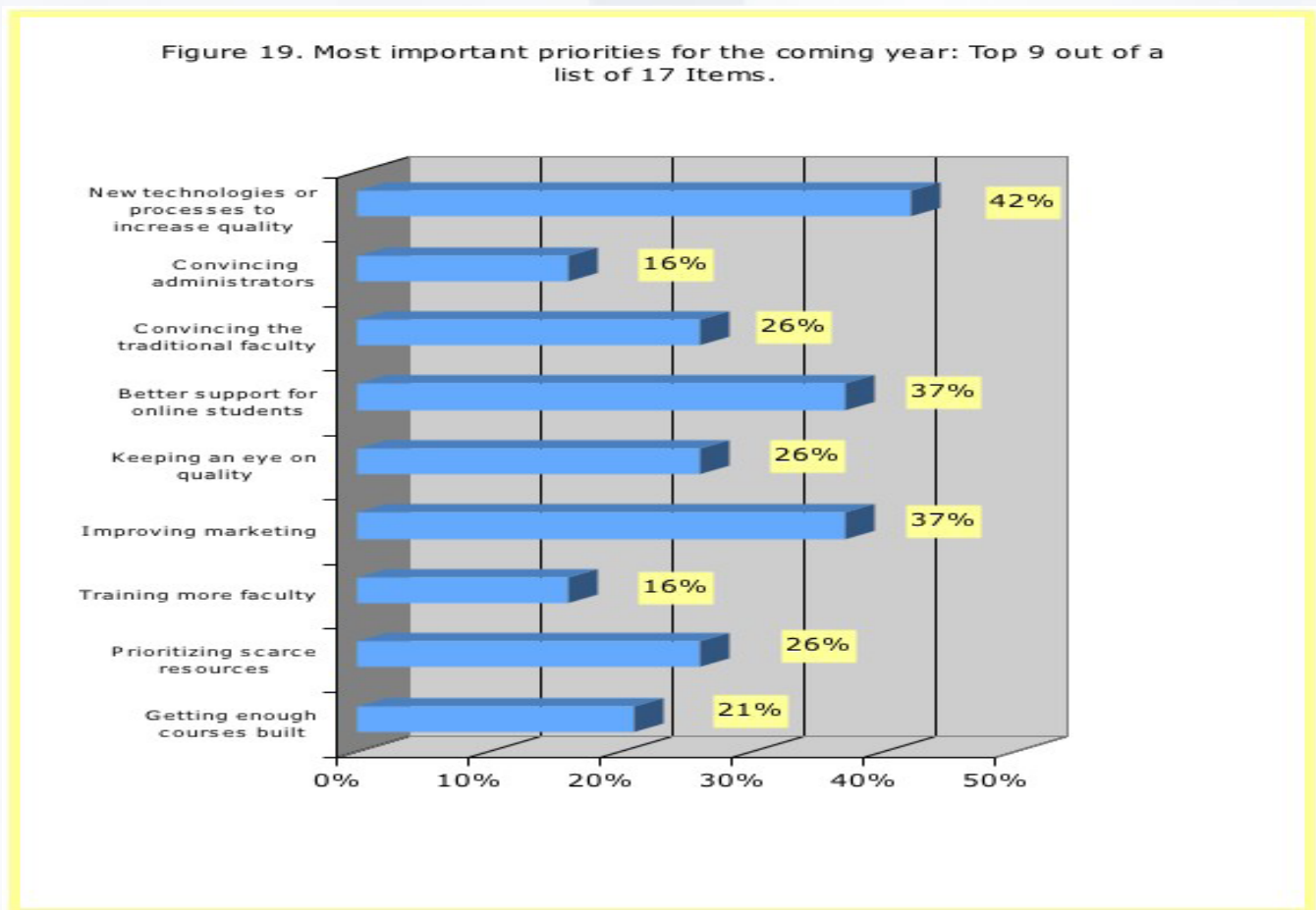- Very competitive — 11%

active courses came out at the top of the list. Tied for second were better support services for online students and improved marketing of online programs. Whereas course quality and student service came out as clear themes in the common denominators and best practices, this is the first time marketing has popped to the top of the list.

Coming Year Priorities. We asked the participants to select their three highest priorities for the coming twelve months. Implementing new technologies or processes to achieve higher quality/more inter-

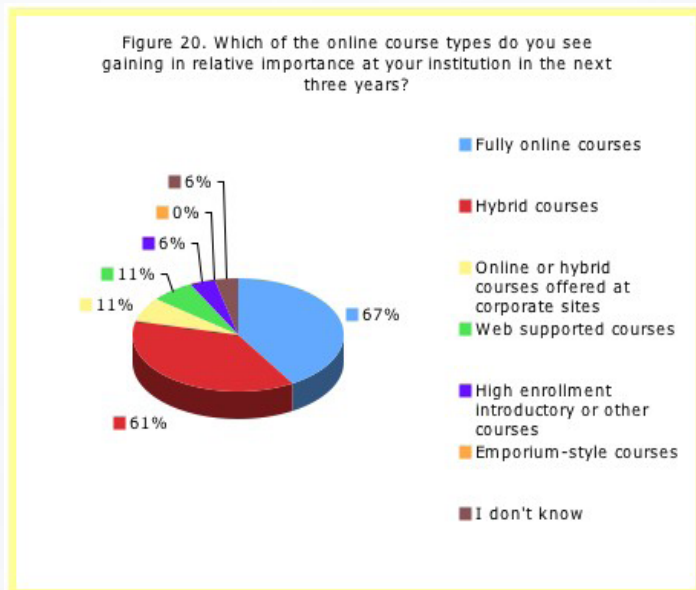**Internet-supported Learning Format and Capabilities Going Forward.** We asked the participating institutions which formats of delivery do they expect will get more emphasis at their institution in the future. The results, shown in Figure 20, indicate that these successful institutions see a growing emphasis on the already emphasized fully online courses. They also see a growing emphasis on hybrid courses that reduce or eliminate some class sessions. Almost startling is the degree to which there is agreement that web supported courses will not be receiving additional emphasis. Only 11% of respondents chose web supported courses as

Figure 19. Most important priorities for the coming year: Top 9 out of a list of 17 Items.

