Banc of America Securities
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Education Industry Overview
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The e-Bang Theory

Illuminismo Volume 2

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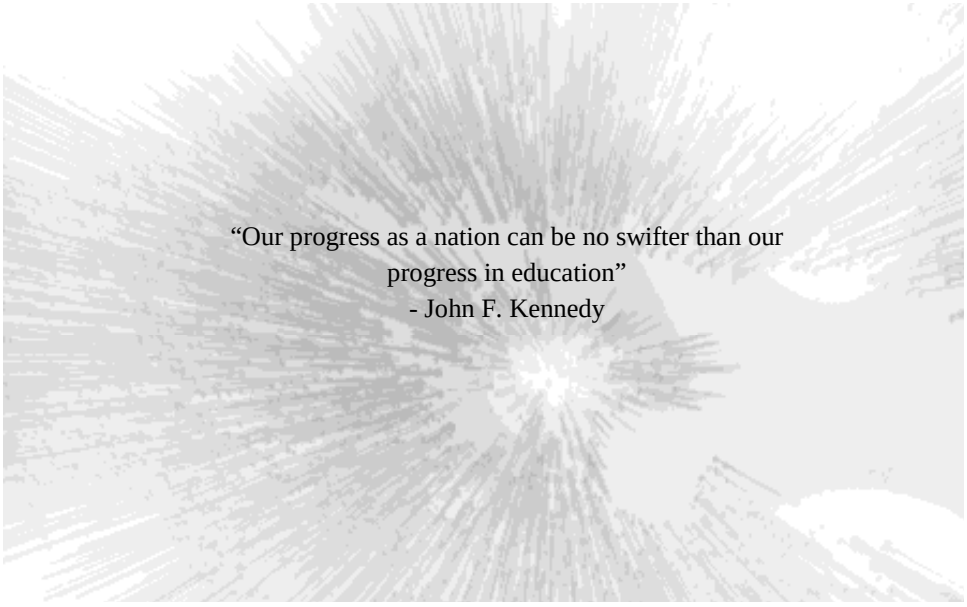
All prices throughout the report are as of 8/30/1999.

CHAPTER 1

INTRODUCTION



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Introduction

The landscape of learning has never looked more promising for companies in the business of education. Politics, economics and technology are key growth drivers.

- The **economy** is quickly becoming dependent on human capital, which forces all of us to increase our aptitude at managing and productively employing human capital, a task incumbent on our learning systems.
- **Political initiatives** are inviting more businesses inside the schoolhouse door than ever in the history of public education. These initiatives include charter school legislation and voucher programs.
- The inexorable technological revolution continuously overhauls the workplace, thereby forcing workers to treat learning as part of their basic job description. Technology is not only a driver for more learning, but it is also an enabler **of electronic learning (e-learning).**

E-learning is quickly establishing its presence in corporations, institutions of higher education and K-12 schools. Questions are abundant, however. Where did e-learning come from, what does it look like now and where is it going? **And, what do the answers tell investors about which businesses and business models could benefit from the evolution of e-learning?**

The Brawn Age to the Brain Age

Since the beginning of recorded time, physical strength (brawn) was vital in the "workplace." Most work required strength. As recently as this century, the workplace was dominated by men working on farms and in industry. To shine in farming and manufacturing jobs, workers needed brute strength and physical endurance.

Times have changed dramatically in a few short years. Our economy is based more on services than farming or manufacturing. Therefore, jobs today require more intellectual strength (brains) than physical strength (brawn).

With this migration away from farming and manufacturing and toward services and information-based production, workers need intellectual skills. The U.S. Labor Department estimates that by 2000, 85% of the nation's jobs will require education or training above the high school level, compared with 65% at the beginning of the decade and 40% in 1950.

> Compensation in elite jobs grew 2.5 times faster than compensation in blue-collar occupations, and 4.3 times faster than in service occupations between 1987 and 1996 (according to the U.S. Department of Commerce's report "The Emerging Digital Divide").

The intellectual demands of the economy are currently outstripping our capacity to satisfy it. **The highest-profile segment of the information-based economy is the information technology (IT) segment. That segment boasts:**

- The fastest-growing companies (Microsoft, Cisco and AOL, for starters).

- The fastest-growing labor shortages: programmers, network engineers and web experts.

According to the Information Technology Association of America, U.S. companies have approximately 346,000 vacant IT (information technology) jobs nationwide, leaving one in 10 jobs unfilled.

Many people pillory our public schools as the chief culprit in a widening skills gap in the workplace. We find the attacks specious at worst and unproductive at best. There is no empirical work that we are aware of that can establish any causal relationship between a shortage of skilled laborers in the workplace and the achievement level of our public schools.

We believe the important issue is that the skills gap is widening because the economy is undergoing magnificent and rapid changes. The evidence of a complex workplace is abundant. One need not look past our most common jobs to see the dramatic change in complexion:

- **The factory floor looks dramatically different.** Laborers must use computers to help identify the appropriate quantities, mixtures and sequences of assembly and where laborers perform under the watchful eye of a computer that will identify the slightest diversion from that prescription.
- The **inflow and outflow of vital shipments at the loading dock** are shepherded by a foreman who administers the critical movement of goods with his personal computer and computer wand.
- The **garage at the corner gas station** is on the outside no different than it looked for Gomer Pyle on Mayberry RFD. But Gomer's intuition has been replaced by electronic gauges and CD-ROMs loaded with up-to-date support and information. **Wouldn't you have loved to see Gomer with a mouse?**

- The **office** of nearly every employee in nearly every major corporation has a computer that is loaded with information and tools and is connected to a host of other computers, which are connected to a central server, and so on…

Each job description and job location above was unique. The only common element was a computer.

The demand for workers to fill high-skilled information technology jobs is likely to grow from 874,00 in 1996 to 1.8 million in 2006 (according to the U.S. Department of Commerce).

It is the ubiquity of computers (and the related software and hardware) that has single-handedly transformed our economy. And, somewhat ironically, in that transformation, the computer has driven the need for more learning to new heights as well as provided the vehicle to deliver that learning.

The Rising Stature of Intellectual Capital

Our globalized economy has rid many nations and companies of competitive advantages. Most companies have access to the same tools, raw materials and markets as their competitors. One of the few remaining advantages that businesses retain is their ability to squeeze more out of the inputs by applying another input—information or knowledge—in a more cost-effective, productive fashion.

Unique applications of intellectual capital can improve the output from the commodities (labor, capital, raw materials) that are accessible to competitors. Therefore:

- Knowledge and information are the source for the new competitive advantages.
- There is a need for perpetual education in order to sustain and improve the intellectual capital.
- The education system must be more cost-efficient and effective.

The ability to address the surging demand will be aided by increasing connectivity and the World Wide Web. **That is what this report is all about: understanding how increasing connectivity and the Web will enable us to address our surging need to learn. It is the world of e-learning.**

IDC reports that in 1997, 33% of business PCs were using the World Wide Web. In 1999, that number increased to 59% and is expected to reach 86% by 2002.

The timing is propitious. The improvement (speed and capabilities) and increasing access of the technology is converging with the soaring demand for more learning.

From Gutenberg to the Web

The Distance Education and Training Council (DETC) defines distance learning as the enrollment and study with an educational institution that provides lesson materials prepared in a sequential and logical order for study by students on their own.

DETC believes distances learning includes:

- A correspondence course in which the text and assignments are mailed to a student who completes the homework and returns it by mail to the instructor.
- A satellite transmission of a teacher in one city to a classroom in another city.
- An instructional video teaching a student financial management.

We find DETC's definition too narrow. It seems like it was tailored for higher education. We recognize how vast (no pun intended) distance learning can be, encompassing markets well beyond higher education or formal education. Therefore, **we believe distance learning is the interaction between a learner who strives to acquire knowledge or skills by instruction or study with a remote knowledge source—one that is physically separated from the learner.**

Therefore, it is no surprise that we believe distance learning is almost ancient. It began centuries ago with the written word. Writing enabled separation between instructor (knowledge source) and student. Therefore, **one could argue that Gutenberg's printing press was the first technological breakthrough that expanded the capabilities of distance learning**. It leveraged knowledge from the knowledge source to an infinite audience—or at least one that can read.

Arguably, video and/or the television was the second technological breakthrough for distance learning. Video bolstered the robustness of instruction that had been text-based. Now learners could see their instructor either live or taped, often times enhancing learning effectiveness with visual signals. Furthermore, technology was beginning to simplify distribution and lower the cost of learning.

Video-delivered learning was simple, but effective for limited audiences, topics and timeframes. The advantages included ease of replication, cost and access (nearly everyone has a VCR). Disadvantages, however, were numerous and included:

- Lack of interaction and customization.
- Scalability (challenges of widespread distribution).
- Disregard for learner levels or learning skills (teaching to the norm).

As computers proliferated in the workplace, the distribution of learning expanded to incorporate anyone with a desktop. Now multimedia (video, audio, graphics and animation) could enhance the learning effectiveness of any employee with an appropriately equipped desktop or laptop. This step addressed some of the scalability and distribution issues with video-based learning, increased the interactive nature of the content and integrated assessment and testing into the distance learning process.

UNIVERSITY ACCESS—A HYBRID APPROACH

www.universityaccess.com

Taking into account that not all learners are ready to totally dispense with traditional modes of learning, University Access (UA) has created a solution that integrates e-learning with video and print. UA calls its solution a teleweb course. UA provides the e-learning environment for interaction and assessment via the Web, the video provides the in depth content that is engaging, and the text serves as additional resources for the learner when he/she does not have access to the Internet.

UA provides undergraduate, graduate and corporate-related courses in a range of topics. The courses are provided through partnerships with colleges and universities around the country.

The biggest breakthrough for distance learning is the Internet. The Internet's universal accessibility and real-time interactive nature make it an ideal platform for distance learning.

A History of the Internet

Originally, the Internet was created as a communication system built to withstand a nuclear attack. The original system called ARPANET connected a handful of universities throughout the United States and was primarily used by scientists and engineers because of its complicated nature.

During the next several years, more user-friendly interfaces were developed and the use of e-mail increased. In the mid-1980s, e-mail became prevalent on college campuses. Professors used it to communicate, and libraries began to automate their catalogs. In 1991, gopher, the first user-friendly interface, was created at the University of Minnesota. From there, the interface was continually improved upon and eventually led to the World Wide Web and the interfaces commonly used today such as Netscape and Internet Explorer (Source: "A Brief History of the Internet" by Walt Howe).

The cost of computers has declined, and the Internet technologies that are now available make the World Wide Web an appealing entertainment and education medium that can compete with the television. With increased bandwidth it is now possible to receive audio and video over the Web at a

higher quality. The increasing speed of modems and new technologies to connect to the Internet such as digital subscriber lines and cable modems help make the Internet even more attractive.

The Internet is increasingly being used for education. Higher education institutions were involved in the initial creation of the Internet, so it is no surprise that higher education continues to be a leader in online learning.

Computer usage in colleges and universities is almost a requirement at this point. Some universities require students to have a PC upon enrollment. According to the IDC:

- 92.3% of four- and two-year college students use a PC at school.
- 86.6% of students at four-year colleges and 56.6% of students at two-year colleges use the Internet.

The Internet and its related technologies render a new world of learning—e-learning—which, in our view, improves the quality of distance learning. E-learning is a world of abundance: abundant needs being addressed by abundant types of people in abundant ways. Because of its abundance as well as its nascence, it is difficult to dissect.

Nonetheless, we will dissect.

Benefits of E-Learning

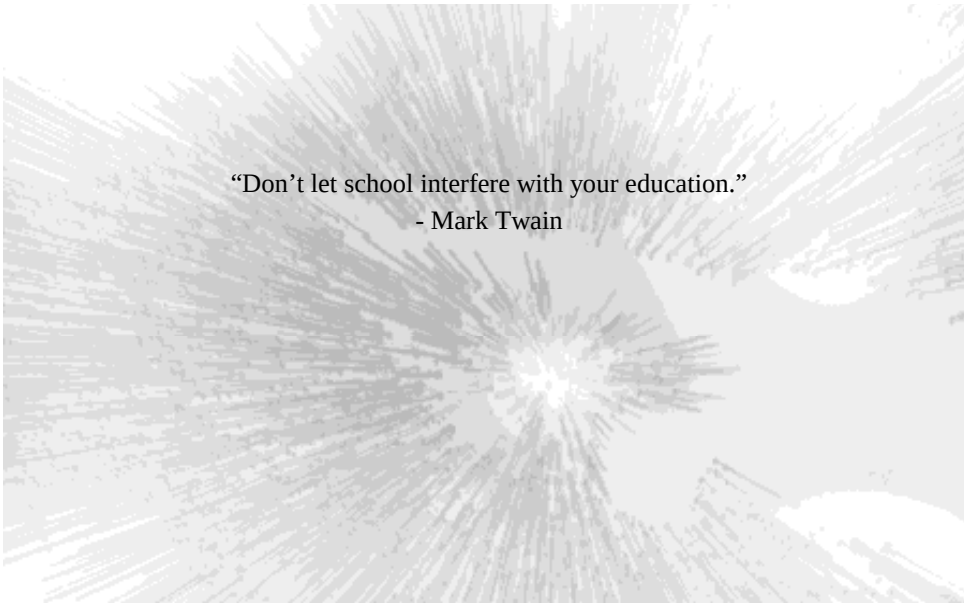
Throughout this piece we examine the convergence of the Internet and education, which we call e-learning. Following is a guide to the benefits of e-learning. We will cover each of these 15 benefits throughout the report.

BENEFITS

1. Available at anytime. "It's always there!"
2. Accessible from any location. "I can always get to it."
3. Multimedia content: use of audio, video, interactive chat, text, etc.
4. Accommodates individual's learning style: self-paced, asynchronous collaborative, synchronous collaborative.
5. Hyperlearning: as contrasted with static text, e-learning has the capacity to link with other resources (simulations, other content, study groups, etc.) that can enhance the learning experience and avoid the linear learning dictated by textbooks. The self-directed nature of e-learning allows hyperlearning.
6. Blindness of the learning engagement: Some learners who are inhibited in a classroom setting may increase engagement online.
7. Learner-centered learning: The learner is not a passive participant but a proactive searcher and finder of information.
8. Modularity of presentation: The content's architecture is modular, which facilitates different construction of learning events, both in design and length.
9. Manageable structure: The electronic infrastructure supports managed (and measurable) interaction between advisors and learners.
10. Ability to measure the effectiveness of program: E-learning software empowers administrators to track performance and measure ROI. In addition, monitoring usage by learners is simpler; i.e., the number of downloads per user can be measured. This helps training managers evaluate cost-effectiveness and provides assistance with license negotiations based on estimated usage.
11. Simpler data management. The rapid rate with which new learning products are introduced and older products become obsolete create a challenge for individuals charged with updating libraries. However, if a single version of each product is kept on a host, users get instantaneous access to updated components.
12. Cost savings: provides an efficient and cost-effective model for education.
13. Revenue enhancement: provides a way for campuses to expand classroom enrollments without using bricks and mortar.
14. Greater storage capacity: The Internet host has much greater capacity than most physical locations or a user's hard drive. This allows learners access to more products and lets the advisor mix and match courseware activities to fit specific needs. Learners can preview presentations of different courses prior to selecting one, or they can access a specific slide from thousands.
15. Individual education programs (IEPs) can be generated from a combination of the historical record of the students' prior learning (from monitored usage) and the vast database stored on the server. As students progress, information is delivered based on what they've learned and how they've performed. For example, a student would log onto the learning server and a customized course would be generated from the content database that knows which courses the learner took, how well she did, what her job description is, what problem is most pressing. This dimension serves to focus the curriculum only on skill gaps, saving organizations both time and money. A byproduct of IEPs, in our view, is increased motivation from the self-centered nature of the experience.

CHAPTER 2

SELF-PACED E-LEARNING



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E-Library

In the halcyon days of the 1940s before television and computers cluttered the home, families were entertained by the three R's: radio, reading and reflection. A popular community meeting place was the library. On any evening, mom and dad would load the kids in the station wagon (or the covered wagon) and head to the library. The library had something for everyone:

- Story telling for the little ones.
- Globes, maps and slide shows for the older kids.
- Book club meetings for Mom.
- Newspapers from around the world for Dad.

The e-library is no different. It is Internet-based, but it has something for everyone, too:

- Interactive games from the little ones.
- Help with homework for the older kids.
- A mini-course on fiction writing for Mom.
- Up-to-the-minute news from around the world for Dad.

E-Library Versus Library

The following story is a fictional account of library usage that highlights the differences between the e-library and the library:

Steven Stodge is about to go on a trip to Kenya so he would like to search for some information about traveling there. Meanwhile his girlfriend, Susie Cyberspace, would rather go to Zimbabwe; she is going to use the e-library to search for information, then the two will compare notes.

Steven Stodge and the Traditional Library

- Steven has to leave work early so that he can get to the library before it closes.
- At the library he has to do a search for information in an antiquated card catalog system.
- When he finds the book he wants, he has to go and search through the shelves to find it.

Susie Cyberspace and the E-Library

- Susie leaves work, runs some errands, has dinner and then decides to do some online research on Zimbabwe.

- Susie types "Zimbabwe" into the search engine and she is connected to hundreds of sites that

- Steven has to flip through each book on Kenya and figure out what information he wants.
- He can check out the books and carry them home or make copies of all the information.
- He asks the librarian about planning a trip to Kenya. She suggests that he should call the Kenyan Embassy or a travel agent.

are related to Zimbabwe.

- She can refine her search by limiting the information she wants by requesting, for example, "Animals and Zimbabwe."
- Susie finds pictures, videos and text about the country. She can even find chat rooms and get first-hand advice about traveling there.
- Susie can bookmark each web page she finds and organize all the information on her computer.
- Using the Internet, Susie can not only discover information about all aspects of Zimbabwe and traveling there, but also she can plan her trip. She is even able to find cheap airfare tickets and hotels.

