



Education & Training

Distributed Learning: Building Schools Without Walls

Team

Michael T. Moe, CFA*
First Vice President
(1) 415 954-8410
Mmoe@exchange.ml.com

Kathleen Bailey
Assitant Vice President
(1) 415 954-8414
kbailey@exchange.ml.com

Rhoda Lau
Industry Analyst
(1) 415 954-8416
rlau@exchange.ml.com

* Coordinator

Apollo Group

(APOL: \$25 7/8: C-1-1-9)

Charting the course in distributed learning

- **University of Phoenix (UOP), a subsidiary of Apollo Group, is the largest private university in the United States and one of the first pioneers to explore the new world of distributed learning.**
- **UOP has the largest distributed learning program with more than 9,000 students enrolled; more than 5,000 are on-line.**
- **UOP's unique business model focuses solely on serving the educational needs of working adults over the age of 25, an audience that fully appreciates the flexibility of distributed learning courses.**
- **Working under the desire to provide adults with a convenient education, Apollo understands that individuals have different learning styles and needs. Accordingly, the company offers a choice of different distributed learning models ranging from correspondence courses to online interactive classes. Apollo expects to soon be able to offer real-time synchronous courses via a partnership with Hughes Network Systems.**
- **UOP's distributed learning program is an excellent example of the opportunity created through the powerful combination of technology, strong academic content and highly marketable brand names.**

Impact Assessment

Strengths

- + Increase access to education
- + Increase access to best content
- + Decrease cost of education
- + Increase effectiveness

Opportunities

- + Emergence of technology and service providers serving the needs of Postsecondary Institutions
- + Traditional "bricks and mortar" schools offering online programs

Weaknesses

- Limited bandwidth
- Dilution of brand name
- Current lack of technology standards

Threats

- With geography no longer a barrier, brand name becomes the differentiating factor for students

The internet provides opportunities for filling unmet educational needs, creating the ability to reach more students at a lower cost.

We believe the immediate opportunity for investors lies in the post-secondary market.

Technology has the potential to further “democratize” education by removing obstacles and revolutionizing the delivery of educational content.

The internet, video-conferencing and satellite systems can deliver educational content almost anywhere.

Distributed Learning in the New Economy

While the term e-commerce to many brings to mind the purchase of “atoms” such as clothing or books, online, in the case of education and training, the real opportunity is not so much in the commerce of products, in our view, but the commerce of services. Technology, especially the internet, provides opportunities for filling unmet education needs, creating the ability to reach more students with more targeted content at a lower cost. Technology has already begun to infuse all aspects of education in our country today, from school children who use the internet to participate in virtual field trips to Africa, to adults who earn master’s degrees online while juggling family and work responsibilities, to corporate employees who access up-to-date IT courseware at their desktops.

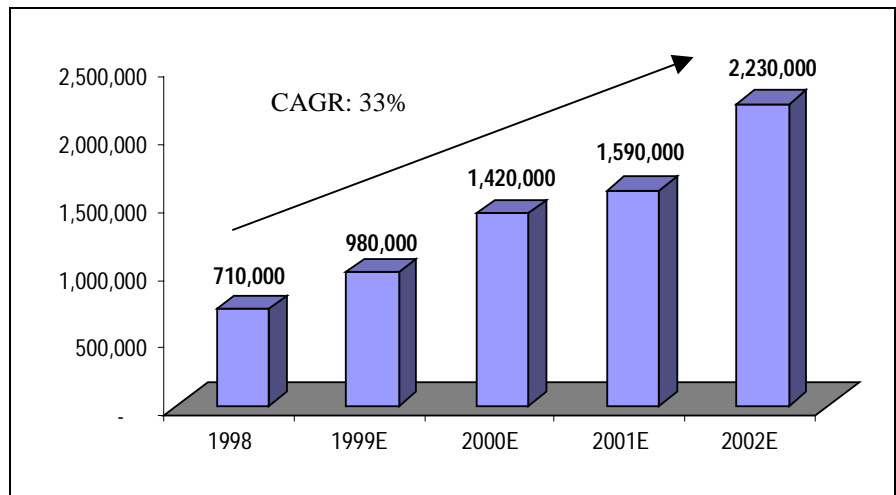
While the internet has already begun to transform the entire education and training industry, including the K-12 and corporate training sectors, we believe the immediate opportunity for investors lies in the postsecondary market.