Priority	Percentage
New technologies or processes to increase quality	42%
Convincing administrators	16%
Convincing the traditional faculty	26%
Better support for online students	37%
Keeping an eye on quality	26%
Improving marketing	37%
Training more faculty	16%
Prioritizing scarce resources	26%
Getting enough courses built	21%

gaining in the next three years. Since most of the institutions in the study have implemented web supported courses, this appears to be a statement as to the value of these going forward.

Figure 20. Which of the online course types do you see gaining in relative importance at your institution in the next three years?

In the final survey, each of the participants was given a long list of 43 "e-Learning Capabilities" and asked to rate them with respect to emphasis over the next three years. The question was asked in a way to attempt to uncover four categories of capabilities:

- Those that have been designated as a critical priority
- Those that will get increased emphasis
- Those for which the institution is satisfied with the current level of progress and does not expect to do more
- Those that the institution has put some emphasis on in the past and has learned that this capability is less important than what they thought

Table 10 summarizes the top items in each category, assuming they received votes from at least 20% of the institutions.

Table 10. E-Learning Capabilities Next Three Years.

Top Priority	
Training and support of faculty (42%)	Feature and function improvements to course management platform (26%)
Marketing of e-Learning programs (32%)	Online marketing and recruiting (26%)
Better tracking of leads and/or applications from prospective students (32%)	Online library or reference services (26%)
Better online quizzing and testing products (32%)	Several at 21%
Plan to Give More Emphasis	
Greater inclusion of multimedia (audio or video into the online experience) (74%)	Learning object repositories or content management tools (58%)
Better products for online collaboration and discussions (53%)	New technologies for high-end course production (47%)
Online evaluation tools (course evaluations, surveys, etc.) (53%)	Several at 42%
Satisfied	
Partnerships with external providers for e-Learning platform (63%)	Ease of use of course management platform (53%)
Partnerships with external providers for faculty training and development (58%)	Partnerships with external providers for 24/7 support (47%)
Partnerships with external providers for course development services (58%)	Partnerships with external providers for student support services (47%)
Less Important	
None > 20%	

The results indicate that faculty support, program marketing and recruiting, new approaches to content development, and new technologies for content development or delivery will receive emphasis in the next three years. The results under the "Satisfied" section

in particular indicate strong satisfaction with external partners to date. This is consistent with 43% indicating in a different portion of the survey that an external partnership was either critical or very important to their success. While some capabilities received a few votes as less important, none represented 20% of the institutions.

Support Services. A similar ranking of importance over the next three years was posed with respect to both student support services and faculty support services. Table 11 contains the results for student support services. The respondents were presented with a list of 24 items.

Table 11. Student Support Services Next Three Years.

Top Priority	
Online student services (32%)	Online marketing and recruiting (26%)
Online or phone-based registration (32%)	Online or phone-based payment (26%)
Assessment of learning outcomes (32%)	A program coordinator to handle and resolve e-Learning support issues (26%)
Student orientation to online courses (26%)	Program specific website to market individual online programs (26%)
Highly available 24x7 course management system (26%)	Special programs to increase retention (26%)
Plan to Give More Emphasis	
Assessment of learning outcomes (63%)	Tracking of the achievement of graduates (raises, promotions, etc.) (53%)
Student orientation to online courses (58%)	Several at 42%
Online tutoring/academic support (58%)	
Satisfied	
Highly available 24x7 course management system (58%)	Student 24x7 customer care helpdesk - for any issues, technical or non-technical (47%)

Student web/email helpdesk (53%)	Student 24x7 technical helpdesk (47%)
Student phone helpdesk (53%)	Student focus groups or surveys to determine e-Learning program features most important to students (47%)
Program specific website to market individual online programs (47%)	
Less Important	
Non-program oriented community websites for students (26%)	

Table 12 contains the results for faculty support services. The respondents were presented with a list of 25 items.

Table 12. Faculty Support Services Next Three Years.

| Top Priority	
Establishing course quality standards (26%)	Course development support from support center staff (21%)
Faculty support website for technical support (26%)	Help from unbiased experts to assess the course quality and effectiveness (21%)
One-on-one instructional design consultations (21%)	Process and support to improve the course or program each term it is offered (21%)
Required comprehensive training before teaching online (21%)	
Additional fees paid to teach an online course (21%)	
Plan to Give More Emphasis	
One-on-one instructional design consultations (53%)	Course to develop the online course (47%)
Specific support resources for adjunct faculty (53%)	Program website to support faculty sharing of best practices (47%)

Course management or other technical training classes (47%)	Learning object repositories to aid program or course development (47%)
Satisfied	
Clear and effective policies for ownership of online materials (74%)	Course testing support prior to deployment (47%)
Faculty web/email helpdesk (58%)	Required comprehensive training before teaching online (42%)
Faculty phone help-desk (58%)	Formation of faculty team to redesign courses or programs (42%)
Faculty 24x7 helpdesk (58%)	Course development support from support center staff (42%)
Less Important	
None > 20%	

The tables are relatively self-explanatory. One overall conclusion is that assessment of learning outcomes seems to be a very strong focus for the next three years. Otherwise, the tables largely reaffirm some of the gaps in common practices that were seen in the analysis of section X, but adding a bit more detail in terms of quantifying the specific priorities over the next three years on a relative basis.