A Trip to Zimbabwe It Is

Steven returns from the library with his arms filled with books. He still needs to search for more information, but, unfortunately, he is forced to leave because the library is closing. He greets Susie with all the books ready to plan the trip, but he is too exhausted from searching for information to do so. Well-rested, Susie greets Steven with four sheets of paper that have all the resources she found plus a possible itinerary and places of interest. It looks like the next vacation will be to Zimbabwe.

Pros and Cons of an E-Library

In summary, the e-library:

- **Saves time.** With an e-library there is no need to leave the home, office or classroom to find information. The information is aggregated in one area. All the information is on the World Wide Web and then is organized and grouped in smaller defined areas.
- **Access to more information.** A traditional library has limited resources because of the cost of acquiring books and other materials. On the Internet, the capacity to store information is much greater and there is access to a larger quantity of information.
- **Enhance the information.** The Internet has the ability to enhance the information the learner is looking for by adding graphics, video, audio or interaction to the traditional text.

EB Online (www.eb.com) is the Encyclopedia Britannica's web site. The site provides the entire Encyclopedia Britannica online, plus the complete Merriam-Webster's Collegiate Dictionary and links to thousands of preselected sites on the Web. The user can do a search within the encyclopedia or among the preselected sites for information. There is also an EB Shop where users can buy education resources, along with Britannica products. The service is available for home use through a subscription for $5 per month. In addition, educational institutions can purchase a site license.

The fundamental problem with the e-library is that there is too much information on the Internet. Users can drown in a sea of information while groping for the most secure raft of information. A search for "Zimbabwe" may result in thousands of web sites, and many of those will not have information that is worth using.

E-Library Companies

Some companies have evolved in response to the information-overload problem. E-library companies help learners find the right information efficiently.

For example, e-library companies can facilitate planning for Steven and Susie's trip to Zimbabwe. These companies build **virtual backpacks**—tools that help a learner to organize information. A virtual backpack helps the learner take information on the Web and repurpose it for another use.

[Please see the chapter entitled 0!K-12 for an in-depth look at Family Education Network—a company that is more than an e-library; it is a learning portal.]

WEBIVORE

Webivore (www.webivore.com)

Company description. Webivore provides access to content over the Web by assisting learners in finding and organizing Internet-based information. Webivore enables learners and educators to search educational web sites efficiently, collect relevant graphical or textual information and create Internet-enriched reports or presentations. Once the user has collected the information, Webivore will assist the learner in creating the final report or even a web site. There are different versions of Webivore available for different grade levels.

Revenue model: Webivore charges a subscription fee for individuals, schools or school districts.

ATTRIBUTES

	Webivore
Audio	Yes
Customized services	Yes
Develop and Own Content	No
E-commerce	No
Graphics	Yes
Interaction	No
Links to other content	Yes
Synchronous	No
User profiles	Yes
Video	Yes

A new company called **KeeBoo (www.keeboo.com)** is also trying to solve the information overload problem for e-library users. **KeeBoo** has developed Internet software that allows users to create web books that they can share with friends, family and co-workers. The books could be used to organize information for a school report or business presentation. Currently, the software is free to download.

Show Me the Money

Much of the information available on the Web is free; the challenge for e-library companies is to find a business model that will be profitable. Many of the e-library companies are choosing to use the advertising and sponsorship model as a way to produce revenue.

Because the Internet is still uncharted territory for advertisers, pricing models are continually changing. According to the Internet Advertising Bureau, revenue from web advertising had a nine-month total for 1998 of more than $1.3 billion—a dramatic jump from 1996 total revenue of $267 million. There are various ways that companies can charge for advertising on their site:

- Banner ads. The advertiser pays to have a banner advertising their company based on a **Cost Per Thousands of Users** (CPM) rate which is based on the number of people who visit the site.
- Click Through. The advertiser pays based on the number of people that will click on the banner and go to the advertiser's web site.
- Sponsorship. A guarantee of the minimum number of impressions. Positions the advertiser as a more visible advertiser on the site than just a banner advertiser.
- E-commerce. The company will sell products on its site using a revenue-sharing model.

AT&T and the Learning Network

AT&T (T)

Market Cap.	Stock Price (52-Week High, Low)
$146.4 billion	$46 ($64-5/64, $32-1/4)

The AT&T Learning Network (ALN) provides resources for teachers, parents and schools at www.att.com/learningnetwork. The ALN acts as an aggregator of content and links focused on providing educators and parents with resources covering educating, parenting, child safety, technology, financial aid for education and the Internet.

- The **Virtual Academy** is an online resource for educators. It includes free courses to improve skills and also fee-based courses that provide college credit or degrees.
- **Resources for Educators** include ALN content and links to educational resources that focus on helping educators plan for and use technology. It includes an online mentoring service called AskLN that provides advice to teachers interested in how to use technology in the classroom.
- The **Resources for Family** section has links to family-related content.
- The **Community Guide to the Information Super Highway** helps schools and communities understand and plan for using the Internet in their classrooms, libraries and communities.
- We view the ALN as a derivative of an e-library, as AT&T provides the service virtually free to consumers, much as a traditional library lets library card holders borrow books.

The library remains one of our community's greatest assets. As illustrated earlier, it is a source of entertainment and information for people of all ages. Nonetheless, as has become customary in this technology-based cocoon in which we live, convenience is everything. Therefore, a number of companies have emerged to embrace the intrinsic value of the library while appealing to our passion for convenience.

The following is a list of features provided in the more robust e-libraries:

- Content delivered with audio files and other media.
- Sites with areas for interaction among learners and learning advisors.
- Hyper-links to other content.
- Monitored content to ensure that inappropriate content is not transmitted on the site. This is a standard feature on children's web sites.
- Individualized services to improve the search, including the maintenance of a user profile to expedite future searches.
- E-commerce section that allows the learner to purchase products related to the content.

Headbone Interactive (www.headbone.com)

Company description. Headbone Interactive provides an interactive web site for children ages 8-14. The site is rich with content, much of which was built by Headbone. The site:

- Promotes interaction between children in games, chat rooms and message boards.

- Empowers parents to filter the information and content that their children see.
- Monitors chat room discussions for any improprieties.
- Provides resources to teachers to integrate Headbone in the classroom.
- Offers e-commerce in the "Mega Mall."

Revenue model: Headbone is free to parents, learning advisors and children. The company has an advertising and sponsorship model for revenue. One example of a sponsor is Fleet Bank. Fleet Bank wanted to find a way to attract a younger customer base through branding. Headbone created a series of games to teach financial principles called FleetKids.

MaMaMedia (www.mamamedia.com)

Company description. MaMaMedia provides an education site for children ages 5-12 and their families. The company's mission is to promote playful learning and technological fluency. MaMaMedia's philosophy is based on research about learning and technology conducted at MIT's Media Lab. MaMaMedia accomplishes its mission through various parts of its web site:

- **Surprise!** provides activities that develop imagination, creative thinking, logic, writing and scenario-building skills.
- **Romp!** provides access to content on other web sites that are approved by educators.
- **Buzz!** creates interaction by allowing kids to share the creations they make as well as exchange ideas with other kids.
- **Zap!** allows kids to design their own signature and MaMaMedia screen.
- MaMaMedia Magazine augments the content that is available on the web site.

Revenue model: The service is free to children and parents. MaMaMedia uses an advertising and sponsorship model. Some of their sponsors include Women.com, SmarterKids.com and Surf Monkey.

The benefits of technology. MaMaMedia's content is based on research that technology can help learners learn. Its philosophy is based on the constructivist theory that children can attain greater insight when they design and develop (construct) projects. Technology helps this type of learning to occur.

***e*-benefit: Learner-centered learning: the learner is not a passive participant but a proactive searcher and finder of information.**

Junior Net (www.juniornet.com)

Company description. JuniorNet is a monthly subscription online service for kids aged 3-12 that provides access to content and interaction on the Web. JuniorNet has special technology to allow content to be delivered with the same quality and speed regardless of the connection speed. JuniorNet provides children with an ever-changing virtual world. The features and services on the site include:

- **Content** from leading publishers such as *Highlights, Ranger Rick, Sports Illustrated for Kids, Weekly Reader and Zillions.*
- **Interaction** with games, chat rooms and message boards.
- The Knowledge Center is a **resource center**, which includes an online multimedia research center for children, featuring the children's interactive reference encyclopedias, powerful search tools, a kid-friendly word processor and an atlas specially designed for kids.

Revenue model: $9.95 per month for a subscription. **Making the subscription model work:** JuniorNet is the one of the few portals that uses a subscription model instead of free access supported by advertising.

SERVICES AND FEATURES OF E-LIBRARY COMPANIES

	MaMaMedia	Headbone Interactive	JuniorNet
Audio	Yes	Yes	Yes
Customized services	Yes	No	Yes
Develop and Own Content	Yes	Yes	Yes
E-commerce	Yes	Yes	Yes
Graphics	Yes	Yes	Yes
Interaction	Yes	Yes	Yes
Links to other content	Yes	Yes	**No**
Synchronous	Yes	Yes	Yes
User profiles	Yes	Yes	Yes
Video	**Yes**	No	**Yes**

Self-Paced E-Learning (SPEL): Pronounced "Spell"

The e-library is transforming the way people learn because it makes all types of learning available at all times. It creates an environment where people can learn about whatever they want whenever they want. It promotes learning for the sake of learning.

One of the most common learning engagements is **self-paced e-learning** (SPEL). The World Wide Web's hypertext environment has simplified SPEL experiences. The Web is teeming with sites offering a multitude of content with learning objectives:

- Self-help pages and guides.

- Courses—free and pay-per use.
- Resources—free and for sale.
- Reference material, such as dictionaries and maps.

A common use of SPEL is to look for a static document. The most common user of SPEL is SAL—the Search and Learn guy who lives next door or perhaps sits in the neighboring cubicle at your office.

SAL is a doer. He is likely mired in the muck of his own mundane metier. SAL is unable to proceed because he is stumped. SAL wants to know something; therefore, SAL searches for the answer. The Internet or the corporate intranet likely has SAL's answer. The search often retrieves a posted document or a hyperlink with perhaps the exact answer or a relevant answer.

Continuing Education and SPEL

If SAL has more serious ambitions, however, there are web sites that will offer him formal courses to enhance his intellectual capital.

Hungry Minds (**www.hungryminds.com)** is a leading gateway to online education for adults. It helps learners by aggregating customized content. Hungry Minds reformats, aggregates and licenses content for its courses. The courses are customized for learners based on subject difficulty level, available technology and time available to work on the course.

Hungry Minds plans to use big-name learning advisors to attract learners. There will be interaction among learners and learning advisors via chat rooms and e-mail.

Revenue model: Pay per class as well as advertising and sponsorship. Some classes are free while others will have a pay-per-class price structure.

Continuing education in the e-learning classroom enables professionals to keep up with their professional/mandated requirements without taking valuable time away from the office. Lawyers, accountants, nurses, and other professionals all need to take continuing education courses to keep their license or certification.

The Internet empowers professionals to train without suffering the substantial resource outlay to attend a seminar or a conference.

Yipinet (**www.yipinet.com)**, an acronym for "Your Interactive Personal Instructor on the Net," provides Internet-based continuing education for professionals in regulated industries. Yipinet develops content from leading professionals in the industry. The content includes news, resources and business information for the particular industry.

Yipinet sells courses to individuals via its web site. The company also sells corporations a library of courses through YipinetCampus—more of an enterprise solution. Currently, Yipinet offers courses and resources for accountants, but it plans to expand into financial services, law and medicine. The focused nature of its content makes it easier to market and form alliances with vertical markets such as financial services.

Yipinet's First Foray

Yipinet's niche will be with professions that have mandatory, annual training. These would include accounting, securities, legal, doctors, nurses and architects. The recurring nature of the revenue is appealing and is arguably more satisfying from an investor's perspective than learning that is more discretionary or optional.

Yipinet's first successful foray was the accounting market. Yipinet is the exclusive provider of online continuing education to the 40,000 members of the California CPA Education Foundation. The striking statistics for the accounting profession are:

- 1.5 million accountants.
- 500,000 CPAs.
- CPAs are required to complete 40 hours per year of CE.
- CPA continuing education (CE) is an estimated $400 million market.

Yipinet builds "Knowledge Hubs" that, in great part, are composed of Internet-based learning communities:

- Access to experts.
- Discussion forums.
- Chat with peers.
- Knowledge counselors.

Revenue model: There is a per-course fee of $40-120 depending on the number of credits given. Yipinet currently offers substantial breadth and depth of content for specific customer bases.

SPEL and the Importance of Brand

Some universities are trying to leverage their intellectual property by targeting the continuing education market and creating e-learning portals for continuing education. One of the more prominent continuing education portals is the one that resells UCLA courses. The courses are actually from UCLA Extension—a bricks-and-mortar program that enrolls more than 100,000 students per year in the Los Angeles area and is the largest in the country.

OnlineLearning.net™

OnlineLearning.net has the exclusive rights to distribute UCLA courses online. Currently, OnlineLearning.net delivers more than 4,600 of UCLA Extension's courses. Learners use FirstClass

client software as the primary exchange information with the learning advisor. The software creates a learning environment that facilitates interaction among learners with e-mail, workgroups and online chats. The courses are offered asynchronously. FirstClass allows all of the communication and course work to be completed with any standard web browser.

Although learners can transfer the credits earned with OnlineLearning.net, learners cannot receive a degree from OnlineLearning.net nor UCLA.

We believe brand will emerge as a key variable in determining the viability of e-learning businesses in continuing education. **OnlineLearning.net obviously has a great brand with UCLA, which is one of the most recognized higher-education names in the world.**

Brand is critical in e-learning because it may be one of the few ways for consumers to differentiate e-learning products when they are choosing from a lengthy list. In IT (information technology) training, the brand is acquired from the software and hardware vendors on which most learners are studying (Microsoft, Oracle, Cisco, SAP). In business skills, the source for brand is less obvious. Who would you go to for finance? Or health care? Is it Arthur Andersen for accounting?

We believe e-learning companies will build brand through alliances. For example, CBT Group sells a management education product line through the acquisition of Knowledge Well. Knowledge Well offers college-level business courses for university credit through **CBT Group's partnership with Kansas State University.** The courses will lead to a Kansas State business degree. The courses address the growing demand for **professional and business management education**. Knowledge Well's products cover all management competencies, from sales to finance. Knowledge Well also offers a complete Business and Management program available on a non-credit basis.

Unext.com (www.unext.com) provides online business education through an online business community called Cardean. Its goal is to provide content from leading business schools directly to individuals in corporations. Currently, **the partners in Cardean include Columbia University, University of Chicago, Stanford University, the London School of Economics and Political Science and Carnegie Mellon University.**

Pensare reformats and aggregates content for online courses for businesses to teach employees skills such as customer relations and management. The courses include interaction in the form of chats, forums, role-plays and simulations.

The company aggregates content from leading business schools such as Wharton and Harvard. The courses include:

- Instruction in the form of live lectures and case studies.
- Performance tools that assist in the specific area, such as a negotiation planning tool.

The courses are asynchronous, with learners participating when they choose. Each learner's results are archived in the Knowledge Community, and other learners can access them when they are engaged in the learning event.

Revenue model: Pensare licenses its products directly to customers. The cost depends on the number of people and the amount of time. The cost is approximately $250,000 for a company, or $200-500 per person based on the number of courses the client purchases and the number of people taking the courses. Pensare will also license courses for a set amount of time or for unlimited access. Pensare will either sell individual courses covering specific topics or will assist a business in designing its own knowledge community.

What We Need Is an E-Dewey Decimal System

Many industry pundits have argued that one of the impediments to finding helpful content is the architecture of the e-content databases. Some argue that it is tantamount to wandering through a library where the books have no titles. The problem supposedly revolves around the way in which content on the Web is currently written. Web information is generally written in HTML, a simple authoring language. Pundits argue that the problems with HTML are as follows:

- HTML does not empower content authors to "tag" their content with information that may be helpful to a learner in search of relevant content.
- HTML does not support the specification of deep structures needed to represent database schemas or object-oriented hierarchies—in short, HTML does not make data usable for complex databases and their search functions.

We do not necessarily accept that there is an "HTML problem." We believe the Web has a huge indexing problem—thus the heading of this section—and that the problem is exacerbated in the learning domain. However, HTML has had means (Meta tags) from the beginning that allow at least simple indexing. Unfortunately, these tags have been barely utilized.

Therefore, while the fault may lay partly with the technology, we believe it lays mostly in the understanding and mindset of those creating the content. On an individual level, most people creating learning content are used to controlled distribution of physical media where the issues of how to find something are quite different.

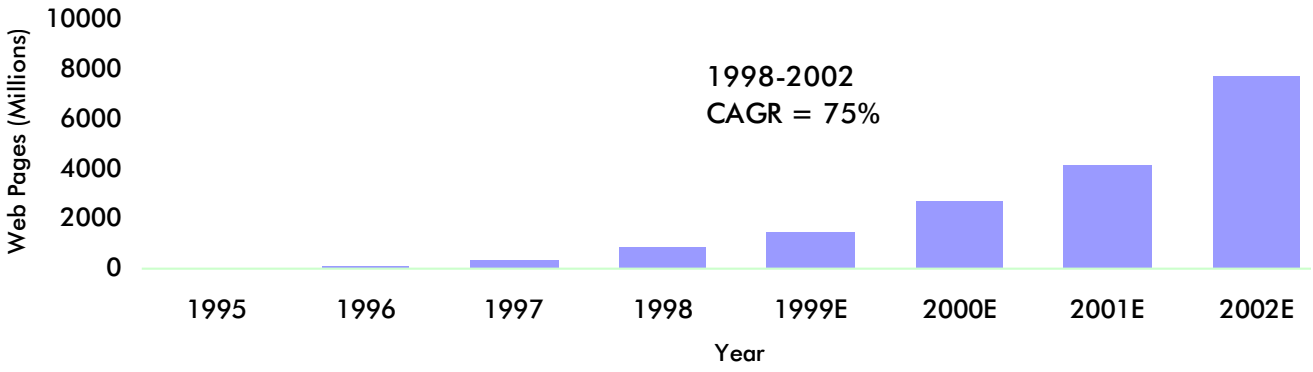
One could argue that most big training publishers (e.g., NETg, Skillsoft, CBT Group) have gone out of their way to perpetuate that model and intentionally make their content as opaque as possible. Most content producers have not even thought that they should include indexing information, let alone thought about how to use the technology to do so.