Power of “.edu”

Education is the fuel for the New Economy, making the concept of a four-year degree (where learning is limited to a finite period of time) obsolete and lifelong learning a reality. Unfortunately and ironically, at a time when education is more important than at any point in our history, it is also becoming less accessible and more costly. Most schools are designed to serve the traditional 18 – 22 age group – i.e., classes during the day, semester system, no parking, dormitories, football team, marching band – totally irrelevant to most of the 6.1 million adult students that now represent nearly 50% of the postsecondary student population. Moreover, the price tag of an education has skyrocketed in the past two decades with tuition increasing fivefold, much faster than personal income and inflation. The cost of education (including tuition, room and board) can be as much as \$30,000 a year, equating to \$120,000 for a four-year undergraduate degree.

Technology has the potential to “democratize” education, removing these obstacles and revolutionizing the delivery of educational content. The internet, video-conferencing and satellite systems can eliminate the scheduling and monetary barriers many face by delivering educational content to students’ homes or marketplaces, reducing its cost and increasing geographic accessibility to the growing population of students, creating schools without walls.

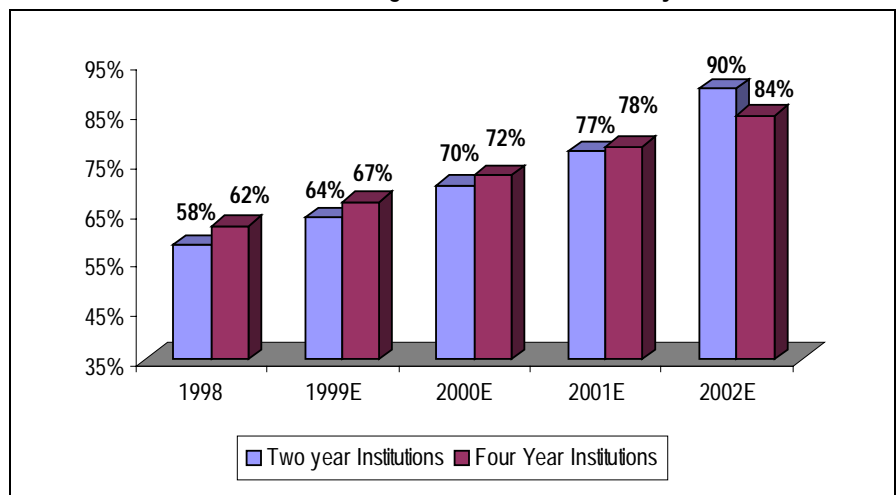
In the past few years, we have seen a dramatic uptick in the number of public and private colleges and universities that are seeking to develop education delivery systems that combine the best of traditional classroom instruction with the power of technology. This is illustrated by the growth in students enrolled in distributed learning and the number of distributed learning courses offered by two and four year institutions. In 1998, 710,000 students were enrolled in distributed courses, a figure that is expected to jump to 2.23 million in 2002, representing a compound annual growth rate of 33%.

Chart 1: Enrollment Growth in Distributed Learning Courses


Source: International Data Corporation

Some 84% of four-year colleges will be offering distance learning courses in 2002, up from 62% in 1998.

Approximately 84% of four-year colleges are expected to offer distance learning courses in 2002, up from 62% in 1998. Two-year colleges, are also quickly moving into the distributed learning arena with 85% expected to offer distance learning courses in 2002, up from 58% in 1998.