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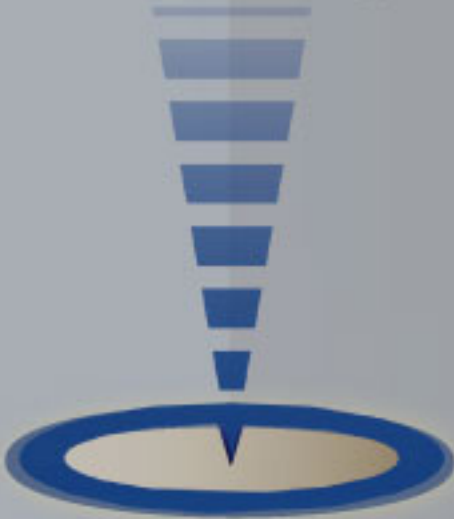
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"Let's review the key elements shown to achieve the most rapid and sustainable success and therefore potentially desirable to emulate."

Section XV: Action Recommendations- Where Do <u>You</u> Go From Here?

This study documented common denominators of successful Internet-supported learning initiatives. The desired impact is to enable more institutions to succeed in the application of Internet-supported learning.

Given the limited and biased sample of this study it is impossible to conclude on the activities in the broader market. There is no way to tell from this study how many institutions are may be more successful or less successful than those in this sample. Based on the Sloan studies that are projecting growth in online enrollments of greater than 24% in the next year, our sample appears relatively average, perhaps in the middle of the pack. Based on the "Thwarted" Study we would conclude that our sample consisted of a set of true innovators who are a generation ahead of their peers.

Based on our personal experience working with institutions, the success that these institutions represent is probably, on average, about three years ahead of the pack. Some are in the pack, and others are five years ahead of the pack. But, on average we would interpret that most institutions, given the setting of a clear priorities and attention to the lessons in this report can get to similar levels of success in three to five years.

Let's review the key elements shown to achieve the most rapid and sustainable success and therefore potentially desirable to emulate:

- The motivation(s) for moving online must be understood and be consistent with the institutional mission. Service to students, in one way or the other, of one type or the other, must be at the core. This is not about technology; it is about service and mission.

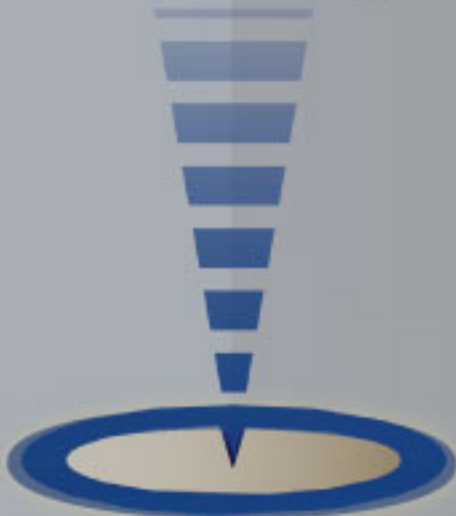- Leadership in the form of clear priority setting and invest-

ment of resources must come top-down, but in a way that includes nurturing and support of existing grass roots elements. This leadership must effectively include as many participants from the academic community as is feasible. A commitment to the long-term must be evident.

- Measures of success focused on learning and quality should be developed with the expectation that these measures will evolve. Feedback on student satisfaction is critical. Growth targets should be set and monitored. A system of measures that balance growth, quality, and financial performance should be developed and monitored.

- Consider the most successful student and faculty support services as described in section X of this report. For each that is a fit with your mission, make sure you can successfully implement it. Many of the participants in this study partnered with external providers for some of these capabilities. A choice needs to be made whether to implement internally or externally. 58% of the participants agreed that external partnerships would become more important in the next five years.

- Most importantly, take a "programmatic approach" to Internet-supported learning. Include in your objectives enabling and improving full programs of study through the initiative. This approach will make it easier to focus all of the preceding steps and most likely provide greatest value to the target population of students and faculty.

- Focus on and create your own best practices and initiatives guided by the needs of your programs, students, and faculty. This study shows that these institutions have been very creative in developing a unique value-add that fits their circumstances. So should you.

- Read the profiles in section VI of this report and if one of the participant situations is similar to yours, contact them to get advice. Contact information is published in Appendix A explicitly for this purpose.

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"At a minimum the move to online is a chance to improve the current program . . to create a better educational product. Many have gone further in addressing strategic, cultural and process issues."

## Section XVI: Perspectives on Adoption- Some Ideas to Consider

A Market Development Perspective. Let us now go back to the question raised in section II, that is, is this "Thwarted Innovation" or "Entering the Mainstream?" Clearly in the sample for this study we are looking at the later. From a classic market development perspective we have clearly witnessed in this sample set many examples of the classic "Crossing the Chasm" (Moore, 1991) into the mainstream market through a focus on a segment or niche with a strong "compelling reason to buy". The segment we are primarily referring to are adult learners. However, non-residential students, students pressed for time, high school students who want a college experience without coming to campus, are other examples of segments with a strong compelling reason to buy. Since estimates put the adult learner population through 2012 as at least 40% of the total degree seeking population (Gerald & Hussar, 2002) it does not make sense to call the adult segment a "niche" market.