Technologies like XML solve indexing problems, but the key, in our view, is that the learning industry makes proper use of XML. Perhaps looking to technology as a panacea is futile when the problem is not sophistication of technology, but conformity in the practices of the industry.

The Drive Toward Content Standards

The **Instructional Management System** (IMS) is working to build standards to help content developers make e-learning easier by establishing a set of "rules" to use when developing content. These rules make it easier for web search engines to find what learners are looking for.

PROJECTED WWW CONTENT GROWTH



Source: IDC.

According to IDC, by 2002 there will be almost 8 billion web pages on the World Wide Web.

The IMS standard is based on the use of "metadata." Metadata is a way to describe information that enables searchers to identify features shared by different documents by "tagging" data. Metadata supports the portability and reuse of electronic learning objects and sets the structure of descriptive information about a learning object, such as the subject matter, the owner and any other details (searchable indices).

For example, the IMS system would allow a teacher in Alaska who designed a web-based unit on building an igloo to place the information on the Internet in a way that would be accessible for anyone else on the Web. By using the IMS standard, another teacher in Florida could access the information and find out how much it cost and what information is available. If the teacher in Florida decides to use the information, the original creator in Alaska can find out how it is being used.

The IMS project was started in 1994 by EDUCAUSE under an initiative called the National Learning Infrastructure Initiative. IMS recognized the need among education institutions for nonproprietary, Internet-based strategies for customizing and managing the instructional process and for integrating content from multiple publishers in distributed learning environments.

The IMS project describes the system as "an online infrastructure for managing access to learning materials and environments, the facilitation of collaborative and authentic learning activities, and the certification of acquired skills and knowledge."

Currently, many e-learning companies are part of the IMS Developers Network, which consists of technical representatives from organizations that are committed to creating and using IMS-compliant materials and environments.

The following is a partial list of the companies in the network:

- Apple Computer Inc., Asymetrix, AT&T Learning Network, Blackboard, Inc., CBT Systems, Centra Software, NetSchools Corporation, Oracle, PBS Adults Learning Services, Pensare Inc., Electric SchoolHouse, eCollege.com, Saba Software, Universal Learning Technology, Logal Software, Lotus Learning Space.

The IMS standard hopes to address three obstacles for providing online materials and learning environments:

- Lack of standards for locating and operating independent materials.
- Lack of support for the collaborative and dynamic nature of learning.
- Lack of incentive and structure for developing and sharing content.

www.headlight.com

Headlight.com (formerly Visiq Online Learning) is a pioneer, in our view, in the land of metadata. It offers online courses in information technology and business skills.

Headlight.com acts as more than just an aggregator of content. Headlight repurposes web-native content, infusing courses with metadata tags that enable customized learning. Headlight.com was one of the early proponents of using metadata for identifying learning objects.

Tagging data allows content developers to specify a wide variety of descriptive features that search engines and databases can then access to promote a quicker and more accurate search. The types of data or features that can be "tagged" in the documents include:

- Date the document was created.
- Author.
- Key topics.
- Type of document: text, video, audio, etc.
- Pretty much anything that one can imagine.

The learning object ("info nugget") approach allows Headlight.com to tailor courses to individual learners' abilities by matching the learner's assessment profile (based on a learner assessment process, Headlight.com will generate a list of recommended courses) with class content learning objects—an application the company has termed a "custom learning path." Thus, learners are able to concentrate only on areas where they need extra practice, and learners do not have to spend extra time reviewing concepts they already understand.

Learners set up a "My Headlight" application on the Headlight.com site that manages the learner's academic progress. The My Headlight function allows learners to first assess their skills, then buy, start, stop and resume courses and keep track of their progress.

The web site serves as a one-stop shop for individual e-learning, combining content, distribution (via the web browser) and ecommerce. Virtually all of the courses are delivered through a standard web browser, minimizing the firewall security concerns that come with media players and downloadable content files.

The company also expects a full rollout of the Headlight.com site in the fall of 1999. At that time, the company also expects to have relationships with some of the major search engine companies (to act as their "learning gateway"), with a large number of web-based training content providers (more than 500 courses). Headlight.com would then be able to offer co-branded learning sites that will appear transparent to the corporate user.

Revenue model: Learners pay a per-course fee that provides them with: (1) access to Headlight.com's free assessment tools; and (2) access to the purchased course for one year. Individual courses range in price from free up to roughly $200.

Headlight.com hopes to offer a learning experience that will lead to extensive recurring revenues and a loyal user base.

For e-learning to emerge as a thriving market for educational goods, it must be an open market—one that requires a standards-based platform on which to deliver educational materials. **We think a market of multimedia objects built on IMS standards will soon emerge and that transactions will occur via web browsers.** The goal obviously is to allow a searcher to select data, information or learning objects that most exactly satisfy his or her search objectives.

The IMS standard has the potential to radically change the economic model in education. With IMS, the available content and information on the Web will increase and there will be much more information available on the Web. It will likely transform the way that content is licensed and authored by opening up the market to a wider audience of authors as well as learners who are willing to pay for the information.

We believe IMS metadata standards will facilitate that thriving market.

Course Design: Migrating From Static to Dynamic Content

We prefer to sidestep the argument regarding the best architecture for content. The software experts can fight that battle more adeptly. Irrespective of proper architecture, we believe the nature of content will change.

Most of today's e-content is not tailored for the use of a specific learner with very specific needs. **Static courseware**, which still dominates the e-learning space, reflects a time when technology did not permit "mass customization," on-the-fly updates and revisions, differentiated learning skills and a focus on providing incremental knowledge to those that required it.

We believe the learning object/info nugget concept will evolve to dominate content driven by two unrelated forces:

- Consumer demands for briefer and more relevant e-courseware: Attention spans do not tolerate an hour-long computer course, particularly when most people need to know a specific point about a specific topic and not the entire topic.
- Software technologies that enable courseware developers to build info-nuggets.

Click2Learn.com

www.click2learn.com

Click2learn is an education and training portal by Asymetrix. The site provides links to all types of online courses with business and technical content. Asymetrix has a partnership with Go2Net (a network of branded, technology- and community-driven web sites) that provides access to a network of small businesses. Go2Net will offer Asymetrix Learning Systems' click2learn.com to its user base in the form of co-branded training offerings throughout the Go2Net Network.

Organizations can link directly to Click2learn and customize their course catalog to their needs. Individual users can go directly to the site and sign up for courses. Asymetrix is not designing the content except for a catalog of just-in-time two-minute courses that are related to technical topics. Asymetrix also has a web-based publishing tool that allows anyone to post courses on the site. Asymetrix gets a share of the profits from people who take the courses.

Current content categories include end-user and professional computer training, business skills, OSHA required training, personal skill development and continuing education.

We expect courseware to be developed in small chunks (learning objects, info nuggets, etc.) that incorporate:

- A learning objective (so the learner knows what the content is supposed to teach).
- Tags that identify key concepts.
- An assessment module that allows the learner to validate mastery.
- An e-commerce "trigger" that allows the content owner/author to receive compensation from the learner for using the content.

Whether existing content (such as a textbook) is being adapted for intelligent search agents or web-native courseware is being constructed from scratch, the keys to successful content will be: Can we find it, and is it helpful?

Active Server Technology Should Bring Personalization to E-Learning

Active Server Technology is another powerful technology that may soon be a dominant force in the expanding world of info-nuggets.

Active Server Technology (AST) creates dynamic web pages on the fly whenever someone needs to access information stored on a database. The technology generates a unique web page for each visitor, determined by matching that learner's profile with data stored on any number of databases. AST creates a web page based on the learner profile, accessing a database of "learning objects" that the learner will need to see.

For example, say a Boeing engineer needs to find instructions on how to fix an aircraft engine recently upgraded by the manufacturer. The engineer logs on to Boeing's intranet and goes to his "home page." His home page would be automatically built by the Active Server. In other words, because the engineer had specified this type of engine as one of his primary responsibilities, the server would upload new content about the engine to the engineer's home page, thereby ensuring that the engineer received the latest information from the manufacturer.

Software advances also could help AST become "intelligent" depending on what the user does. The search engine could watch what learners open and how long they spend looking at the idea, and then the smart server revises and refines subsequent searches to more closely align the results with learners' interests.

Ventix Systems (www.ventix.com), based in Austin, Texas, has developed a software solution that focuses on improving employee productivity, increasing leverage from fixed IT investments and reducing reliance on help desks. Ventix provides a Knowledge Support solution that enables users to get the answers they need to any type of question–technical, business-rule related or even customer-service oriented.

The solution is targeted primarily at the $10-billion ERP-user market, although we believe the application will provide value in many other markets as well. For example, Ventix's software allows users to hit a Ventix "hot button" while they are using any ERP application. The Ventix software then searches the relevant "buckets" of content (program manuals, CD-ROMS, company business guidelines, etc.) and returns one or some combination of:

- The exact answer.
- More information that should allow the user to derive the answer.
- Perhaps a referral to a "super" user.

The user receives the information quickly and in a format that makes sense. Importantly, the "answer" that the software returns becomes part of the content database, thereby improving the answers provided to the "next," similarly stuck Ventix user.

Ventix is publisher-agnostic. It can manage the mother lode of supporting information that can burden most IT support organizations. We believe it would not be wrong to characterize Ventix as a combination of AST (discussed on page 25) and an intelligent search agent that utilizes metadata or other standards to generate user-specific, on-the-fly content based on the user's query.

The primary drivers for adopting Ventix's Knowledge Support solutions are twofold.

- First, the ability of users to quickly retrieve the information they need to perform a task makes them more productive. The employee does not waste time searching for the answer, calling the help desk, asking other colleagues or going to a training session—they ask, receive and use the "info nugget" and then move on.
- Second, a successful implementation of Ventix would drastically reduce the need for a manned help desk. The majority of questions, in our view, that professionals have with software applications or business processes are ones that should not be routed through the help desk as they are repetitive, concise and generally related to a frequently used application or business process. Ventix empowers businesses to reduce help desk expenses and still provides 24/7 assistance to their global workforce.
- Ventix has been funded by, among others, BT AlexBrown, Intel, Austin Ventures and Piper Jaffray. The company currently has strategic relationships with PriceWaterhouseCoopers, RWD Technologies and Perficient and is involved in partnership programs with Dell, Microsoft and Oracle.

CHAPTER 3

ASYNCHRONOUS, COLLABORATIVE E-LEARNING (ACEL)

"The industrial approach to education ... [made] teachers the actors and students the passive recipients. In contrast, the emerging new model [of business-led education] takes the market perspective by making students the active players. The active focus will shift from the provider to the user, from educat-ors (teachers) to learn-ors (students), and the education act will reside increasingly in the active learner, rather than the teacher-manager."
—Stan Davis and Jim Botkin, The Monster Under the Bed: How Business Is Mastering the Opportunity of Knowledge for Profit

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Asynchronous, Collaborative E-Learning (ACEL): Pronounced "Excel"

For many working adults to advance professionally, they need to enhance their own intellectual capital. Nonetheless, because of the pressures of home and work, many adults have neglected their own academic aspirations for years.

The primary issue is that older students are not able to accept the traditional offerings of colleges and universities:

- Daytime classes.
- Multiple credits.
- Theory-based content.
- Academically oriented faculty.
- Lecture-based format.
- Fellow students aged 18-22 years old.

We believe Apollo Group (University of Phoenix, UOP) has built a program to suit the needs of working adults.

- **Convenient access of UOP learning sites.** Campuses and learning centers offer easy access to the freeway, sit in business corridors and facilitate easy job-to-school transition. Alternative delivery is offered in many employer-provided facilities or by electronic media (online, fax, voice, video).
- **Manageable workload of UOP programs.** Students take one class at a time for six consecutive weeks. Traditional institutions require concurrent enrollment in three to four classes. Apollo's sequential enrollment enables students to co-manage the demands of home, work and study.
- **Convenient time of UOP classes.** Classes are in the evening, except for some weekend offerings, and begin at 6:00 p.m. and run until 10:00 p.m.
- **Relevance of the UOP assignments.** The curricula are delivered by professionals who can draw from their own workplace experiences, offering exceptionally valuable points of reference to working adult learners who want to know how to apply their lessons now.

UOP is a unique education model. It masterfully blends the credibility of the academic world with the cost-effectiveness of the business world. As a consequence of this novel approach, the composite picture of a UOP student is a working adult in his or her mid-30s who has been employed for more than nine years, earns more than $50,000 and receives a partial tuition reimbursement from his or her employer. (For more on Apollo Group, please see pages 165-179.)

In retrospect, it is not a surprise to know that UOP opened one of the nation's first e-learning campuses.

UNIVERSITY OF PHOENIX ENROLLMENTS

Fiscal Year	Quarter	Online Campus
1992	1st	422
	2nd	433
	3rd	476
	4th	494
1993	1st	593
	2nd	673
	3rd	679
	4th	753
1994	1st	783
	2nd	937
	3rd	808
	4th	790
1995	1st	862
	2nd	989
	3rd	1,068
	4th	1,346
1996	1st	1,360
	2nd	1,569
	3rd	1,693
	4th	2,179
1997	1st	2,137
	2nd	2,444
	3rd	2,725
	4th	3,296
1998	1st	3,195
	2nd	3,750
	3rd	4,360
	4th	4,456
1999	1st	4,774
	2nd	5,321
	3rd	5,870

Source: Company documents.

The vendor behind UOP's e-campus was Convene. Convene was one of the first vendors of ACEL platforms. Convene.com is one of the largest independent online learning systems providers in the United States. Convene (www.convene.com) began life as a way for seminaries to train students back in the 1980s, but now more than 50,000 students have taken more than 250,000 courses using convene.com's turnkey solution.

Convene.com offers customers a full turnkey solution and can get an online program set up in roughly six weeks.

The E-Setting

Asynchronous, collaborative e-learning (ACEL) is for those who need the flexibility to learn anytime and anywhere but still want access to instructors, colleagues and other live, learning resources that are

critical to their own learning process. ACEL facilitates collaboration among learners at all times via online discussions, assignments and interaction with the instructor.

Below are the basic components of a typical ACEL offering by a Convene client:

- **Train the client's faculty** on how to repurpose and develop e-learning content.
- **Provide marketing services** to help the school or business get students enrolled.
- **Fully host the e-learning site** on a server run by Convene.
- **Provide technical support** for both learners and learning advisors to minimize the disruptions to the learning process in an online environment.

"This Is Not Your Father's Teacher."

Universities must offer training for teachers to become online learning advisors. The job description of a stand-up instructor is quite distinct from a log-on instructor. For example, the interaction with students is extremely different when tied to the virtual world of e-learning. The replacement of the physicality of c-learning with the virtuality of e-learning can rob many professors of their greatest asset: their presence.

Convene.com charges institutions by the student as well as for ancillary services such as hosting, marketing support and training. This allows institutions to pick and choose what type of solution they want to implement and gives Convene.com the flexibility to meet what are often a client's budgetary constraints.

Most e-learning vendors' products and service offer the basic functions that mirror a c-learning experience:

The Internet allows content whether canned or interactive to be standardized and distributed anywhere at anytime. Standardized e-learning content will generate revenue for universities and learning advisors, particularly with the advent of IMS Standards. Ownership rights must be clearly stated. The increasingly loud discussion about intellectual property and e-learning is highlighting the growing separation of course development from teaching.

- Is it published material like a research paper, which is historically owned by the professor? Or is it like a technical discovery (since it involved development tools), which is historically owned by the university?
- We believe many universities will build e-learning development teams to handle all of the university's conversion work. The development teams will include SMEs (subject matter experts), interactive learning specialists, an editor and eb specialists. Someday, however, software tools will be standardized enough to empower most learning advisers to build their own courses with a web browser and a few course-design templates located on the University intranet (see discussion of WebCT below).

- **Class registration**.
- **Collaboration and interaction technologies** allow learner and learning advisors to communicate among each other. Technologies include e-mail, chat rooms and message boards.

- **Tracking mechanisms** so learning advisors can monitor learner's progress throughout the course.
- **Assessment vehicles.**

Another enterprise solution provider is Eduprise (www.Eduprise.com). It provides a complete online solution. Eduprise offers a full array of services, including: (1) hosting services designed to improve speed and reliability and technical help desk support 24x7; (2) course development tools and services designed to assist a company in meeting its unique educational goals on the Internet; (3) content services for repurposing and importing content for e-learning; and (4) professional services such as marketing, planning, training and professional development, instructional design, project management and online instructional resource services to assist a company in maximizing its web presence and capability.