Chart 2: Growth in Distributed Learning Courses at Two and Four year Institutions


Source: International Data Corporation

Perhaps most illustrative of the rapid acceptance of distributed learning is the adoption of this new education model by some of the world's finest institutions:

Some top-tier schools are adapting this new educational model.

- Stanford University last fall inaugurated a master's degree program in electrical engineering that can be taken over the internet using streaming video and audio.
- Harvard University too went online, when its Extension School began offering one of its computer courses on the web, with lectures digitally taped and archived.
- University of Pennsylvania's Wharton School has taken another approach, offering executive education courses via two-way interactive satellite through its partnership with Caliber Learning Network.

- Duke University's Fuqua School of Business has one of the most praised (and publicized) programs, offering a Global Executive MBA degree almost entirely through technology.

Adding to the evidence that the virtual university has indeed “arrived” is the recent accreditation of the first postsecondary institution to exist completely online. On March 9, 1999, Jones International University became the first online university to receive accreditation from a nationally recognized accrediting body. While other universities and colleges offer accredited online courses, Jones International University is currently the only accredited university that exists completely online without accompanying traditional “brick and mortar” classrooms.

While activity in this sector is certainly dynamic, not all universities have made wholesale shifts to meet this new learning model. Not surprisingly, there are skeptics concerned about the potential of diluting a university's brand name and reputation built over tens if not a hundred or two hundred years. Even so, we believe schools should not neglect the power of distributed learning as they will miss a significant opportunity to expand upon their educational mission and educate the citizens of the 21st century.

In response to the high demand for distributed learning courses, many schools are working together, pooling resources, expertise and course offerings.

1. Rapid Acceptance of Technology Enables Its Use in Learning

We believe the growing presence of technology in the workplace, home and classroom, will make distributed learning not only a logical, but preferred mode for education for many. In the past few years, the PC has achieved rapid penetration.

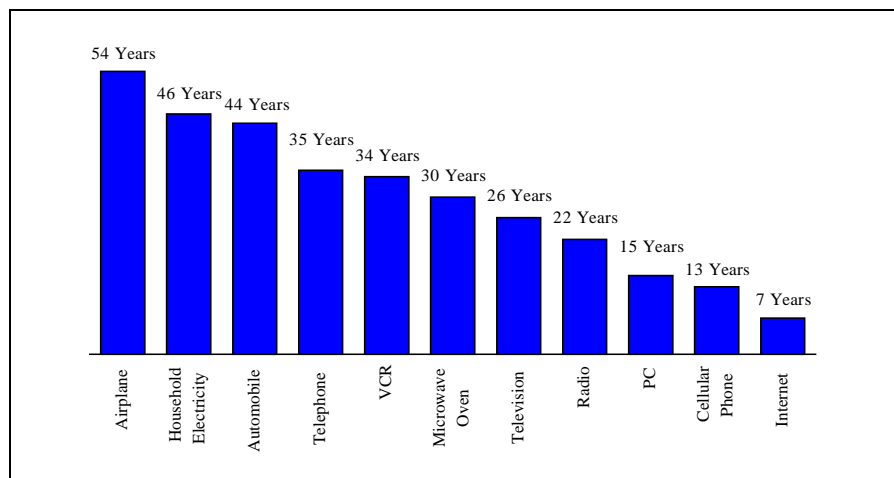
- At the corporate level, there is now one PC for every 1.6 employees.
- By 2002, 60% of households are forecasted to have PCs, up from just over 40% in 1997.
- Approximately 92% of college students have access to a PC at school. Moreover, approximately 55% of students own personal computers, a higher penetration rate than PC's have in the household.

Moreover, internet usage is exploding, growing at an unprecedented pace, reaching a 25% market share in only seven years, versus 35 years for the telephone and 30 years for the microwave.

Distributed learning is likely to be the educational method of choice for many students.

By one forecast, the internet is likely to have 320 million users in 2002, up from 14 million in 1995.

Chart 3: Years To Attain 25% Market Share



Source: Milken Institute

According to International Data Corporation (IDC), internet access is forecasted to grow to 320 million users in 2002, up from 14 million in 1995.