The findings of this study indicate that we are in the early majority of the mainstream. Marketing and branding is becoming more important as the competition is beginning to increase. There has been speculation as to how this more intense competition will impact the various players (Gallagher, 2004). However, consistent with the early majority phase we are seeing a market for online where the demand greatly outstrips the supply.

As part of the study we asked the participants to speculate on the broader market over the next five years. The responses to several of the statements concerning adoption and competition are shown in Figure 21. There is very strong agreement that 80% or more of institutions in the broader market will embrace e-Learning. The institutions are split on whether this will mean that institutions will need to narrow their focus (on specific programs or student populations) in order to more effectively compete as e-Learning spreads. Less than 45% agreed that e-Learning will have little effect on competition.

Figure 21. Agreement with Statements on the Broader Market in the Next Five Years.
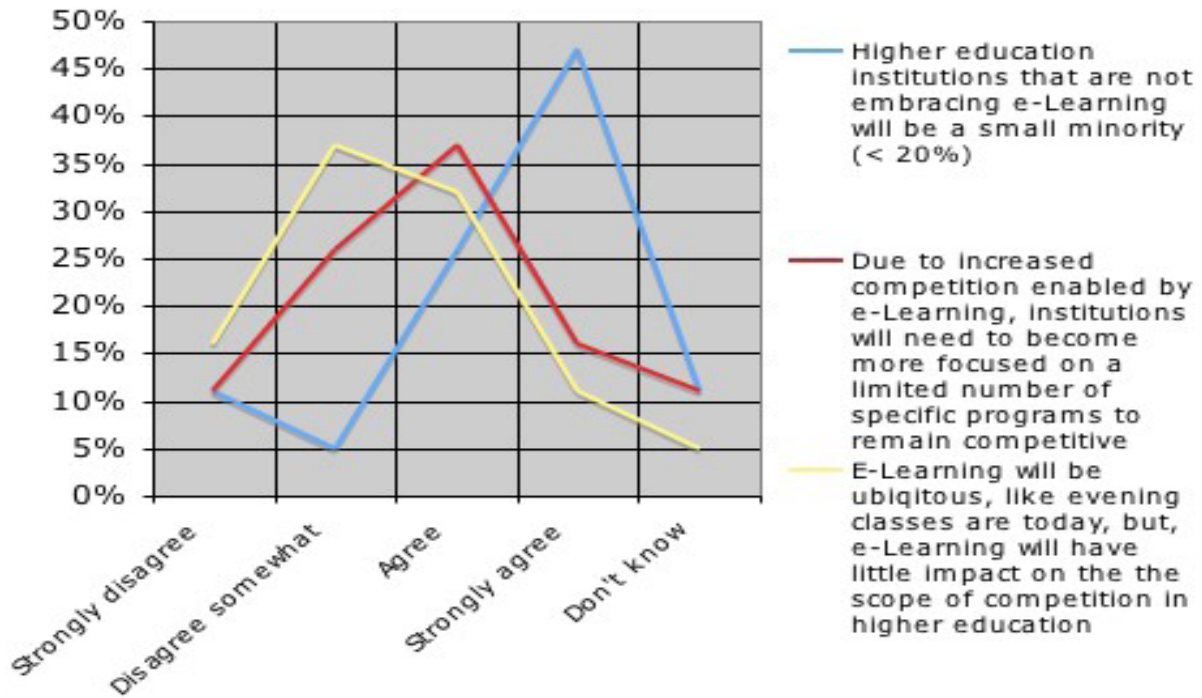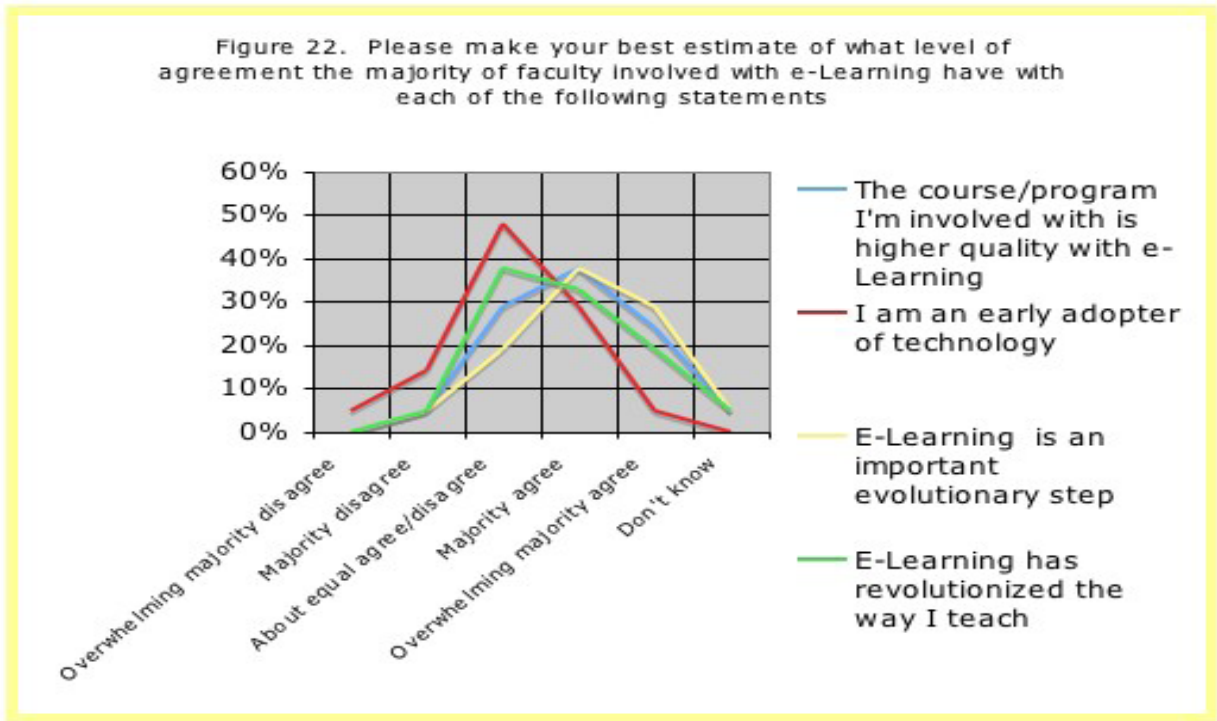
The "Thwarted" Study (Zemsky & Massy, 2004a) presents an interesting theory on adoption, essentially proposing that there are at least four adoptions occurring simultaneously, each in different phases. The first two are adoptions of relatively simplistic supplementary technologies like email and CMS systems that improve communication but do not fundamentally alter the learning process. The later two involve more sophisticated development of content in new instructional approaches that are considered to be true innovations (from the perspective of the authors).