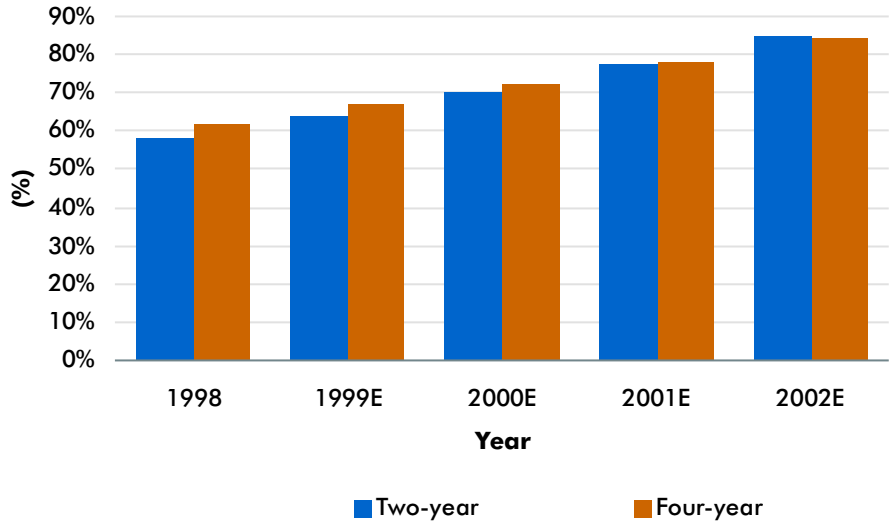
An Exciting Future

According to an U.S. Department of Education study, almost half of the nearly 3,800 American institutions of higher education are providing some variety of distance education. The ACEL offerings come in many shapes and forms:

- E-classes to supplement traditional class time.
- E-classes as the exclusive connection with the campus.
- Providers that are solely e-learning campuses (Jones University).

Jones International University (**www.jonesinternational.edu**) is a fully accredited, completely online campus. Jones offers bachelors and masters degree programs in business communications as well as 18 certificate programs in business related areas. The North Central Association of Colleges and Schools (NCA) granted Jones accreditation as a university in March 1999, making Jones International University the first online university to receive regional accreditation.

PUBLIC AND PRIVATE HIGHER EDUCATION INSTITUTIONS OFFERING DISTANCE-LEARNING COURSES



Source: International Data Corporation, Online Distance Learning in Higher Education, 1998-2000.

E-learning is a gift to universities. Pressured by space and budgetary constraints, higher education institutions can turn to e-learning as a way to increase enrollments as well as serve existing students more effectively.

***e*-benefit: Revenue enhancement for bricks-and-mortar classroom: provides a way for campuses to expand classroom enrollments without using bricks and mortar.**

Most importantly, in our view, e-learning will empower traditional universities to build educational offerings that appeal to working adults. International Data Corporation estimated that in 1996, adults over 24 years of age composed approximately 6.2 million, or 43.5%, of the students enrolled in higher education programs, up from 28% in 1970.

Myriad Choices

Higher education as a whole is in the midst of evaluating myriad e-learning choices. The only conclusion is that choices are being made.

Institutions are electing to:

- Build their own online product using either proprietary software or offerings from leading vendors, such as Blackboard or Universal Learning Technology.
- Outsource the online campus to service providers such as eCollege.com or Convene.com.
- Merge with other institutions in a cooperative model, such as Western Governors University, and let the co-op worry about building the e-campus.

Option 1: Build Their Own

Blackboard.com

Blackboard.com: Simon Cyberspace is an English professor at traditional **c-learning University**. Simon has decided that although his university has not fully embraced the e-learning trend, he wants to place his class online for both learners at c-learning University as well as learners at other universities.

Simon visits www.blackboard.com where he enters the title for his class "Introduction to British Literature." Blackboard.com then leads Simon through a step-by-step process of putting the course online —everything from the syllabus to the grades, none of which requires Simon to possess any programming skills.

Blackboard.com allows synchronous communication with whiteboarding and real-time chat and asynchronous communication with threaded discussion, file exchange, work groups and user tracking. Simon can employ different functions including extra credit, assignments, external links, communication and learner tools.

Simon pays nothing to create the course, and Blackboard.com provides 5 MB of storage space. For $100, the course can be registered, which includes technical support, the ability to charge learner-enrollment fees and 10 MB of storage space.

(If Simon decides he would rather be an e-learner than an e-learning advisor, he can search the library of online courses at Blackboard.com and take as many courses as he chooses. He can also participate in Learning Communities which are areas for communication and resources related to

different themes such as Distance Learning or Teaching Online. Blackboard.com will keep track of all the courses he is enrolled in and the learning communities he is a part of in the "My Blackboard" section.)

Blackboard CourseInfo: Simon's boss (Paul Provost) marveled at the financial success of Simon Cyberspace's one online course. Paul decides to bring other courses into the world of e-learning. Paul purchases Blackboard CourseInfo, a scalable solution, which allows learning advisors to place their course online as they become more comfortable with e-learning.

CourseInfo provides a common platform for hosting multiple courses that can be accessed from any web browser, so as more learning advisors want their courses online they can add them without any meaningful computer, i.e., programming, skills.

The latest version of CourseInfo 3.0 provides the school and individual learning advisors complete control over their course content and provides assessment tools, tracking, study groups, file exchange, synchronous and asynchronous communication, course calendar, messaging system and online tutorial. It can be hosted on the school server or by Blackboard.

Blackboard CampusInfo: The President of **c-learning University** realizes that it is now time to get the entire campus online. She wants an Internet solution that will allow learners and learning advisors to get what they need online, from campus services to online resources.

Blackboard Campus will create a front-office platform that provides access to all the services from campus events to learner assessment. It includes all of the course functions of CampusInfo, as well as providing features for the individual learner and administrative functions for the entire university population. It can be customized to meet the needs of c-learning University.

Revenue model: Blackboard CourseInfo is $5,000 per server, per year, for unlimited courses and users. The cost includes installation, unlimited support from a system administrator, web-based support suite and online manual for the faculty. Hosting, premium support and training services are not included. The CampusInfo product is still in beta version, but pricing will likely be based on the number of users and courses that are available.

With a complete scalable solution, Blackboard is positioned to be the standard platform in higher education e-learning. It provides a complete solution for colleges and universities that encompasses the entire e-learning experience, from free hosting of online courses to an entire online university. Blackboard provides technical and content support, which is necessary to make the online campus an effective learning environment.

International Data Corporation estimates that approximately 85% of higher education institutions will offer distance learning courses by 2002 and that the number of students taking such courses will increase by more than 30% per year through 2002.

Option 2: Outsource It

Many colleges and universities have found internally developed solutions to be time-consuming, expensive and difficult to implement. As a result, a growing number of colleges and universities are outsourcing the development and maintenance of their online campus and courses.

WebCT, acquired by ULT in May 1999, provides a platform for converting courses to the Web and provides additional tools such as e-mail, assessment and collaboration to enhance the learning experience. WebCT provides synchronous and asynchronous communication, and tools that provide the ability for learning advisors to administer assessment. We believe from its acquisition of WebCT, ULT has an installed base of more than 2 million seats at roughly 800 colleges in roughly 40 countries.

WebCT adapts **content** to create a learning experience with **audio, video and simulations.** The software enables the advisors to add information, track student progress, administer courses and post assignments at their choosing. There is a step-by-step process for creating a course that requires no knowledge of HTML and allows the creator to link to other websites, add customized content and use content from certain publishers. ULT has formed numerous partnerships with publishers including Pearson, Thomson Learning, Archipelago; Bedford, Freeman & Worth Publishing Group; Cambridge Physics Outlet; Harcourt College; John Wiley & Sons; McGraw-Hill and W.W. Norton & Company, Inc.

We believe the publishers will receive royalties based on the level of usage of their content by ULT customers. This relationship should help the publishers gain greater leverage on their content in a time where most publishers are struggling to maintain already depleted margins.

Revenue model: It is free to download, install and create courses using WebCT, but there are charges for learners to enroll in the course. License charges are available for 4 to 12 months, and the prices are dependent on the number of learner accounts being used at one time on the server. The minimum license charge is for 50 learners and there is a maximum license charge for unlimited users.

Prices range from $100 for 50 users for four months to $3,000 for unlimited users for 12 months. Costs change if the courses are hosted on the WebCT server. Costs range from $150 for 0-25 users for four months to $5,250 for up to 3,200 learners for 12 months. All charges include upgrades during the licensing term and e-mail technical support.

Option 3: Merge

Western Governors University (www.wgu.edu) relieves its participating institutions from creating their own online campus. WGU compiles the courses and programs that are offered by institutions, corporations and other entities in an attempt to make learning accessible to everyone. It was founded by 17 governors, primarily those from western states. WGU offers three forms of e-learning:

- **College-level courses**, which are provided by institutions that are members of the WGU in a variety of areas. Learners can enroll in those courses directly through WGU.
- **Credit-based degree programs** that are also provided by the participating institutions in different areas. Learners enroll directly at the sponsoring school and receive a degree credit from that school, not WGU.
- **Competency-based degree programs** are offered through WGU where students work toward a degree based on competencies. Learners must show that they have gained the skills and knowledge in particular areas. WGU employs traditional forms of assessment for the degrees, as well as practical demonstrations.

In an attempt to draw learners from around the world, WGU has also signed preliminary agreements to collaborate with:

- The Open University in Great Britain.
- The Open Learning Agency in British Columbia.
- The Tokai University Educational System in Japan.
- The Universidad Virtual del Instituto Tecnologico y de Estudios Superiores de Monterrey (ITESM) in Mexico.

Distance Learning Around the World

There are currently 12 distance learning universities around the world with more than 100,000 learners enrolled in each university, creating almost 3 million enrolled learners, and **none of them are located in the United States.**

The Open University is one of the largest universities in Europe, enrolling more than 200,000 learners in bachelors, masters and doctoral programs.

OU relies on the traditional tutor method where learners work in small groups assigned to one tutor. Learners meet on and offline to work on projects when necessary. The content that is created comes from a team effort—a team of academics designs the courses, groups of tutors work with learners, another group does the assessment and another group grades exams.

Open University enrolls all types of learners and is especially renowned for its ability to enroll people with disabilities.

Source: "Open U: A New Era in Higher Ed," Kent Pollack, *Converge Magazine.*

California Virtual University (CVU)

www.california.edu

CVU does not grant degrees. In fact, it does not even offer e-learning courses. What it does do is provide a gateway to the e-learning courses and programs that are offered by colleges, universities and community colleges throughout the state of California.

Students do not enroll in a course through CVU, but instead search through the course catalogs on CVU. Once they find the course they want to take, they are provided with a link to the campus providing that course. They register and pay the enrollment fee directly to that campus through which they will take their course. Participating schools must be accredited.

This solution provides convenience to the learner by providing one-stop shopping for their courses at a variety of schools. It is also convenient for the institution because it creates a higher-traffic marketing vehicle than the institution could internally generate.

While companies like Blackboard and ULT provide comprehensive solutions for e-learning, some **customers may opt to cobble together their own solution** by combining a selection of products. Components could include, for example:

- nCUBE providing its interactive multimedia **server hardware**. Its media server delivers interactive applications such as video-on-demand, home shopping, business training.

- Oracle Corporation providing the video **server software**.
- Digital Media Solutions, Inc., providing the **content development and distribution tools**. Digital Media Solutions provides web creation utilizing graphics, audio, video and web-database integration.

Front Office Meets Back Office

We believe the winner in the e-learning/ACEL race will offer an enterprisewide application that can manage a virtual campus, manage the learning process and integrate with legacy administrative systems. As an early indicator of our thesis, ULT is planning to expand its services to compete in the e-learning market by developing complete online campuses for universities.

ULT plans to provide a campuswide solution through a partnership with PeopleSoft, a provider of enterprise solutions. Together, the two companies will offer a complete academic and administrative e-learning solution to schools.

The administrative application market is currently dominated by vendors such as Science and Computer Technology (SCT) and PeopleSoft. Their products manage:

- Financial aid.
- Grants management.
- Library systems.
- Scheduling.
- Student registration.
- Human resources.
- Alumni/Development.
- Other administrative functions.

SCT's Banner2000 provides a management solution for higher education institutions. It provides an Internet solution for the back office needs of an institution. Banner2000 runs on Oracle's Object/ Relational Database Management System. The system can be accessed from a web browser by multiple users and allows multiple applications to run simultaneously.

SCT is a major player in the area of administrative applications; currently it is in almost half of all high education institutions that enroll more than 2,000 students. SCT is providing a complete online solution for campuses through a partnership with Campus Pipeline.

Campus Pipeline (www.campuspipeline.com)

Most universities do not have their services conveniently centralized. A learner must go to one office or building for financial aid, another to purchase books and yet another for transcripts or other administrative tasks.

In an effort to streamline administrative processes and build collaboration and interaction among learners, learning advisors and academic administrators, institutions are turning to e-learning support companies to reengineer many of the processes and structures that have defined "college" life for decades. Campus Pipeline attempts to provide a complete, convenient solution for faculty, learners and

administrators on campus. Campuspipeline.com helps learners, learning advisors and administrators create a learning portal that enables the administration of critical tasks from any computer.

This system is designed to augment, not replace, a c-learning campus. Universities that use Campus Pipeline can offer their students a uniquely customized "portal" or "pipeline" through which each student can access multiple services. "My Pipeline" enables students to enroll, register for classes, view grades, request transcripts, check on loan status, obtain reading lists, buy books, access e-mail and join interactive chat sessions with professors.

Revenue model: Campus Pipeline licenses their products and services. In addition, Campus Pipeline offers a sponsorship program that allows universities to license Campus Pipeline free of charge in exchange for a sponsorship from a network of businesses.

Campus Pipeline has the advantage of being linked to SCT, which grants it access to SCT's installed base of education institutions.

Administration and Management	Convene.com	Blackboard.com	Universal Learning Technologies	Campus Pipeline
	Registration, assessment, synchronous communication	Tracking, assessment, asynchronous, synchronous, customization, security	Assessment, note taking, collaboration, customization	E-mail, registration, grades, transcripts, financial aid, course information
Authoring Tools	No	Yes	Bravo	No
Consulting	No	Yes	No	No
E-commerce	No	No	No	Yes
Hosting	Yes	Yes	Yes	Yes
IMS Standard	No	Yes	Yes	No
Proprietary Technologies	No	Yes	Yes	Yes
Support Service	Yes	Yes	Yes	Yes
Training	Yes	Yes	Yes	No

Source: Company reports, Banc of America Securities LLC.

Hardware

We believe colleges' IT infrastructures are at least a half of a generation behind those of corporate America. Therefore, colleges that are eager to offer e-learning may need revamped IT infrastructures, including servers, networking and development tools. Obviously, this suggests enormous opportunities for the companies selling those solutions: telecom companies, hardware vendors, software publishers, ISPs and more.

Whatever the solution, scalability is critical to fully empower e-learning to beat c-learning. Obviously, one of the keys in scalability is the hardware.

When examining an e-learning platform, learners, providers and investors should consider the following:

- The platform should incorporate strong firewall technology to protect against security breaches and hackers. Firewall technology consists of a device designed to prevent service to unauthorized users and to minimize vulnerabilities to system security.

- The **operating system** should be scalable, widely used to insure compatibility and serviceability (i.e., Microsoft NT) and user friendly for nontechnical users (such as educators). The goal of the operating system should be to minimize software crashes that could keep learners off line for extended periods. E-learning start-ups are often tempted to develop the latest and greatest whiz-bang technology, but frequently prospective buyers will push back because the product does not have the proven track record of an Oracle or Microsoft application, for example.

- **Servers** should be high-performance (reliable, scaleable) units—Intel Pentium chips in Sun or HP servers, for example. The server system should contain backup network cards and power supplies to eliminate the possibility of a single point of failure in the servers and mitigate against downtime. Server co-location, which places the same information on multiple servers across the country, provides customers with faster access regardless of their location, yet allows the provider to cut back on headcount and administrative expenses.

- **Storage** capacity needs to ensure quick and easy access, scalability and serviceability. Storage can become increasingly important if the e-learning initiative expands to the point where a significant amount of content is being stored and accessed often by users across the world.

- **Access needs to be fast and easy**, which necessitates use of a browser such as Microsoft Internet Explorer of Netscape Navigator, the two *de facto* standards for surfing the Net.

- **Excess bandwidth** will save providers embarrassment when customers generate an unexpected surge in demand or the system crashes when a user wants to play a rich multimedia file. In order to minimize customer access delays, the provider should have several Internet backbone access points, in our view, ideally ones close to major Internet hubs or trunks, and backup points of access just in case.

In sum, we believe the guidelines above should be incorporated into any learning platform that intends to service a large number of users located across a geographically dispersed area.

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CHAPTER 4

SYNCHRONOUS, COLLABORATIVE E-LEARNING (SCEL)

"There are two ways of constructing a software design: One way is to make it so simple that there are obviously no deficiencies, and the other way is to make it so complicated that there are no obvious deficiencies. The first method is far more difficult."
-C.A.R. Hoare

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Synchronous, Collaborative E-learning (SCEL): Pronounced "Skell"

Advances in PC-based video- and audio-conferencing technologies, as well as the introduction of collaborative online learning software, allow users to participate in synchronous, collaborative e-learning (SCEL) from their desktops or laptops.

SCEL allows learners and learning advisors to collaborate on the Web in real time. SCEL products are designed to simulate the classroom by providing the following collaborative and interactive features:

- **Video and audio streaming** uses audio and video to present material and disseminate information to learners and enables them to see and speak with the advisor via computer speakers and the Internet, rather than a telephone.
- **White boarding.** These function like a traditional blackboard in a classroom and allow documents to be viewed and edited by the learners. Shared whiteboards allow class members to "draw" on and view the same on-screen page.
- **Application sharing.** The learning advisor and learners can work on the same program or document simultaneously. For example, the learning advisor might ask a learner to type in a formula in an Excel worksheet, and all the other class participants can see it being done. "App sharing" extends to synchronized viewing of (and listening to) multimedia courseware or video.
- **Breakout groups.** These allow a smaller group of learners to meet separately for collaboration over the Internet.
- **Floor control.** Classroom controls allow the learning advisor to monitor who is "in" the classroom and give impromptu quizzes. The controls also provide for quick feedback from learners to the learning advisor about whether, for example, the pace of instruction is too slow or too fast.
- **Handraising.** If a learner clicks on his or her "hand" icon, the learning advisor can see who may have a question or comment.
- **Message boards.** These are places where learners can post questions and answers about related topics.
- **Text chat.** Text chat provides an electronic forum in which the learners can communicate outside of the main classroom.