The pervasiveness of computers and internet in our lives today is illustrated by the growing integration of the World Wide Web and e-mail in university courses.

- One third of all college classes are using internet resources as part of the syllabus, compared with 25% in 1997 and 15% in 1996.
- Almost one fourth of all college courses are using World Wide Web pages for class materials and resources, compared with 8% in 1996 and only 4% in 1994.
- The percentage of classes using e-mail increased to 44% in 1998, up from just 8% in 1994.

We believe the growing presence of technology in the workplace, home and classroom is a key enabler to the adoption of distributed learning.

2. Compelling Benefits of Distributed Learning

In a time when many schools are under pressure to attract new students and revenue streams, they cannot ignore the compelling benefits of distributed learning. Distributed learning provides postsecondary schools with the ability to expand their reach to new markets and stay competitive and relevant in today's digital world. The benefits of technology-delivered education at the post-secondary level appear significant:

- **Increase Access to Education:** Education is a key determinant of economic success in the New Economy, yet 79% of adults over the age of 25 do not hold a bachelor degree. Distributed learning allows adults who have work, family and personal responsibilities, to access education at their convenience, anytime and anywhere.
- **Increase Access to Best Content:** Distributed learning also increases the reach of highly-regarded professionals or programs, providing students with the ability to potentially take courses from the Wharton School of Business, UCLA's screenwriting program or MIT's engineering programs. We believe top education brands, such as these (or a Harvard, Stanford or Columbia, for example) can find appropriate ways to leverage their quality content using distributed learning models.
- **Decrease Cost:** The cost of education can reach upwards of \$120,000 for a four-year undergraduate degree. While not all distributed learning programs are less expensive than classroom-based programs, many are, and most can be accessed from any location with a laptop and modem.
- **Increase Effectiveness:** A congressionally mandated review of 47 comparisons of multimedia instruction with more conventional approaches to instruction found time savings of 30%, improved achievement and cost savings of 30-40%. Further studies indicate that retention of certain subject matter may be up to 250% greater as a result of the immediacy of computer based training (CBT) and online training.

3. Reaching Audiences World Wide

Distributed learning enables schools to broaden their reach to include working adults and international students, as well as further serve the market for 18-to-24 year olds.

Working Adults: Working adults, who represent nearly 50% of postsecondary students (6.1 million individuals), in our view, are the perfect candidates for distributed learning courses. Working adults want to stay relevant in today's knowledge-based economy, yet when seeking education many find schools inaccessible, with either inconvenient schedules or expensive tuition.

Distributed learning provides post-secondary schools with the ability to expand their reach to new markets and stay competitive in today's digital world.

Pluses include savings in time and costs, and higher achievement.

Distributed learning lets schools broaden their reach to include working adults and international students, as well as further penetrate the market for 18-to-24 year olds.

A flexible, convenient learning solution.

- Among adults potentially interested in acquiring additional education or training, 54 percent report lack of time as a barrier, forty percent report that courses are not available at convenient times, and 25 percent consider distance between their home and educational institutions to be a barrier.
- Forty-one percent of participants in adult education said their “work schedule” made it difficult to participate in adult education, 37 percent said that “meeting times” constituted an obstacle, 30 percent said that family responsibilities interfered with their participation, and 22 percent cited the location of classes as a barrier

Distributed learning enables adults to schedule in education alongside with work, family and personal obligations, providing them with a flexible, convenient learning solution.

Traditional Students: The benefits of distributed learning have also caught the attention of younger students who are currently enrolled in traditional campus-based programs. A growing number of younger college students are working while in school, meaning they too are tempted by the convenience and flexibility of distributed learning programs. Approximately 84% of students at public, two-year institutions work while in school, and 76% of students attending both public and private four-year institutions also work. Moreover, 65% of students at public two-year colleges enroll part time. Distance education presents younger students with a flexible, convenient solution to gaining an education while working.