The "Thwarted" perspective of adoption seems to be referring more to adoption by the faculty users than by the marketplace of student adopters. Although we are not sure if this was the intention of the study, it strikes us as saying that if we were interested in understanding the adoption of a new ice cream product at the ballpark we should be primarily concerned about the adoption characteristics of the vendors as opposed

to the fans who consume the final product. Obviously higher education is different than ice cream, but the exaggeration makes the point that we shouldn't lose sight of what adoption we are talking about. As stated above, the market for adoption of e-Learning by the student consumers has all the makings of being in the early majority.

However, in this study we are very aware of the importance of faculty in the adoption equation and asked for the perception of how faculty feel about their experience with e-Learning. Figure 22 charts out some key responses. As mentioned earlier, the figure shows that there was a clear majority that believed that online courses or programs were not just as good, but higher quality than their face-to-face counterpart. The figure also shows that even in these successful institutions there is a bias toward early adopters of technology. However, the expected attitudes toward evolutionary versus revolutionary impact surprised us. While there is clearly more agreement that going online has been an impor-

Figure 22. Please make your best estimate of what level of agreement the majority of faculty involved with e-Learning have with each of the following statements

tant evolutionary step (68%), greater than 50% also believe that e-Learning has revolutionized the manner in which faculty teach.
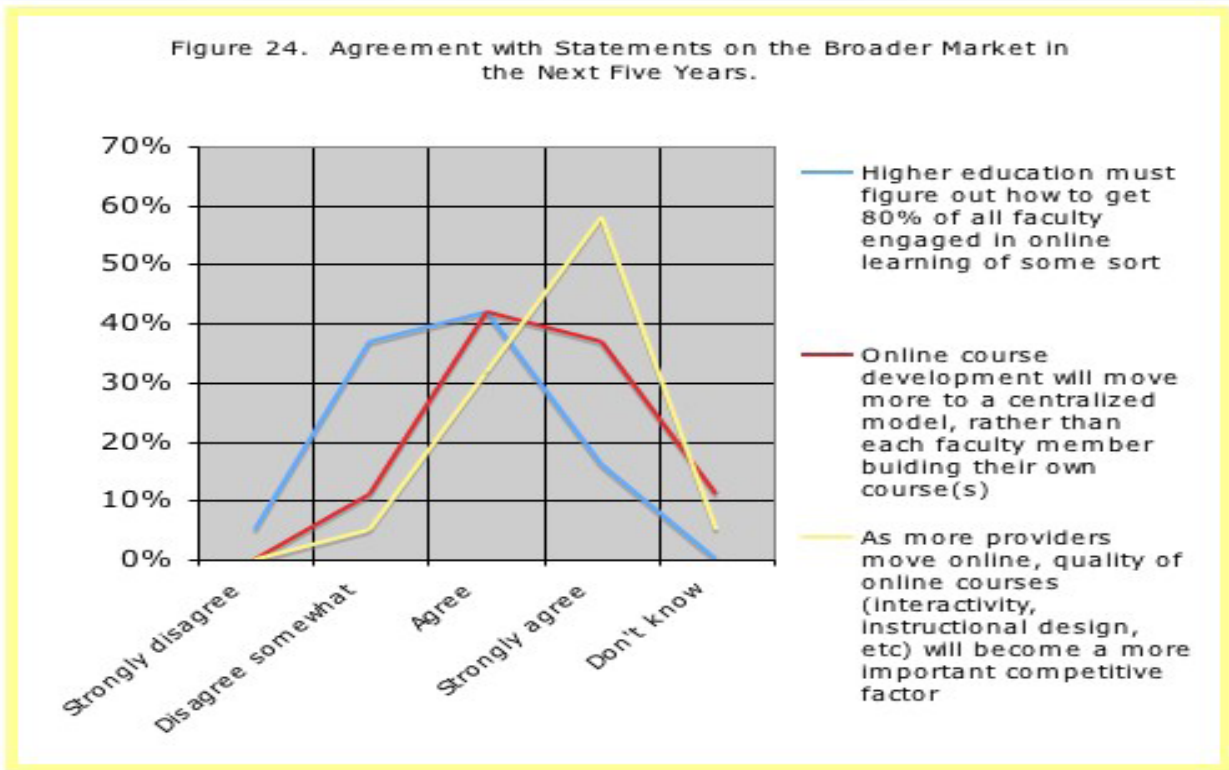
Among the participant institutions there were clearly some differing attitudes about what level of faculty participation is required, even in the long-run. Figure 23 illustrates the range of attitudes. While 11% feel that is absolutely critical to engage 100% of faculty in the online endeavors, which one might view as an extreme position, 26% believe it is not important. The