The SCEL products offer different combinations of administrative functionality that facilitate e-learning. Some of the functionality includes:

- **Reporting.** Provides information about the learners and progress of the class.
- **Scheduling.** Organizes assignments and other meetings for the class.
- **Support services.** Technical and customer support that is provided by the company.
- **Tracking.** Allows the learning advisor to monitor a learner's progress.
- **Asynchronous learning.** SCEL primarily helps facilitate synchronous learning, but certain packages also provide asynchronous components such as archived course materials.
- **Authoring.** Allows users to build online courses with their own content.

Banc of America Securities

SCEL is, at least in theory, supposed to be the wrecking ball of the bricks-and-mortar model. The SCEL model emerged from attempts to emulate and thereby simulate the classroom (c-learning) experience.

The Traditional Classroom		The E-Learning Classroom
◆ Students attend class at a scheduled time.		◆ **Synchronous, collaborative e-learning.** ◆ **Client-side software** may be required unless the course can be accessed via a **web browser**.
◆ The learning advisor lectures to provide the information.		◆ **Multimedia inclusive authoring tools.**
◆ Learners must attend class to get the information or rely on other learners' notes for information they miss.		◆ **Archiving** allows learners to access information from prior courses via the Internet or in password-protected files.
◆ Learners raise their hands to ask a question.		◆ **Handraising** allows students to press a button to indicate to the learning advisor that they have a question.
◆ Learners meet together in real time study groups or via e-mail discussions.		◆ **Breakout groups.** ◆ **Application sharing** allows multiple learners to use the same software application and documents.
◆ The learning advisor writes information on a blackboard.		◆ **Whiteboard** is used to display information to the class and can be appended during the class.
◆ Learners can stand in front of the class and give a presentation.		◆ **Floor control** allows the learning advisor to give students control of the classroom environment to give presentations.
◆ Learners perform research using the e-library that provides organized access to content.		◆ **Hyperlinks** provide access to learning content and resources from a variety of web- and non-web-based sources.
		
◆ Interaction with other learners and the learning advisor occurs at designated times in person.		◆ **Instant messaging, chat rooms, message boards and e-mail.** ◆ Privacy and security: A user name and password may be required.

Banc of America Securities

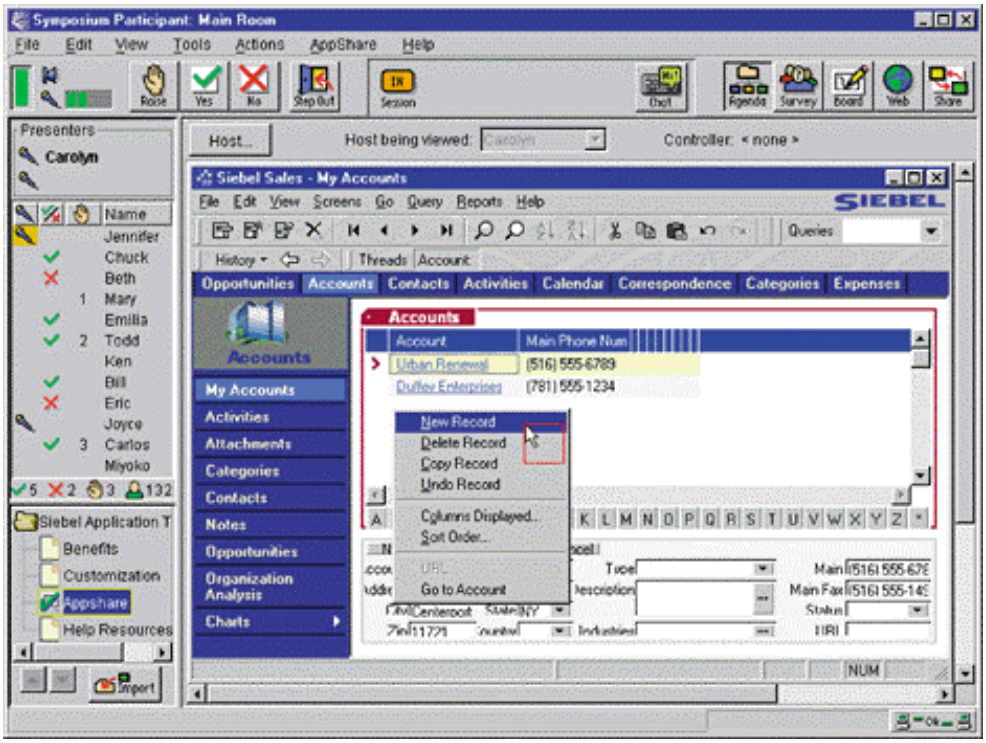
Among the training software vendors in the market for the virtual classroom are **Centra Software, LearnLinc, DataBeam** and **Avalon Information Technologies**.

John E-Learning Goes Live

Centra Software (Lexington, Massachusetts) was founded by the former general manager of Lotus Notes R&D. The company's product, Symposium, is a virtual place in which learning advisors and learners "meet" online at a scheduled time. The learners log on through a standard web browser and speak to each other using microphones and listen to other class participants using speakers or headphones. They can view and work on the same applications collaboratively, while the learning advisor, logged on at his or her own desktop computer, monitors the conversations and passes control of the classroom from learner to learner.

Fictional Case Study

The vice president of sales for Digibyte (Sally Sales) needs to train her troops on the newest product release. Fortunately, Digibyte licensed Symposium from Centra. When the scheduled course time arrives, Sally logs onto the web site and greets her troops via the screen below:



Source: Centra Software.

- The learning advisor (in this case the vice president of sales) **uses audio conferencing** so that her troops can hear her enthusiasm about the new product.
- Sally **fields questions** from her troops who are puzzled by some of the product's features.

Banc of America Securities

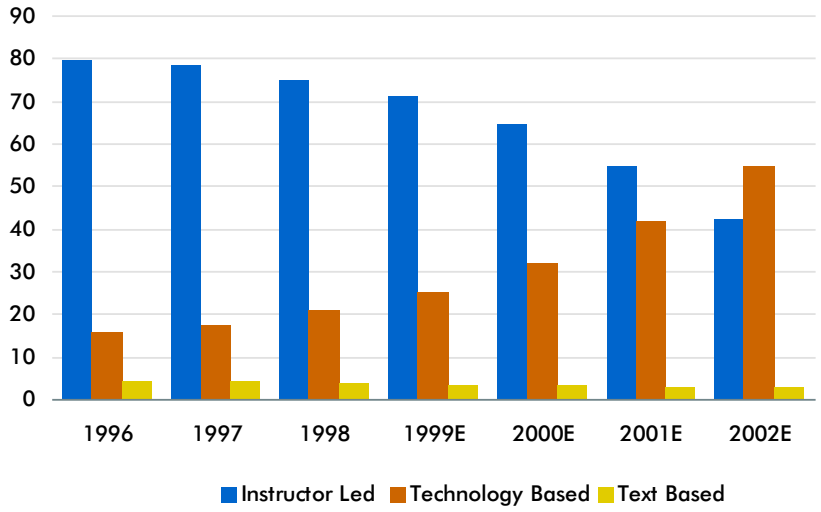
- All of the regional vice presidents can **share the Excel document** that includes the forecasts for their respective regions.
- The **whiteboard technology empowers Sally to append her presentation** on the fly.
- Sally creates a few **break-out rooms** in order to allow her troops to practice their client presentations.
- Sally turns **"floor control"** over to the southwestern region vice president so he can demonstrate his presentation.

	LearnLinc **www.ilinc.com** See page 71 for more information	**LearningSpace** **www.lotus.com** See page 108 for more information	**DataBeam** **www.databeam.com** See page 108 for more information	**Centra** **www.centra.com** See above for more information	**BRIGHTLight** **www.atlantis.com/~avalon/** See page 75 for more information
Application sharing	Yes	Yes	Yes	Yes	Yes
Asynchronous Learning	Yes	Yes	No	Yes	Yes
Authoring	No	Yes	No	Yes	Yes
Breakout groups	Yes	No	Yes	Yes	Yes
Floor Control	Yes	Yes	Yes	Yes	Yes
Handraising	Yes	Yes	No	Yes	Yes
Message boards	Yes	Yes	Yes	Yes	Yes
Reporting	No	Yes	No	Yes	Yes
Scheduling	No	Yes	No	Yes	Yes
Support services	Yes	Yes	Yes	Yes	Yes
Technology	Streaming	Compression	Streaming	Streaming	Compression
Text Chat	Yes	Yes	Yes	Yes	Yes
Tracking	Yes	Yes	Yes	Yes	Yes
Video and audio streaming/ conferencing	Yes	Yes	Yes	no video	Yes, no two-way audio
White boarding	Yes	Yes	Yes	Yes	Yes
Pricing Model	$80,000 for 100 concurrent users plus 19% services and support	$40,800 for 100 concurrent users	Starts at $9,995 for 25 users	$45,000 for 100 concurrent users plus 18% services and support	$39,500 for 100 concurrent users

Bandwidth Blues

The use of classroom learning is declining as the use of other techniques increases:

IT TRAINING MARKET BY DELIVERY SEGMENT, 1996-2002E



Source: IDC.

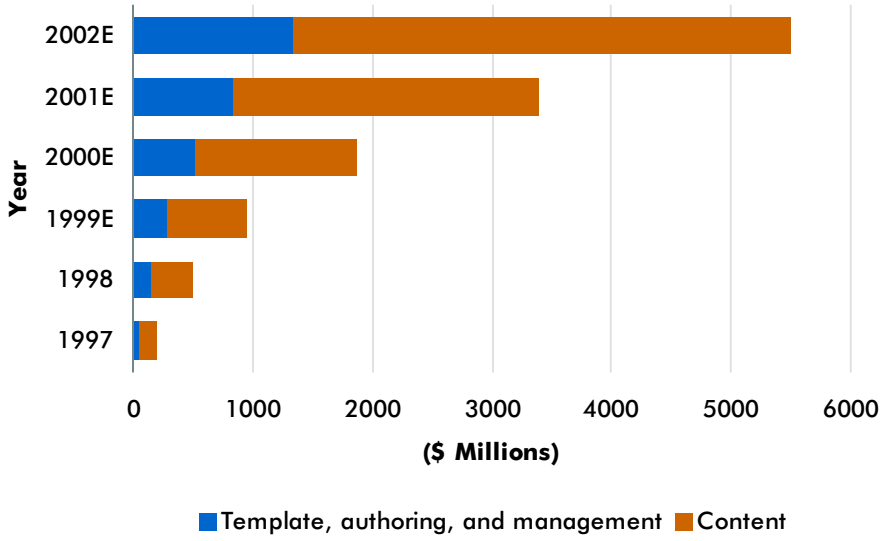
According to IDC, by 2002, technology-based training will have market share of 54.9%, versus instructor-led methods, which will only have an estimated market share of 42.4%.

Yet, for e-learning to dominate the landscape of learning, it is necessary to combine the benefits of c-learning with the multiple benefits of e-learning (see pages 7, 57 regarding the benefits of e-learning).

The benefits of c-learning are several and include:

- **Personal encouragement.** A live instructor can escort a learner through the complexities of the subject until the learner reaches the level of understanding desired.
- **Collaborative working**. Learners have interaction and problem-solving with classmates and instructors.
- **Insulation from workplace interruptions.**

THE MARKET FOR WEB-BASED IT TRAINING



Source: IDC.

The market for web-based training is expected to generate more than $ 5.5 billion in revenue by 2002, according to IDC.

The ACEL and SCEL technologies discussed above are aided by compression and streaming, which help them transport more video and audio through limited bandwidth.

- **Compression.** The information is made as small as possible by replacing the repetitions of code with its own code that can then be expanded when it is received. The users must have the appropriate software to encode and decode the information.
- **Streaming.** The files are downloaded as users need them so they can start watching a video clip before the entire file has been downloaded.

While compression and streaming are powerful enablers for more multimedia-supported e-learning, we believe there is nothing like a generous dose of bandwidth. Bandwidth constraints generally limit the size of the file as well as constrain the speed with which the file is transported. Either way, the learner is not happy:

- If the file is small, it may not contain objects that would enhance the learning experience, such as video or audio enhancement. Reading text on a screen gets boring quickly.
- If the transport is slow, the learner may lose patience and thereby jeopardize learner retention. A slow transport will also clog up the bandwidth, potentially infuriating the IT manager because other enterprise information cannot flow freely.

Skirting the Bandwidth

An interesting way to circumvent the bandwidth problem and still offer a rich learning experience is to offer the following hybrid solution. Hybrid delivery attempts to marry the strengths of both networks and the Internet along with CD-ROMs.

In a hybrid model, the course developer puts video, audio and large graphic files on the CD-ROM. This is done to minimize the need for bandwidth, as multimedia files transmitted over the network can clog corporate intranets. Text, tests and other components that are small enough for delivery over a network or time-sensitive enough to require regular updates are stored on a web site.

When learners are ready to access the learning content, they load the CD-ROM on a personal computer, then go to the web site. With enabling software (perhaps a plug-in downloaded to the hard drive), the web-based part of the course is able to give instructions to the CD-ROM. Whenever an element of the course is activated that requires a media file from the CD, the plug-in automatically knows where to get it. A Java applet that runs inside the browser tells the web-based course when to search for and run media files on the CD-ROM.

The best solution to bandwidth problems is to increase bandwidth. We already have the solutions: fiber, T-1 lines, DSL, copper phone lines and more, but many of these solutions are either too costly for consumers or only available in select areas. In time, broadband (where a single "wire" can transmit multiple signals at rates above that of ISDN [1.5mbps]) will be broad-based and creative solutions to solve the bandwidth puzzle will be passe.

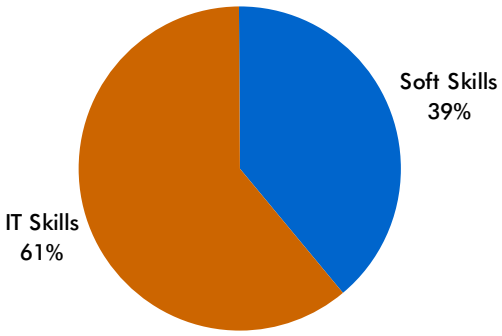
E-Learning and People-to-People Training

When the bandwidth issue is solved—which it surely will be—we believe more soft skill training will be delivered digitally. Soft skill training, in our view, requires more media (voice, audio, etc.) and therefore bigger files to ensure an effective learning experience.

How can people learn sales techniques without hearing the advisors' intonation? Seeing their face? Watching their body language? Contrast sales ("soft skill") training with IT training: writing code, wiring cables, demonstrating keystrokes, none of which require much video or audio. Except perhaps: "Hey dummy, a port has nothing to do with boats!"

***e*-benefit: Multimedia content: audio, video, interactive chat, text, etc., that help to create learning environments suitable for many different types of learners.**

IT VERSUS SOFT SKILL SHARE OF THE COPORATE TRAINING MARKET, 1998



Source: Simba Information Inc.

By the way, this reference to "soft skill" may be our last, because we find the nomenclature useless, if not derogatory. We believe the terms soft skills and IT training are no longer sufficiently broad nor

appropriate for capturing the dimensions of the training industry. Therefore, we break training into two more appropriate groups, in our opinion: PWT training (people-with-tools) and PTP training (people-to-people)

TYPES OF TRAINING

People-to-People Training	People-With-Tools Training
Group management	Heavy machinery operation
Selling and marketing	Truck driving
Communications	Automobile repair
Diversity	Typing
Interviewing techniques	Software skills
Team building	Culinary
Conducting meetings	Art/design
Negotiation skills	Dental equipment
Public speaking skills	Surgical equipment
Personal improvement	Musical instruments

Source: Banc of America Securities LLC.

The Leading People-to-People Training Companies

www.achieveglobal.com

Achieve Global (Tampa, Florida), formerly Times Mirror Training, provides training on topics such as sales leadership and customer service through instructor-led courses, self-paced programs and CD-ROM titles. The company offers learning components within four major competency areas (sales performance, customer loyalty, teamwork and leadership).

www.provant.com

PROVANT (POVT)

Market Cap.	Stock Price (52-Week High, Low)
$163 million	$13-1/4 ($24-3/4, $9-1/2)

PROVANT had training revenues of $138 million in fiscal (June) 1999. The company offers training on a variety of topics, primarily centered around human capital, workforce professional learning and project implementation. Training is delivered primarily via instructor-led courses and seminars, publications, CD-ROMs and literature. PROVANT is one of the only national soft skills training providers that can deliver a full complement of performance-improvement services.

American Media Incorporated, which is owned by PROVANT, recently launched 1stoptraining.com. The site provides training resources available directly over the Internet. Customers can purchase

products related to their specific industry at the specific site, retail.1stoptraining.com and healthcare.1stoptraining.com. There are also general business training products available in a variety of forms, such as books, software, videos and CD-ROMs. Consumers can also get instant advice and feedback at the Business Clinic. This is an e-commerce solution for trainers that allows them to go to one place for all of their training-related product needs.

For a detailed discussion on PROVANT please see pages 229-244.

www.ontarget.com

OnTarget, Inc., provides sales training programs primarily to Fortune 1000 corporations and other large and medium-sized businesses. OnTarget provides comprehensive training programs designed to assist its clients in developing advanced sales strategies and processes, developing essential selling skills, achieving efficient transfer of product and industry knowledge and adopting effective leadership and coaching techniques.

www.franklincovey.com

Franklin Covey (Salt Lake City, Utah) was formed in May 1997 with the merger of Franklin Quest and Covey Leadership Center. Franklin Covey provides training on topics like time management skills through seminar/workshops and books.

www.wilsonlearning.com

Wilson Learning (Eden Prairie, Minnesota) offers instructor-led courses, CD-ROM courses, as well as print and technology-based diagnostic programs on topics like organizational effectiveness. Programs are geared toward human resource managers, sales teams and division managers.