Serving pent-up demand in international markets.

International Markets: Unlike the U.S., where postsecondary education is relatively available, seats in postsecondary institutions in many parts of the world are limited. We believe that in the knowledge-based global economy, there is a huge opportunity to serve this pent up demand. Currently more than 400,000 foreign students study in the U.S., spending \$7 billion.

While many of these students study in the U.S. because they want the cultural experience of living in a new country or to attend a specific university, many likely came because they did not have access to a university education in their home country or did not have the diversity of choices that we enjoy in the U.S. We believe that for every one foreign student studying, there are three to five students who would if they had the resources or the access. Distributed learning makes it possible to serve these students who would never have had this opportunity before.

4. Apollo Group: Distributed Learning Groundbreaker

A new model in higher education.

One company that has done an exceptional job at leveraging its content into distributed learning education models is University of Phoenix (UOP), a subsidiary of Apollo Group, and the largest private university in the United States. UOP was one of the first pioneers to explore the uncharted terrain of the new world of distributed learning and now has over 9,000 students enrolled in its distributed learning courses, of which over 5,000 are online students. UOP's unique business model solely focuses on serving the educational needs of working adults over the age of 25, an audience that fully appreciates the flexibility of distributed learning courses. Working under the desire to provide adults with a convenient education, Apollo understands that individuals have different learning styles and needs. Accordingly, the company offers not one, but three, and soon four, different distributed learning models ranging from self-paced correspondence courses to online interactive classes. Apollo expects to soon be able to offer real-time synchronous courses via a partnership with Hughes Network Systems. We believe UOP's distributed learning program is an excellent example of the opportunity created through the powerful combination of technology, strong academic content and highly marketable brand names.

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5. Global Implications for 2005

By year 2005, we expect all US universities and colleges, public or private, as well as many schools in other nations to employ distributed learning courses. To help them in this large endeavor, we believe schools will solicit the assistance of outside technology and service providers.

We think these technology, software and service providers could become an attractive investment opportunity down the road. Several innovative (mostly still private) companies have emerged to serve the distributed learning requirements of colleges and universities, such as the Caliber Learning Network, Blackboard.com, Real Education, Pensare and OnlineLearning.net. Realizing the tremendous opportunity, companies that have typically served corporate and IT training markets, have also entered the scene, expanding their offerings to serve postsecondary institutions.

While it is a little too early to tell, in our opinion, which technology providers will win, we believe the companies that offer strong technology solutions and, as importantly, provide high levels of service to both content owners and students, have significant competitive advantage in the new era of technology-delivered education.

Investors can also participate in the fast growing distributed learning industry, albeit slightly more indirectly, by investing in proprietary postsecondary institutions that offer distributed learning solutions. While many of these postsecondary schools, such as Apollo Group, began as brick and mortar schools, they have found ways to leverage their quality content into new distributed learning education models, enabling them to expand their market presence and reach new audiences such as working adults and international students. Doing so in today's knowledge based economy may prove to be the biggest success of the **internet**, with online education becoming the internet's real "killer application." We see the internet having a big impact on education and training and vice versa. With internet-based education we can break the link between quality and access, "democratizing education."

Keep an eye on companies that serve the distributed learning requirements of colleges and universities.

Investors can also participate in the fast growing distributed learning industry, albeit slightly more indirectly, by investing in proprietary postsecondary institutions that offer distributed learning solutions.

Interesting Web Sites

www.apollogrp.com	Apollo Group
www.blackboard.com	Blackboard.com
www.caliberlearning.com	Caliber Learning Network
www.uwex.edu/disted/home.html	Distance Education Clearing House
www.educause.edu	Educause
www.educom.com	Educom
www.jonesinternational.edu	Jones International University
www.onlinelearning.net	OnlineLearning.net
www.pensare.com	Pensare
www.realeducation.com	Real Education
www.wested.org/tie/dlrm	The Distance Learning Resource Network (DLRN)
www.usdla.org	US Distance Learning Association

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