majority, 63% felt it was either very important or somewhat important.
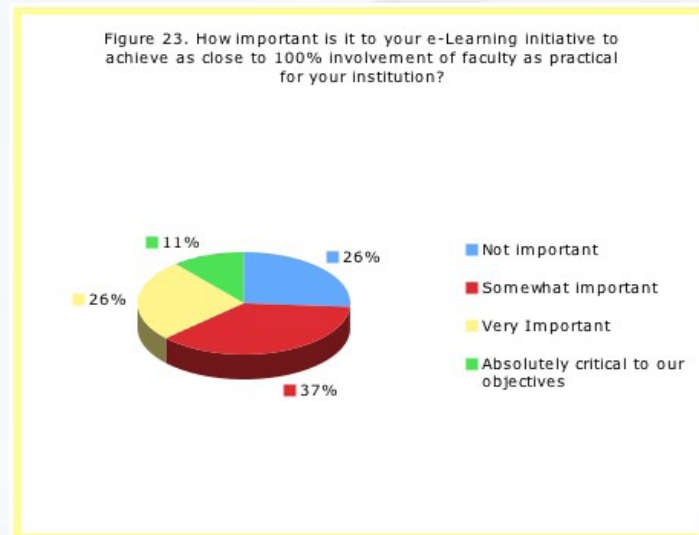
How will the involvement of faculty evolve, especially with regard to course production? Figure 24 shows the answers to some questions we asked in this regard. Almost 80% of the participants believe that even across the broader market courses will move to a more centralized development group. Several of the institutions in this study have already moved strongly in this direction. It is a good fit with the programmatic approach. It also fits well with another broader market prediction shown in the figure which is that as e-Learning causes greater competition, course/instructional quality will be more important. So, in essence this is predicting a world where faculty become better at teaching and content gets a richer, more centralized resource (most likely prioritized by institutional leadership).

Perhaps the most relevant finding from this study with respect to faculty adoption relates to the "Thwarted" study's fourth adoption category of "the development of new course/program configurations" (Zemsky & Massy, 2004a). The current study provides strong evidence that institutions and at least a core of

Figure 23. How important is it to your e-Learning initiative to achieve as close to 100% involvement of faculty as practical for your institution?

Figure 24. Agreement with Statements on the Broader Market in the Next Five Years.

participating faculty have moved right past the third adoption cycle of "learning objects" right through to new course/program configurations. Numerous data points already covered in this report support this conclusion:

- The overwhelming focus on student needs and quality revealed throughout the study points to the desire of the participants to implement new course/program configurations to meet student needs. While many of these have to do with convenience, they also have to do with more effective and relevant learning, such as increased self-directed learning activities.

- The belief that online courses/programs are higher quality reveals that there has been an emphasis on making them better. How else to do this than through new program/course configurations?

- The best practice of a "programmatic approach" implemented at some level by 71% of these successful institutions, has associated with it best practices of program redesign sessions to facilitate faculty leaders creating a bet-

ter program and pedagogy defined to reflect the uniqueness of the program (see Table 7 in section XI), both of which will encourage new program/course configurations.

- While there is a strong interest in "learning objects" and content management, lack of progress in this adoption cycle seems to have had little impact on either market adoption or faculty progress.

As mentioned previously, a strong qualitative takeaway from this study was that these institutions were especially skilled at engendering grass-roots faculty activities. While there were many views expressed, one that we found very down-to-earth was, "I found it important to have faculty become involved with a minimum of interference with their current method of pedagogy . . . As time progresses, student feedback and help from our instructional designers and IT folks help to change that initial pedagogy to something that improves learning." In short, high quality online courses at this stage of evolution seem to have more to do with effective teaching than other factors. So, it is important

to not hinder faculty, but rather to empower them.

A Macro Perspective. In section IV we introduced capacity, cost, and attainment in asking, "How relevant is Internet-supported learning to the future of higher education?" While this study has explored many of the micro factors associated with success in online learning, we believe the connections to the macro picture are clear:

- Capacity: If we are to take the online growth results and objectives of these institutions, as well as the results of the Sloan "Entering" Study, e-Learning is showing the potential to handle growth rates in the double digits, much faster than the growth of traditional higher education (in the absence of opening new schools). Several of the institutions in this study used e-Learning to address limitations on physical space.

- Cost: Cost containment is not popular with many in higher education. However, as pointed out in (Vedder, 2004), there will be more and more scrutiny of cost as it relates to price. If nothing else, there should be facilities and extracurricular activity cost savings from online learning. Many of the participants in this study were reducing or eliminating physical class sessions and therefore enabling more effective use of resources.

- Attainment: Most importantly, the focus of these successful institutions is on student success. Especially when implementing a programmatic approach, these institutions are stepping up to the plate to take responsibility for improved student learning, both through the course experience and the overall set of student services offered.

A Systems Theory Perspective. Finally, despite the success to date of Internet-supported Learning in institutions like those in this study, are there larger forces than those discussed so far that can derail its progress? Since higher education provides both public and private "goods" (Graves, 2002), it exists within a complex set of relations with large amorphous entities that can exert a large influence.