Development Dimensions International (Bridgeville, Pennsylvania) provides training in areas such as leadership development and team skills with more than 100 instructor-led modules and CD-ROM titles. The majority of DI's students are managers and front-line staff employees.

The Forum Group (Boston, Massachusetts). Through instructor-led courses, CD-ROM titles, printed materials and courses via the Internet and corporate intranets, the company offers 200 learning modules on topics like working in groups.

www.ccl.org

The Center for Creative Leadership (Greensboro, North Carolina) offers training on topics including developing the strategic leader and leading creatively through programs designed primarily for middle- to upper-level managers in large corporations. Training is delivered via instructor-led courses, publications, simulations, assessment instruments, satellite and CD-ROMs. Major clients include Kraft General Foods and Pfizer.

E-Learning and Community

One of the strengths of c-learning is the sense of community that develops between classmates. Regular interaction with fellow learners in a classroom can often engender camaraderie as students struggle with difficult lessons or even share laughs about the teacher.

However, without a classroom, community can be difficult to engender. Therefore, many e-learning companies strive to offer some vehicle with which students can foster a sense of community—**a key to retaining learners as well as improving their outcomes**.

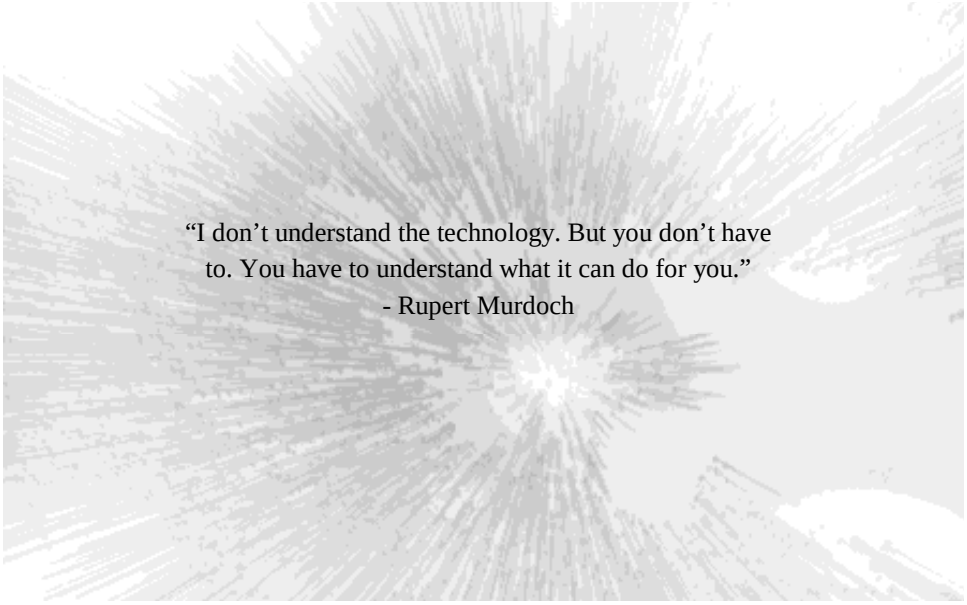
Pensare (www.pensare.com) creates "Knowledge Communities" to provide training. The Knowledge Communities create a support environment that encourages collaboration among learners. Learners can play a variety of roles in the communities such as observer, mentor, coach, expert or administrator. Depending on the subject area, a participant might be a expert in one area but a learner in another. Each Knowledge Community has a theme related to business performance such as Leadership and Management, Customer Relationships and Business Essentials.

The Knowledge Communities provide a collaborative environment that encourages everyone to learn from each other. Learners have the opportunity to interact with each other through e-mail, chat rooms, multiuser simulations and expert coaching.

Many e-learning companies strive to offer some vehicle with which students can foster a sense of community—a key to retaining learners as well as improving their outcomes.

CHAPTER 5

THE RIPPLE EFFECTS of E-LEARNING



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E-Learning and a New Business Model

Our intuition suggests that e-learning is less expensive to buy than c-learning. There are no classrooms nor facilities to maintain. The data below seem to challenge our hunches as tuition prices are not materially different. The reasons for the counterintuitive findings are somewhere in the midst of:

- Class size is not necessarily different. For example, Apollo's online classes are smaller than its c-learning classes.
- Faculty expenses can be greater for e-learning than c-learning because of the training needed to prepare a learning advisor to teach online.
- Student services for e-learning may exceed c-learning because of the technology-related issues.

or

- Perhaps the institutions recognize that e-learning is price inelastic—those inclined to buy are not sensitive to price and will pay more for the convenience of e-learning.

	Apollo's University of Phoenix		Keller Graduate School of Management		Strayer Online University	
Synchronous/Asynchronous	Asynchronous		Asynchronous		Synchronous	
Accreditation	Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools		Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools		Commission on Higher Education of the Middle States Association of Colleges and Schools	
Cost	c-learning	e-learning	c-learning	e-learning	c-learning	e-learning
Graduate	$363	$470	$326	$362	$260	$260
Undergraduate	$372	$375	N/A	N/A	$190	$190

Source: Company web sites, documents and representatives.

SCEL or ACEL: How Do Learners Choose?

Historically (albeit a brief history!), distance learning classes suffer high dropout rates. We believe there are multiple reasons for this, both provider and consumer-driven. Provider-driven reasons include, but are not limited to, poorly designed learning offerings, exorbitant learner-to-learning-advisor ratios and aggressive, misdirected marketing efforts. Consumer-driven reasons include lack of discipline and lifestyle changes.

Some schools that offer online classes are experiencing high retention and graduation rates. For example, more than 60% of Apollo Group's online learners graduate and receive degrees. We attribute its success to:

- Learner/learner advisor ratios of roughly 10:1 (better than the e-learning offerings!).
- Strong technical support.
- Sustained learner support from administrative professionals.

The choice between SCEL (synchronous collaborative e-learning) and ACEL (asynchronous collaborative e-learning) is often contingent on the learner's lifestyle—both personal and professional.

For example, **asynchronous** is ideal for someone who travels extensively or has an erratic schedule, thereby precluding commitments to a fixed schedule. If the ACEL learner needs to interact with other learners in the class or the learning advisor for clarification on a topic, he or she can post questions on the classroom message board and wait for a response.

We believe ACEL learners need to display more discipline than SCEL learners because so much of the ACEL's learning engagement is self-started, absent the time obligation.

SCEL may be better suited for learners that need more structure and immediate feedback to enhance the quality of their online learning experience. SCEL most closely resembles the traditional classroom setting. In this setting, the learner behaves exactly as a classroom learner behaves, with one significant exception—he or she is not in a classroom! Through the marvel of modern technology, learners engage with other learners and learning advisors in real time, in a virtual classroom in the comfort of their own homes or offices.

***e*-benefit: E-learning accommodates individual's learning style: self paced, asynchronous, synchronous.**

E-Learning Benefits to the Business Model

We believe the Internet can increase operational efficiency for businesses by reducing the time, costs and resources required to transact business and generally improve responsiveness to customers and suppliers. Higher education institutions are no different. They, too, can leverage the Internet to locate new customers and manage relationships while improving service and increasing revenue.

Higher education institutions can use the Internet to automate their internal operations, including development, finance, sales and purchasing. For example, **Strayer Education, Inc.**, has harnessed the power of the Internet to improve several business processes.

The Campus Bookstores

- Strayer no longer uses a bookstore on any of its 13 campuses. The Internet has completely replaced its bookstores. Strayer has found that it can save money by having students buy 100% of their books online. The students are happy because they save valuable time by ordering all of their books in the comfort of their own home and not standing in long, frustrating lines.
- This helps Strayer save costs and improve margins two important ways. First, by not needing a support staff in place at 13 campus bookstores, Strayer saves in employee payroll and related expenses. Secondly, operating margins are improved because they have converted the bookstore space into classrooms. Company sources say the bookstores were, at best, breaking even.

Financial Aid Application Process

- Again, this is an area where the students and the university win. No longer do students have to go to campus to see a financial aid counselor. A student now completes the entire application process online. Strayer's web site offers links to FAFSA (Free Application Federal Student Aid) and Strayer's student loan product (Strayer Education Loan), as well as other sources of financial aid, including scholarship foundations.
- The online financial application process helps Strayer in several ways. First, it helps reduce the risk to Strayer as students deal directly with the Department of Education's FAFSA, leaving Strayer employees entirely out of the process. Also, since students no longer need to use Strayer employees when seeking federal aid, Strayer has been able to reduce the number of employees in its student loan department. The department, which used to have 60 employees, currently has 50. The goal is to reduce this number even further.

Career Development

- Strayer does not employ a career development department. All of the students use an online career service to post their resumes and locate companies that are seeking individuals for employment. The company uses the popular web service JOBTRAK.COM for students to post their resumes and examine company job postings on line.

Student Services

- Strayer has employed the Internet in order for students to register and schedule classes, get grades and use learning resources, all online. For example, when a student needs a book to help with a research project, he can locate the book online from Strayer's central library and have it forwarded to

the remote campus where the student receives it. By incorporating the Internet in this fashion, Strayer saves the cost of having a library on each of its 13 campuses.

- Students can handle time-consuming functions like registering and scheduling classes and checking grades completely online, without ever having to set foot on campus. Again, given that most of Strayer's students are full-time working adults, this is an immensely useful tool for students.

E-Learning and Financial Aid

Historically, eligibility for Title IV financial aid was not granted to institutions that enrolled more than 50% of their students in "distance education" programs or offered more than 50% of their courses via distance education methods.

Title IV

Title IV of the Higher Education Act (HEA) of 1965 (since amended and reauthorized) is the legislation that governs all forms of federally sponsored financial aid. The Department of Education (DOE) requires that schools that utilize Title IV financial aid for their students meet certain criteria. These criteria concern financial strength, record keeping, operational procedures and student relations. The programs available under Title IV include Federal Pell Grant (PELL), Federal Supplemental Educational Opportunity (SEOG), Federal Family Educational Loan Program (FFELP), Federal Perkins Direct Student Loan Program (Perkins), Federal Work Study (FWS) and the William D. Ford Direct Student Loan Program (FDSL).

In what we view as a growing realization by the Department of Education that distance learning is here to stay, the Department recently launched a project with 118 institutions in 17 states to test the viability of financial aid **without restrictions** for distance learning. The project is expected to last five years and could be expanded dramatically in three years, depending upon the success to that point.

Under this pilot program, participating institutions will receive waivers of certain requirements, greatly expanding the schools' ability to offer distance education programs.

While the Department of Education has now stuck its proverbial toe in the distance education water, Sallie Mae had no problem jumping right in with all its clothes on. Sallie Mae loans money based on the applicant's credit history, irrespective of the learning venue.

Thus, a student who wants to take a course over the Internet and never steps foot inside a classroom could apply for a Professional Education Loan from Sallie Mae just as a traditional student would apply for a regular college loan. The process is very simple; students can apply to borrow the cost of tuition plus $3,000 each year, and the application is one page, downloaded from the www.salliemae.com web site. The standard term is 10 years, with a minimum payment of $50 per month beginning roughly six weeks after the student receives the loan.

We believe the Sallie Mae alternative could be very attractive for e-learners, although we expect the majority of Sallie Mae borrowers to be adult learners because they have better credit than does the typical high school graduate.

We expect other alternative forms of financial aid to develop over time, and believe they too, will be credit-based. However, competing on terms and rates with the Federal program is difficult, and thus we do not expect to see a new vendor dominate the market. But in general, the very existence of student loans for distance education shows us that acceptance is rising and the market is here to stay.

Financial Aid Over the Internet

eStudentLoan

www.estudentloan.com

eStudentLoan provides a searching service for students to find school loans. The LoanFinder allows users to search for loans and applications. The information it provides is also broken down into categories depending on the user's status. There are resources for parents, undergraduates, graduates, international student, adult student and high school students. There are also resources for lenders and financial aid professionals. The information is available free of charge, and the loans are for learners enrolled in a traditional education program.

The Ripple Effects of E-Learning

As e-learning rises in stature on the landscape of learning, other businesses emerge on the landscape. Perhaps not since Henry Ford's development of the assembly line, have we, as a society, witnessed something that has had such a dramatic impact on the way we do business. E-commerce and the Internet have allowed businesses to do things that were not even dreamed of before. Imagine, just a few short years ago, being able to establish an entire business with nothing more than a few computers and a handful of employees—no inventory, no large sales force, just a web site. Now some of those companies, only a few years old, have market values larger than some of the oldest and most prestigious companies in the U.S.

No one will argue that e-commerce has had a dramatic impact on the way business gets done. Ever since the proliferation of the Internet in the early 1990s, businesses have been turning to the Internet and e-commerce at an alarming rate. It has greatly simplified the way in which businesses contact potential customers. It has improved efficiencies in back offices and, in some cases, even rendered human employees obsolete. It could be argued that the scale of the improvements and efficiencies that were gained from the creation of Henry Ford's assembly line could equal those that will be witnessed with the Internet. It has become, in fact, a necessary way to do business, because if a company is not doing business on the Internet, then the perception is that it is handicapped.

Education companies are perhaps in a better position to benefit from this phenomenon than most other businesses. If one considers what is needed to make an education company successful and valuable, content and distribution channels are conceivably top on the list. The Internet serves this purpose ideally. It is a very powerful way for individuals to access information in a manner that facilitates the learning process that is best for them.

With the growth of these education companies, other businesses that directly or indirectly serve this core market are proliferating as well. A classic parallel is that of the manufacturing company. As the core business grows, other businesses are created as parts and services are needed to support the growing core company. The education market is no different. As certain education companies begin to establish themselves as core companies, many other e-learning businesses are emerging to provide services and products that these core companies require.

The Internet is a powerful way for individuals to access information in a manner that facilitates the specific learning process that is best for them.

IBM's recent venture into the "e-business" certification program is an example of this trend. IBM has recently developed an "e-business" certification program designed to increase brand equity and broaden the number of "e-business"-knowledgeable resources serving the growing e-commerce market. Training is being performed online and helps add to IBM's already extensive educational offerings.

Outlined below are examples of companies that are emerging in the wake of and benefiting from the success of many core e-learning companies.

E-Testing

Traditionally, testing has been associated with academic progress—college entrance exams, finals, graduate school entrance exams, etc. As technology progresses, e-testing is emerging. E-testing now includes just about any type of "exam" that consumers have to take: written drivers license tests, aviation safety exams, medical licensing exams for doctors, foreign language proficiency and IT certifications for any number of global technology providers. These exams are given across the world, not just in the United States.

E-testing is a global phenomenon, driven by the need for standards that hold up across the cultural and language gaps that continue to separate countries in the global economy.

Whether the e-learning was part of a formal university experience or part of a corporate learning event, learners must be able to know whether or not the learning process was successful—did they acquire the knowledge they set out to acquire? Employees, learners and parents need to know the status of their learning experience:

- **Employees** can use testing and assessment to show evidence of progress towards a specific career goal. The e-test process provides them with tangible proof that a specific skill set has been acquired—tangible proof that can be taken by the learner to his or her next position
- **Learners** and employers can use the assessment process to enhance the job-placement process or to place the learner into the next step in the learning process (i.e., graduate school).
- **Parents** can use assessment e-learning companies to monitor their child's progress at school and become more involved in their child's education.

We believe migration from testing to e-testing will parallel the migration from c-learning to e-learning. E-testing:

- **Cuts** the time necessary to produce copy ready tests.
- **Creates** greater accessibility because learners can take tests at multiple times rather than complying with the strict and few determined dates set by the testing companies such as ETS.
- **Allows** faster analysis of test results.

E-testing companies offer some, if not all, of the following:

- **Internet-based registration.**
- **Exam content creation.** Design test questions based around standards, subject matter and vendor requirements.
- **Exam proctoring.** Administer the exam in test centers with computer-based delivery.

- **Security.** Monitor who can use the materials and access the information.
- **User profiles.** Keeps information on the individual learners to improve the assistance they provide.
- **Assess results.** Provide feedback on the test results and break the information down into a learner-friendly format. Indicates in what subject areas the test taker needs to improve.
- **Customized services.** Provides feedback and advice to the individual learner.

Sylvan Prometric
www.sylvanprometric.com and www.2test.com

SYLVAN (SLVN)	
Market Cap.	**Stock Price (52-Week High, Low)**
$1.0 billion	$20 ($34-5/8, $17-1/8)

Sylvan Learning's Testing Division has the leading worldwide distribution network for computerized exams. The company delivers exams at more than 2000 international sites on six continents and 100 countries. Authorized Prometric Testing Centers (APTCs) are located within facilities, such as third-party computer training centers and campuses of colleges and universities.

As online campuses, distance learning programs and virtual education models proliferate worldwide, key unanswered questions remain:

- **How can the educators and universities test the students? How can a university authenticate that the student on the other end of the line is actually the one doing the work and worthy of receiving college credit or perhaps even a degree?**

Sylvan (see pages 259-279) recently announced that it will integrate its computer-based test delivery capabilities with Blackboard.com's virtual campus systems to deliver distance learning tests in a secure environment worldwide. Students around the world can take a test at a local Sylvan Prometric center. Sylvan will provide authentication, proctoring and other security services.

www.measureup.com

Measure Up provides online preparation for IT certification. Currently, it offers the complete set of certification tests for Microsoft, Comptia, Novell and Oracle. The service provides practice questions to prepare the learner for the exam. Measure Up also provide the testing preparation on a CD-ROM.

Revenue model: Sell on a per-test basis. Prices are $79-99 per course.