One set of such forces are the emerging market forces in higher education which some have argued are driving the system more and more towards an emphasis on the private good to the neglect of the public good (Newman *et al.*, 2004). It appears that emerging market forces will tend to promote the success of e-Learning as they have to date, but might there arise high profile issues of poor quality by perhaps a few operators that might tarnish the larger set of institutions? The institutions in this study appeared to have largely addressed the quality issue by achieving the same accreditation for their online programs as their traditional programs.

Another set of forces is the influence of government, both at the state and federal levels. Newman (Newman et al., 2004) details the importance of the compact between the state and each individual institution and the state and the system of higher education as a whole. This compact sets the tone of the market and helps direct it toward the public good. Institutions may be able to increase capacity through Internet-supported learning, but will the State reinforce this benefit or deter it? Will the State reward institutions that show more effective use of resources? How will interstate commerce come into play? One institution in the study pointed to not being able to get some states to approve a distance program with onsite meetings whereas they would approve a purely online program. This seemed counter to supporting quality educational alternatives (from the perspective that a onsite meetings enhance quality for the students).

A third set of forces comes from, arguably, within the academy. It is the predominate focus on prestige as the ultimate and growing goal of what seems like a majority of higher education institutions (Newman et al., 2004). This is a powerful force that is reinforced through the success and influence of graduates from high prestige schools as well as the proliferation college rankings. As new learning alternatives continue to expand through e-Learning will the academy and society be able to compare learning with prestige? Will learning ever be considered more valuable than prestige? If so, where will or should this change originate, from within or outside the academy?

No one knows how these forces will influence Internet-supported Learning, but they must be considered in understanding the complete picture. It is clear that these successful institutions participating in this study are focused on Internet-supported learning as an enabler that can improve performance of the mission and enhance service to students. Therefore, we can speculate that as more institutions begin to address the intersection of mission and service to students with Internet-supported learning, they are achieving much more than becoming skilled at a new technology. At a minimum they are viewing the move to online as a chance to improve the current program. That is, to create a better educational product. However, many have gone much further in addressing strategic, cultural and process issues that will help them perform their mission more effectively in the future.

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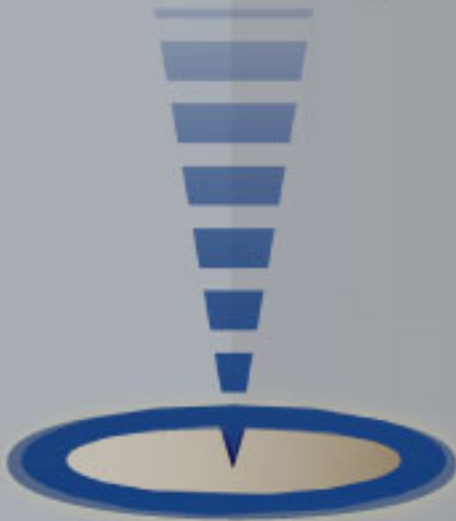
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Appendix A: Participant Contacts and Sponsors

The following institutions, organizations and corporations made this study possible. Sponsors provided an introduction to the participating institutions, but did not partake substantially in the study. The contact information shown has been provided voluntarily.

Participant Institution	Participant Contact Email	Sponsoring Organization	Sponsor Contact Email
Broward Community College	radkins@broward.edu	SunGard Collegis Inc.	sdecastro@sungardcollegis.com
Dallas Baptist University	online@dbu.edu	SunGard Collegis Inc.	sdecastro@sungardcollegis.com
El Centro Community College	tminnett@dcccd.edu	Tegrity Inc.	david@tuso-tegrity.com
Florida Hospitals College of Health Sciences (FHCHS)	don.williams@fhchs.edu	Compass Knowledge Group	GPickar@compassknowledge.com
Iowa Community College Online Consortium	srheinschmidt@secc.cc.ia.us	eCollege	kristie@ecollege.com
Johns Hopkins University Engineering and Applied Science Programs for Professionals	Allan.Bjerkaas@jhuapl.edu steinberg@jhu.edu	N/A	N/A
Kansas State University	beth@ksu.edu	Tegrity Inc.	david@tuso-tegrity.com
Medical College of Georgia, School of Allied Health	JMeyer@mcg.edu	Tegrity Inc.	david@tuso-tegrity.com
Michigan State University	brownb@msu.edu	Angel Learning, Inc	nancys@angellearning.com
Montana State University, Billings	rrhine@msubillings.edu	eCollege	kristie@ecollege.com
Montgomery College	Buddy.muse@montgomerycollege.edu	SunGard Collegis Inc.	sdecastro@sungardcollegis.com

Internet-supported Learning

Participant Institution	Participant Contact Email	Sponsoring Organization	Sponsor Contact Email
Ocean County College	jmcginty@ocean.edu	SunGard Collegis Inc.	sdecastro@sungardcollegis.com
Park University	Thomas.Peterman@park.edu	eCollege	kristie@ecollege.com
Peirce College	AACaliendo@peirce.edu	eCollege	kristie@ecollege.com
Penn State University	jth@psu.edu	Angel Learning, Inc	nancys@angellearning.com
University of Baltimore	rlegon@ubalt.edu	N/A	N/A
University of Cincinnati	melody.clark@uc.edu	Compass Knowledge Group	GPickar@compassknowledge.com
University of Colorado Boulder, College of Engineering	mario.vidalon@colorado.edu	Tegrity Inc.	david@tuso-tegrity.com
University of Florida	riffee@cop.ufl.edu	Compass Knowledge Group	GPickar@compassknowledge.com
Virginia Tech Math Emporium Linear Algebra Course	hannsgen@calvin.math.vt.edu	N/A	N/A
Westwood College Online	smcalmont@westwood.edu	eCollege	kristie@ecollege.com