The Market for IT Certification

According to a study commissioned by Sylvan Learning Systems and conducted by the Gartner Group, **the value of information technology industry certification is at an all-time high in the minds of corporate managers and IT professionals**:

- An increase of 55% in IT professionals seeking multiple certifications.
- An increase of 12% in IT professionals seeking certification for career advancement.
- An increase of 365% in using vendor-approved self-study methods as the primary preparation for certification and an increase of 7% in choosing instructor-led IT programs.
- An increase of 96% in corporations willing to spend more than $200 to train candidates for certification.
- An increase of 16% in certification as a criterion for promotion.

The growth is driven primarily by the success of IT vendors. Among IT vendor-approved certification programs, certifications related to networking technologies continue to lead the market. The other area experiencing significant demand from the marketplace is Intranet/extranet-related certification.

More than 1 million IT certification tests were delivered in 1997.

According to IDC, other factors contributing to IT professionals' continued interest in certification include:

- **Emerging technologies.** As new technologies emerge, standards to assess the job skills necessary to implement these new technologies must be developed. Certification is a way to create such benchmarks, and individuals need to get these credentials to become valuable in the marketplace.
- **International market growth.** As more countries, such as those in Asia, embrace certification, the international certification market tends to increase at a faster rate than the North American one. For example, more than 50% of Lotus' certification candidates are outside North America.
- **Multiple certifications.** An increasing number of IT professionals need to be skilled and certified on a variety of platforms because the trend is toward system integration.

According to IDC, the worldwide market for IT certification-related training and testing exceeded $1.3 billion in 1997.

Certification: Strengths and Weaknesses

Getting certified in hot areas is a way for IT professionals to be more valuable to potential employers and to increase their job mobility. IT professionals, managers and prospective employers are relying on certification to validate sets of IT skills that need to be updated on a frequent basis.

As a result, we believe certification will remain a competitive advantage for the hundreds of software vendors that offer it along with their training.

In the long term, we are not bullish on the value of certification because it is too product-centric. **We believe certification will ultimately fail the workplace because tests are nothing more than product awareness tests.**

In other words, most certification speaks to product knowledge, not competency on the job. For example, contrast an accountant who is certified to practice (CPA) with a Certified Novell Engineer (CNE). The accountant must work for two years (depending on the state) and perform a checklist of specific tasks before being certified. The CPA must demonstrate workplace competency.

The CNE must only pass a test. Does the CNE know how to build and service a network? Maybe. But if he or she does, was that determined by a certification exam? CNEs know lots about Novell products, but not necessarily much about functioning in the workplace.

IT certification is helpful as a sorting machine; we just are not sure who is being sorted from whom. Would one trust a pilot who had only flown in a simulator? Why trust a network engineer who only passed a test—built by the product vendor?

The vendors' (Microsoft, Novell, Cisco) economic self-interest is in selling products. Certification is a brilliant tactic to add cachet to certain users, thereby instilling them with pride and ultimately ownership in the success of the products.

The challenge for certification is that it must be more aligned with job descriptions and competencies.

Virtual University Enterprises (VUE)
www.vue.com

A part of National Computer Systems (NCS), VUE provides electronic testing for certification in IT training. Tests are delivered and scored, and results are returned via the Internet.

NCS and VUE are tapping into other professions. A recent agreement with the Council of State Board of Nursing Inc. means that NCS will be the exclusive provider of electronic testing and examination development for the nurses. This contract will serve as the launching point to build a professional testing network of 200 testing centers across the country.

Revenue model: Sell to individuals and companies. VUE serves as the distributor of the exam; it does not create the exams. VUE's clients, who are the providers of the exams, set the individual exam prices. Clients include major technology vendors such as Microsoft and Novell.

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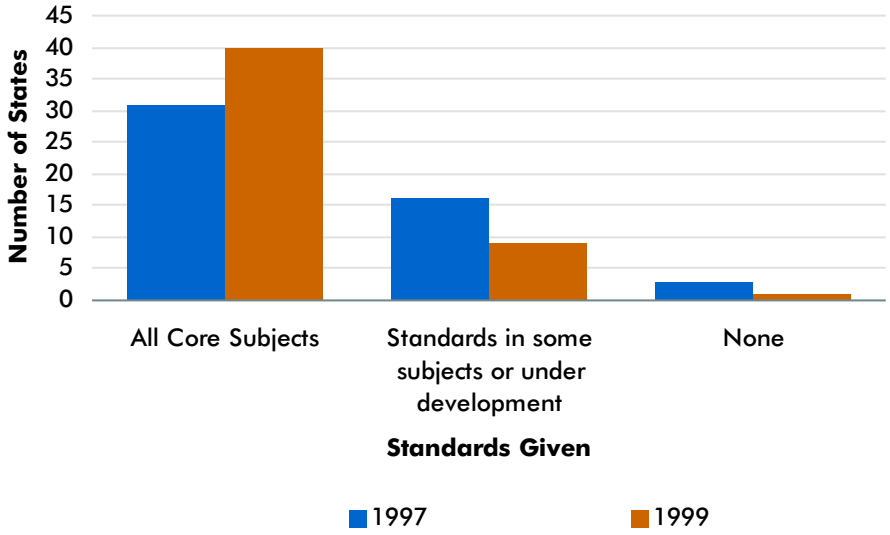
www.edutest.com

As accountability becomes the rage and more states deliver statewide assessments to measure school performance, preparation for those exams will be crucial for the stakeholders: administrators, teachers, pupils and parents. Edutest addresses the accelerating demand to prep K-12 learners for statewide assessments.

NUMBER OF STATES WITH STANDARDS IN K-12 SCHOOLS



Source: *Education Week.*

Edutest offers online tests, diagnostic information, instruction and related feedback for grades 2-12. Edutest will analyze the results of an individual learner or an entire class and put the information into an organized spreadsheet that the learning advisor can access. Parents can use the service at home to help their children prepare for upcoming tests, and learning advisors can use it for an entire class. Edutest's content comes from a test bank of questions that it developed based on the applicable state standards.

Currently, Edutest is being used in 45% of the school districts in Virginia, and that number is rapidly growing. There is an almost 100% renewal rate, indicating that learning advisors, administration, parents and learners have been very happy with the product. We believe the success is a result of the quality and size of the test bank that supports the practice test.

Edutest plans to roll out in Texas, Florida, Ohio and California in the next year—four large states where standards are important. In addition, it plans to release a remediation tool to go along with its assessment. The product called **Mind Bytes** will be a remediation tool for learners. When a learner misses an answer on a practice test, the program will provide the content related to that topic. The learner will not just be given the right answer, but also the information that is needed on the topic area so he or she will be able to answer all future questions on that topic.

Revenue model: Sell subscriptions directly to schools and school districts. School licenses are $2,995 annually.

Homeroom.com (www.homeroom.com)—a Princeton Review company—is another business borne out of the swelling demand to prepare for statewide assessments. The site, designed by Concrete Media Construction, will provide resources for learners, parents and learning advisors to improve the skills of learners in grades K-12. Homeroom.com will diagnose a learner's strengths and weaknesses with questions that correspond to specific state's requirements. The parent or learning advisor can then create an individualized program for the learner. The site will also customize content for each end-user group, which will allow schools to use the site more effectively.

The site will:

- Create a connection between parents, learners and learning advisors by keeping track of assignments and progress.
- Provide assistance to learners in improving their test taking skills.
- Assess learners' skills and provide assistance in improving weaknesses.
- Provide detailed information about areas in which a learner needs help as well as activities to improve those skills.

Revenue model: Sell to schools and home. Some of the services are free, while others will be based on a fee model.

Princeton Review (www.princeton.com) provides test preparation courses for learners applying to college and graduate school. The courses are taught in centers across the country. In addition to its courses, the company offers several services online. In addition to Homeroom.com, Review.com offers information about applying and getting into college and graduate school. Tutor.com provides a search engine for finding tutors throughout the country. Princeton Review also has partnerships with Student Advantage (see page 66 for more information) and Student Monitor, a market research company.

Traditional Test Preparation Goes Online

Kaplan (www.Kaplan.com), owned by the Washington Post, provides resources for test preparation and related activities. Kaplan provides test preparation for graduate and college entrance exams as well as tutoring for K-8 with their SCORE! Centers. The Kaplan web site provides information about all the courses that Kaplan offers. In addition, the site provides tips about applying to school, interaction with other learners, and test preparation activities. The web site also has a section called "My Site" that can be customized to the individual learner. It customizes the site to the users' needs by providing information about the relevant area and a calendar that the learner can use to keep track of testing dates and courses. There is also a Kaplan store that sells relevant test preparation products. The services provided on the site are available for free and the "My Site" features are available to anyone who has purchased Kaplan products or is enrolled in a Kaplan course.

To recap the companies:

	Create Exam Content	Customized Services	Exam Preparation	Procter Exams	Registration	Security	User profiles
Edutest	Practice Exams	Yes	Yes	No	Yes	Yes	Yes
Homeroom	Practice Exams	Yes	Yes	No	Yes	Yes	Yes
Sylvan Prometric	No	No	No	Yes (1)	Yes	Yes	Yes
Measure Up	No	No	Yes	No	Yes	Yes	Yes
VUE	No	No	No	Yes (1)	Yes	Yes	Yes

(1) In the centers.

Other Ripple Effects

Enrollment Services

EMBARK.COM

www.embark.com

Embark.com, formerly CollegEdge, makes applying and researching college and graduate degrees easier by allowing the process to be performed entirely online. The Embark.com service provides information about colleges to interested students, as well as an environment for recruiting online. In addition, Embark works with colleges and universities to recruit students online and assist counselors in tracking and managing students' progress.

A student can apply online for an undergraduate or graduate degree via Embark. Embark.com provides the application on the school's web site as well as on the Embark.com site.

Revenue model: Colleges pay a fee of $5,000 to Embark.com to have their application on the site and then charge an additional $10 fee per application processed. The service is provided free to the student. There is also an e-commerce model with the Embark.com Store, which provides furnishings, electronics, care packages and other services to students.

Supporting Services

Student Advantage (www.studentadvantage.com)

STUDENT ADVANTAGE (STAD)

Market Cap.	Stock Price (52-Week High, Low)
$250 million	$12 ($15-1/4, $7-1/4)

Student Advantage (SA) provides a network of resources for college students. Student Advantage provides access to **e-commerce** and provides discounts through membership. SA helps facilitate **interaction** by providing free e-mail and message boards. The company's **virtual backpack** provides

free e-mail, a personal calendar, storage space online and file sharing. The services are only available with a membership ID, which provides access to the web site as well as discounts nationwide.

Revenue model: Membership costs $20 per year for college students, but it is possible to get the card for free by signing up for an AT&T long distance calling card. The site also uses corporate and university sponsorship for revenue.

E-Socializing

A typical college experience includes certain aspects unrelated to academics:

- Meeting new people.
- Keep in touch with friends at other schools.
- Listening to music.
- Partying on the weekends.

Many companies are trying to recreate this experience through online college campuses. These online college campuses do not provide academics, but instead provide nonacademic features of a college experience through creating communities of learners and providing resources.

College Club (www.collegeclub.com) creates a virtual college campus by providing e-mail, voice mail and communities that link students with similar interests to learners, for a membership fee. On the web site members can find chat rooms, discussion boards and resources on any topic relating to college (except academics)—love, food, music and jobs. Members also get a card that provides them with discounts at certain stores and the ability to create web pages that are hosted on the site for free.

Collegestudent.com (www.collegestudent.com) also provides a network of resources for college learners. It has a feature that provides information about a specific area, local events and other information that allows a learner to personalize their page with the information they want. News, advice, job information, e-mail and contests are also available.

Job Placement

Several companies provide assistance in the job search. They provide anything from simply listing jobs by geographical location to matching employees with potential employers and allowing people to post their resumes.

JobSleuth (www.jobsleuth.com)

INFONAUTICS (INFO)	
Market Cap.	**Stock Price (52-Week High, Low)**
$68 million	$5-27/32 ($10-1/2, $7/8)

JobSleuth is a comprehensive job search site that searches various job banks on the Internet and sends daily e-mails of job information to the user. It is part of Infonautic's reference and research tools available on the Internet.

Revenue model: Consumers can use the service for free; www.jobsleuth.com uses an advertising model for revenue.

Another popular online career search web site is **Monster.com (www.monster.com)**. Monster.com is a leading job placement web site where job seekers can post resumes, engage in chat rooms, seek assistance with resume creation and obtain advice on career management issues. Likewise, employers seeking recruits can search a vast database of resumes efficiently and cost-effectively to find needed human resources.

Tutoring

Homework Help.com (www.homeworkhelp.com)

Homework Help organizes web-based information to help students finish homework. The company is a part of the Super Tutor Learning Company and provides more than 1,000 tutorials for students in a variety of subjects. The tutorials are delivered using animation, audio, video and interactive exercises.

Other resources include:

- **Find a tutor.** Allows the learner to search for live tutors in their area.
- **Educational store.** Buy Super Tutor CD-ROM software for various subjects.
- **Links to other resources.** Provides links to other resources that are education-related such as testprep.com, foreignlanguage.com and curriculum and education resources for parents and teachers.

Revenue source: Charges a subscription price of $9.95 a month, which allows access to all of the available tutorials.

Reference Material and eBooks

NetLibrary (www.netlibrary.com)

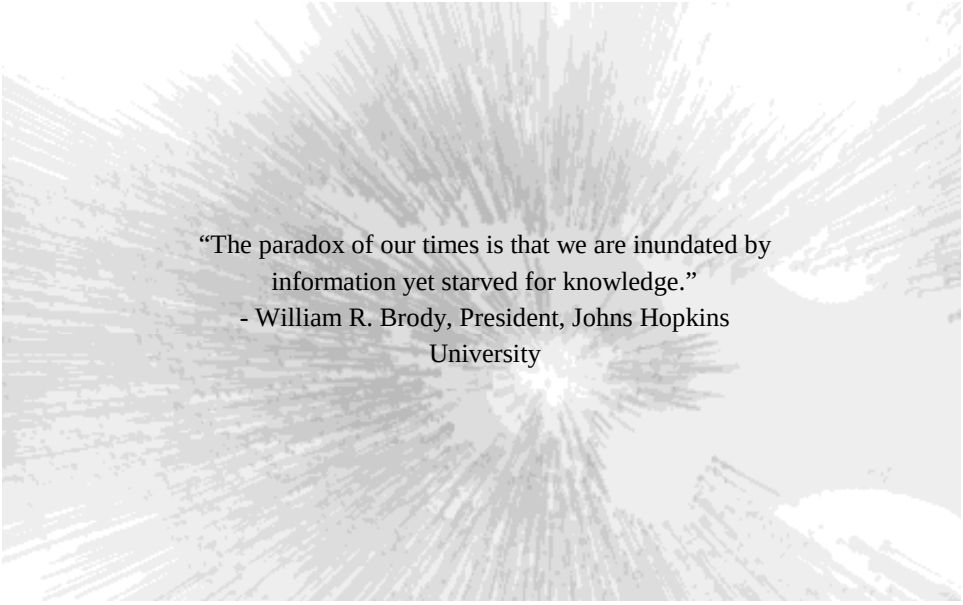
netLibrary is an online library with thousands of scholarly, reference and professional eBooks. eBooks are electronic books that can be read directly from the computer. With a membership to netLibrary, users can search for the book they want by using keywords. Members can customize the netLibrary by creating bookshelves in "My netLibrary." It is also possible to purchase eBooks that can be downloaded to the user's own computer.

WiZeUp.com (www.wizeup.com)

WiZeUp.com provides digital textbooks that learners can purchase and download onto their computers to use in their college classes. The learners can highlight, bookmark and take notes in the margins of their eBooks. The books cost the same as the paper version of the book, but students can sample the first few chapters of the book for free during "drop/add" periods that work in conjunctions with a typical college drop/add period.

CHAPTER 6

BEST OF E-LEARNING



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Death of Classroom-Based Learning (C-Learning)

A cost comparison of e-learning versus c-learning is illustrated by the following fictional illustration. DigiByte, Inc., employs more than 1,000 professionals in more than 50 offices across North America, Europe and the Pacific Rim. Larry Listserv wanted to train 100 IS department managers—two from each office—on Digibyte's recently installed Oracle software. However, Larry is afraid the company controller may balk at the bid:

Enrollment Charges (1)	$240,000
Food and Lodging (2)	25,000
Airfare	80,000
Total	**$345,000**

(1) $2,400 for the week-long training (five days)/person.
(2) $50 per person, per day.

The controller, Terry Tightwad, is sympathetic to Larry's needs to train in a timely fashion. However, he recommends that Larry consider e-learning: "e-learning will allow us to provide our employees with immediate and appropriate training while eliminating the time and expense associated with c-learning."

***e*-benefit: Cost savings for corporate training. Provides an efficient and cost-effective model for corporate training and education.**

He continues: "E-learning companies, for example, offer one year's worth of access to a whole suite of training titles on Oracle for $100,000. The titles would be available not only for the entire year but to our entire department of more than 350 professionals, rather than only the 100 managers you wanted to send off site."

For many reasons, including those made obvious by the illustration above, corporations are quickly turning to e-learning as the most compelling option for learning.

As c-learning companies risk losing their foothold in the training market, several have decided that "if you can't beat 'em, join 'em." Currently, many companies are using an integrated approach to their training by combining web or computer delivery with c-learning.

For example, **ExecuTrain (www.executrain.com)** decided that instead of spending money to develop its own e-learning technology, it would partner with **LearnLinc Corporation**, formerly Interactive Learning International Corporation (ILINC) **(www.ilinc.com)**, a vendor that has SCEL technology. The partnership leverages ExecuTrain's leading content and ILINC's technology expertise into a training solution that corporations can use. LearnLinc's software will allow ExecuTrain to recreate a classroom training experience via the Internet. The partnership will allow ExecuTrain to reach more learners than it can with only c-learning by using the Internet to increase class size.