Appendix B: Primary Respondent Titles

- Director of Online Education

- Senior Director, Teaching and Learning with Technology

- Professor Mathematics, Emeritus

- Coordinator of Instructional Technology Support

- Acting Director of Distance Learning

- Director, Online Consortium

- President & CEO

- Vice President, Technology & Campus Services

- Director of e-Learning

- Associate VP for Instructional Technology

- President, Online Programs

- Executive Director

- Associate Provost and Dean of Pharmacy

- Vice President for Distance Learning

- Senior Vice President for Academic Administration

- Vice Provost (CIO) and Dean of Cont. Education

- Dean

- Distance Education Coordinator

- Associate Dean

- Director of Education Systems Management

- Director

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Appendix C: Subject Matter of Exemplary Courses and Programs

- Introduction to Fine Arts
- Linear Algebra
- Physics
- English 101
- Intro to Psychology
- Business Administration
- Information Technology
- Introduction to Computers
- Paralegal Studies
- Economics
- MBA
- Nursing
- Design
- Computer Science
- Pharm.D.
- Criminal Justice
- Criminal Justice Administration
- Radiologic Sciences
- New Jersey History

- Forensic Sciences
- Doctor of Audiology
- Social Psychology
- Educational Administration
- Addictions Studies
- Liberal Studies
- Communications
- Health Administration
- Telecommunications
- Engineering Management
- Electrical and Computer Engineering
- Agribusiness
- Dietetics
- Echocardiography
- Information Technology
- Medical Staff Services
- Computer Fundamentals
- Microbiology

Appendix D: Study Sponsor Information

ANGEL Learning

ANGEL Learning develops and markets ANGEL|LMS the web-based learning management system (LMS) that combines an open and flexible architecture with a complete set of easy-to-use features. This proven, powerful system allows instructors to efficiently manage instruction, develop sophisticated, collaborative learning experiences, and, most importantly, improve learning outcomes. ANGEL Learning evolved from research and teaching experience at Indiana University-Purdue University Indianapolis. Today, though ANGEL Learning has grown from a campus-based organization to a profitable firm with global reach, the company stays loyal to its academic roots. Recognized for product innovation including learning object repositories, ePortfolio capability, and standards-based interoperability, ANGEL Learning backs its offerings with zealous customer support unparalleled in the industry and offers a full complement of education, training, and customization services. ANGEL Learning customers include Penn State University, Michigan State University, Kentucky Virtual University, Providence College, and TIAA-CREF. Visit the ANGEL Learning web site at www.angellearning.com.

Compass Knowledge Group

Your Brand of Higher Education Our Brand of e-Learning

Compass Knowledge Group is a premier provider of distance learning and e-learning solutions. Located in Orlando, Florida, Compass provides customized e-learning services for public and private institutions, large and small colleges and universities in a variety of disciplines, with extensive experience in the development of a highly predictable student recruitment and retention business model. Services include end-to-end marketing, student recruitment, e-learning, and retention services for higher education institutions to create and deliver online degree and certificate programs. Our distance learning experts can provide: strategic planning, building a distance learning business infrastructure, or launching and managing an online degree or certificate program. Flexible service options though a consulting or partnership relationship enable the institution to tailor a distance learning strategy designed to meet specific goals and extend program reach worldwide.

eCollege

eCollege is the leading outsource technology & services provider to post-secondary education for fully online degree and certificate programs. The Company powers some of the most successful, fastest growing online programs in the country. Supplying unsurpassed system scalability, reliability and security, eCollege also provides full support services to administrators, faculty and students. eCollege's ultimate commitment is to a high quality user experience that will drive student (and faculty) retention and long-term program success. In addition to core eLearning solutions, eCollege offers Content Management and Business Intelligence tools to assist institutions with operational efficiencies, continual program improvement and regulatory compliance (accreditation, Title IV, etc.).

Datamark, a wholly owned subsidiary of eCollege, provides growth-minded institutions with comprehensive research-based marketing services to drive new student enrollment for both on-campus and online programs. Enrollment marketing solutions generate on-target leads via various mediums (mail, interactive, print, broadcast media, etc.), as well as provide technology-driven lead conversion campaigns to increase lead-to-enroll rates.

SunGard Collegis Inc.

Collegis, an operating unit of SunGard, helps colleges and universities strategically align technology resources with their academic mission. This is accomplished by delivering a variety of long-term outsourcing solutions related to the management of technology, ERP implementations, and the integration of technology in the classroom and online.

Serving colleges and universities since 1986, Collegis offers an unparalleled depth and breadth of higher education expertise. Through proven methodologies and drawing upon a network of nearly a 1,000 technology and academic specialists, Collegis provides the leadership to help its clients better manage technology resources to improve institutional performance. Visit www.sungardcollegis.com for additional information.

Tegrity Inc.

Since 1995, Tegrity has provided award-winning products that improve learning and increase enrollment at educational institutions. The ground-breaking new Tegrity Campus is a studentcentric solution designed to be deployed institution-wide and used by every student. It automatically populates the university server with recordings of every professor from every classroom. Students, studying from their own handwritten notes, can replay the exact moment from any class by simply clicking on a note or accessing recordings directly. This powerful capability saves time, makes study more effective and improves academic achievement. Tegrity has helped over 350 institutions better serve more traditional and non-traditional students. Learn more at www.tegrity.com.