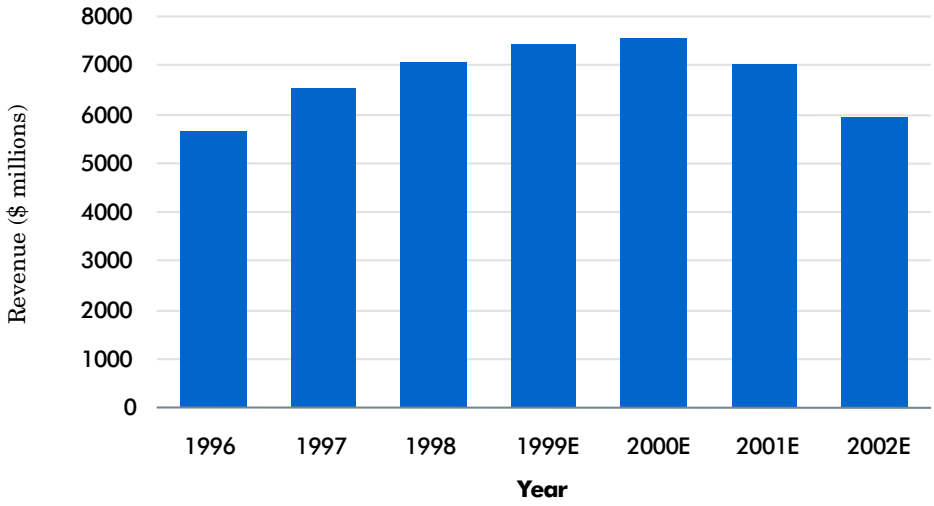
LearnLinc has been providing SCEL to corporate customers since 1994 through the company's LearnLinc products. E-learning classes use LearnLinc I-Net and LearnLinc LAN/WAN, which are deployed over the Internet and LAN/WAN environments respectively. Learners use the SCEL features discussed above like hand-raising, responding to multiple choice questions and engaging in group discussions.

The speedy migration to e-learning is driven by many factors, including, but not limited to:

- The skyrocketing cost of classroom-based learning (c-learning). Many corporations are faced with resource constraints that prevent them from sending everyone to a classroom for learning. They cannot spare the resources for c-learning, including, but not limited to, the opportunity cost of employee time, the cost of transporting employees or instructors and any facilities costs.
- The rising awareness that c-learning is not always effective, particularly as measured by knowledge retention.
- The emerging importance of "intellectual capital" and the need to constantly replenish it.

Revenue from traditional c-learning training has been rising, but it is expected to peak in 2000 and then decline, being replaced by technology-delivered forms of training.

U.S. IT TRAINING AND EDUCATION, INSTRUCTOR-LED TRAINING REVENUE, 1996-2002E



Source: IDC.

The discussion above supports our weakening enthusiasm for the sustainable profitability for c-learning companies like Learning Tree International, for example. C-learning companies share more foibles, which we believe shorten their life span.

LEARNING TREE INTERNATIONAL (LTRE)

Market Cap.	Stock Price (52-Week High, Low)
$287 million	$13-1/6 ($15-1/8, $6)

Price Sensitivity

Most of the c-learning companies offer content that is product-centric, such as training on Windows 95 or NT 4.0. Because the training "product" is product-centric—versus customer-centric—c-learning companies cannot differentiate their products from other companies' products.

The buying decision will be based therefore on:

- **Accessibility** to a training site.
- **Availability** on a desired date.
- **Price**, particularly in those markets where the choices for dates and times are plentiful.

Competing on price puts exorbitant margin pressure on the c-learning companies. We believe pricing pressure explains why the operating margins for Learning Tree and New Horizons hover, on average, near 10%.

Further exacerbating an already bad situation is the fact that customers who choose on price, availability or accessibility feel no brand loyalty and will not necessarily return to a vendor based on a positive experience. This fickleness forces vendors to spend lots of money regularly marketing to the **same** customers. The battle is endless. The only way to ensure that the next class is full is to persist in marketing (telemarketing or direct mail) daily.

If a company hopes to create value for shareholders and wants to continue operating in a "profit zone," (Slywotzsky and Morrison, 1998) it must reinvent its business design. Just as software products on which learning companies deliver instruction become technologically obsolete, business designs become economically obsolete. Because of a narrow focus on market share, c-learning companies have failed to recognize that the land was shifting beneath them—the profitability was eroding.

"One of the greatest lost opportunities in business occurs when companies that possess phenomenal product knowledge do not employ that knowledge making the transition from product leadership to solutions leadership."

All learning companies, in our view, will come under severe pressure to demonstrate their value within a new paradigm—away from inputs (classes and hours), toward outputs (performance at individual and organizational levels). We believe customers are tired of paying big bucks for generic learning that may not serve the needs of their particular workplace. What is the learner's impact on cash flow, capacity utilization, employee turnover, customer loyalty, profitability and economic value added?

***e*-benefit: Ability to measure the effectiveness of program. E-learning software empowers administrators to track performance and measure ROI. In addition, monitoring usage by learners is simpler; i.e., the number of downloads per user can be measured. This helps training managers evaluate cost effectiveness and provides assistance with license negotiations based on estimated usage.**

We believe the most successful companies will be those that can address the idiosyncrasies of each worker's work environment. What does the customer need to perform productively on task? We believe learning should be customer-centric, unlike current learning, which is product-centric.

Learning companies should build engines that correlate the goals of each customer with the product knowledge needed to perform productively. For example, in contrast to product-centric content, we believe the new learning companies will exercise **backward mapping** and build learning by looking at the workplace context of the customer to determine the desirable integration of the knowledge. **No more generic, commoditized learning content. Focus on the new "profit zone"—customized learning.**

In addition, the type of selling needed to cultivate the new profit zone is markedly different from the type of selling with legacy business of daily seminars. Custom learning requires more "solutions selling" and less "product selling."

In our view, solutions selling requires a consultative approach that demands a deeper understanding of the client, the systems to evaluate and measure and the need to be patient because of a much lengthier sales cycle. We believe it may be difficult for the current sales teams of most c-learning companies to display that patience when their culture has been a myopic, daily battle to fill up the seats at tomorrow's seminar.

Diseconomies

Most c-learning companies deliver training in centers which they own or lease or, alternatively, in hotel space which they rent. As a result of the high cost of instruction (people and facilities), vendors do not want to offer a class unless they believe attendance will be sufficient for the company to generate a profit. Because the primary costs for each course event does not increase significantly as additional learners attend, the objective is for the vendor to achieve a high average number of learners per course event up to a limit designed to preserve the quality of each course event.

Vendors are forced to shuffle the deck on a daily basis, for example, by combining under-subscribed events into one course event or adding an assistant instructor to increase the maximum number of students in a course event. Oftentimes—to the chagrin of customers—classes are cancelled with little notice. **The ratio of cost of instruction/revenue puts tremendous stress on the business model as the vendors strive first to achieve breakeven and then to accelerate up the profitability curve.**

Economies of scale have often served to drive consolidation of industries. For example:

- The **automobile industry** consolidated because the capital needed to build manufacturing facilities was too costly to maintain dozens of automobile plants. Economies could be gained around fewer sites.

- The **drug industry** consolidated because the capital needed to maintain a robust R&D effort was too exorbitant and left no choice but for consolidation.

Conversely, if we look at the business models of c-learning, as much as 50% of revenue is spent on cost of instruction, which includes facilities and instructors. C-learning models cannot scrimp on cost of instruction without **increasing class size** and likely **lowering the quality** of instruction. Therefore, **there are no economies available on the leading cost item**.

We believe the inability to gain meaningful economies of scale by scaling the business is an underlying explanation for the fragmented state of the market. The key to capitalizing on economies of scale is to gain more leverage on the costs of instruction—something we described above as near impossible.

The Virtual Classroom

The only way to leverage the cost of instruction in a learning event is to use a classroom with no walls or one of infinite size. Obviously, this cannot occur in a physical setting. It can, however, occur in a virtual setting. Therefore, we point above to our earlier discussion of SCEL.

Another vendor that offers SCEL is **Avalon Information Technologies (www.atlantis.com/~avalon/)**. Avalon developed BRIGHTLight, a multimedia distance learning system that combines remote c-learning delivery with integrated performance support and information management features. BRIGHTLight is designed to allow up to 50 users online within a virtual classroom with an learning advisor. The software utilizes existing corporate infrastructure and operates over a TCP/IP communication line, such as a LAN, WAN, intranet or the Internet. Avalon recently began shipment of BRIGHTLight Version 2.0, which will integrate Microsoft's NetMeeting software to allow users to share Windows applications.

This Is Not Your Father's Classroom

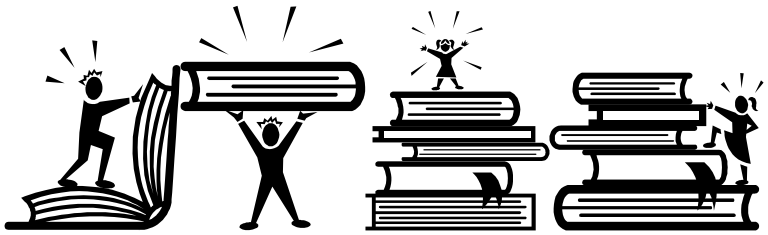
At this early stage in the evolution of e-learning, the focus has been on:

- **The administration of e-learning** and the ease of preparing, deploying and managing e-learning.
- **The cost-savings of e-learning** when consideration is given to the "bricks and mortar" option.
- **The market opportunity of e-learning** when universities consider all of the students that they can reach via the Internet.

In time, however, the focus will shift to the actual learning experience, in our opinion. The learning experience, in our opinion, available from e-learning is generally, in our view, superior to that available in c-learning. The traditional classroom is about learning around "teaching to the norm." But there is no

one named Norm. No one in the class is truly the norm, and therefore no one stands to benefit from instructional models, which are about learning for Norm.

The Internet creates a new education model where the learner is at the center.



There are assertions that streaming video and audio were the last weapons in the arsenal of the CBT warriors as they tried to conquer the landscape of learning. We disagree. There is more to learning online than adding some video and audio. **This is not about creating a classroom-based simulation; this is about creating a better learning experience.**

We think the compelling question is: What is so great about the classroom that we are trying to mimic it electronically? **Why are people looking at the future of learning by peering into the past? Why are the SCEL vendors necessarily touting the "virtual classroom" as utopia in learning? The classroom served its purpose and will continue to serve its purpose; however, the beauty of e-learning is that it allows us to rethink the classroom.**

***e*-benefit: Manageable structure. The electronic infrastructure supports managed (and measurable) interaction between advisors and learners.**

Think about how impersonal most lectures were in college. How many of us went through an entire semester never interacting with the professor? **At least with technology, that professor has the capacity to reach more people with whom he will never personally interact.** (Please refer to "Distance Education: A Means to an End, No More, No Less" below for more information on this topic.)

Technology should truly be viewed as an enabler for new ways of learning that were simply not scaleable before. Roger Schank of **Cognitive Arts** (**www.cognitivearts.com**) has studied the virtues of technology-mediated learning for years. He believes technology will finally empower individuals to learn in ways that he believes are significantly more effective than traditional learning.

The HOTS for E-Learning

CognitiveArts

Basic research on cognitive development would support our belief that e-learning can be the best model for learning. Cognitive Arts' pedagogy combines computer science with cognitive science. Its approach to e-learning combines quality content with an effective delivery method based on a pedagogical platform for learning that came out of research done at Northwestern University. The pedagogy emphasizes goal-based learning. Using a learn-by-doing philosophy, Cognitive Arts designs products that have goal-based scenarios where users learn from their mistakes to master a concept.

Technology has the potential to empower individuals to learn in ways that are significantly more effective than traditional learning techniques.

First and foremost, e-learning can be student-centered. Then, within that context, e-learning:

- **Allows for multisensory stimulation via video, audio, animation and more.**
- **Enables constructive learning or the ability to approach mastery of a concept by building on one's own knowledge base and selecting additional building blocks based on one's own learning proclivities.**
- **Can proceed from concrete experiences toward understanding abstract theory. For example, this is why well-thought-out adult learning includes simulations with real-world problems (instruction for children includes interaction with blocks and other manipulatives).**
- **Empowers learners to learn by practicing as the environment enables learners to practice repeatedly, often times by accessing a rich bank of problems, for example.**
- **Facilitates collaborative learning where learners can think critically, analyze, communicate, make logical arguments and work cooperatively in groups.**

This exploratory and inquiry-driven learning usually results in a hyperlearning path, rather than a linear progression, that can develop improved higher-order thinking skills (HOTS).

***e*-benefit: Hyperlearning. As contrasted with static text, e-learning has the capacity to link with other resources (simulations, other content, study groups, etc.), which can enhance the learning experience and avoid the linear learning dictated by textbooks. The self-directed nature of e-learning allows hyperlearning.**

www.smginc.com

Strategic Management Group is another company that offers simulation-based learning and therefore creates a more effective learning experience. SMG provides training in the areas of finance, strategy, marketing, sales, project management and leadership.

SMG's e-learning solution, SMGnet, provides an interactive learning environment where the content is presented in small chunks of 15 to 20 minutes, allowing the content to be cognitively processed more effectively. In addition to its library of content, SMG will customize e-learning courses for clients.

An Experience to Remember

The e-learning experience from the e-content of Cognitive Arts or SMG should engender brand loyalty. Those courses should bring learners back for more, if the engagement was an experience to remember.

Banc of America Securities

We believe the notion of creating a memorable and effective learning experience echoes the compelling logic of Pine and Gilmore's book, *The Experience Economy*: "Entertainment is only one aspect of an experience. Rather, companies stage an experience whenever they engage customers, connecting with them in a personal, memorable way" (pg.3).

Students like their education on many different levels. For some, fond memories are based on the experiences of those years as much as it is based on the core learning:

- Some have fond memories of their teachers—their warmth, humor and wisdom.
- Some remember the settings—the beauty and majesty of the campuses.
- For others, it could have been the relationships—friends, partners or classmates.
- It could have been the palpable sense of intellectual growth that many felt when long after they left many lectures?
- Or, it could have been the overwhelming weight of knowledge in the library, the sense of accomplishment from a good grade or a great score on a test.
- For many, it could be remembering the smell of ivy, the feel of a book or the sounds of a specific classroom building.

It is likely that all of the above are contributing factors to the memories of one's education. In fact, many people enjoy these memories so much that they return to school for more and more. But that is the point—the learning experience, in our view, often drives people to return to school as much as any specific career or educational objective.

"Experiences are inherently personal. They actually occur within any individual who has been engaged on an emotional, physical, intellectual or even spiritual level. The result? No two people can have the same experience—period. Each experience derives from the interaction between the staged event and the individual's prior state of mind and being" (*The Experience Economy*).

How can e-learning companies engender similar feelings of loyalty so that their learners come back to them again and again?

The Caliber Learning Experience

CALIBER LEARNING (CLBR)

Market Cap.	Stock Price (52-Week High, Low)
$36 million	$36 ($7-1/2, $1-7/8)

We believe the Caliber Learning Center may emerge as an appealing learning experience and an alternative to the inefficiencies of classroom learning and the loneliness of desktop learning.

Caliber campuses feature professional classrooms, educational facilitators, state-of-the-art satellite transmission, video conferencing, wide-area network computing and Internet technologies. These features give working adults access to live expert instruction, real-time, two-way interactivity with the instructor and the ability to collaborate with other course participants.

"…seeing a film at the theatre with an audience, large screen, and stereophonic sound will immerse a person in the experience far more than if we were watching the same film at home on video" (p. 31 of *The Experience Economy*).

In our visit to a Caliber Wharton class, students were able to e-mail the professor and have their questions answered real time as well as e-mail other students in different locations. All students have access to the course materials, lecture notes and reference materials via their desktop computers. Most impressive is the sophisticated video conferencing capability that allows each classroom to participate in the discussion while the other classrooms around the country can hear and see their fellow students.

We believe Caliber's differentiable advantage is its network of Learning Centers. Through its network of high-tech facilities in cities around the world, Caliber can deliver live lectures from celebrity professors to classrooms of students in a very interactive manner. We believe many learners will be drawn to Caliber and the appeal of extricating oneself from the office to join a group of fellow professionals in a physical classroom.

The innovation behind Caliber is cutting-edge, albeit the stock suggests it was bleeding-edge. For more information on Caliber please see pages 187-191.

"That's also how the Experience Economy will grow, as companies tough out what economist Joseph Schumpeter termed the 'gales of creative destruction' that comprise business innovation" (*The Experience Economy*).

Distance Education: A Means to an End, No More, No Less

(Reprinted with permission of author. Originally printed in *Chronicle of Higher Education*, August 6, 1999)

By DENNIS A. TRINKLE

The University of Phoenix and other purveyors of distance learning have come under harsh criticism from a variety of educational quarters. Courses taken online have been excoriated as impersonal, superficial, misdirected, even potentially depressing and dehumanizing. A 1999 report on distance education from the National Education Association, for example, says online courses may disrupt the student-and-faculty interaction that creates a "learning community."

Unfortunately, much of the criticism misrepresents or ignores the realities of American higher education today. Let's look at the paths of three actual college students who were part of a 1999 survey conducted by the American Association for History and Computing. (Their names here, however, are fictional.)

Marianne Suarez, a freshman last year at the University of Cincinnati, was considering a major in history and education. To test the waters, she took a Western-civilization survey course. Twice each week she attended class with 250 other students in a cavernous room on the first floor of McMicken Hall. Visitors to the campus might recognize it as the classroom used in the Jodie Foster film, *Little Man Tate*.

For Suarez, the classroom was the setting for a series of staged performances. With the large enrollment, the instructor could do little more than deliver well-prepared lectures and hope that the students would be inspired to pursue course themes outside of class. Three teaching assistants were on hand to answer questions after the lectures, but all of the talk in academe today about student-centered

teaching, active learning and providing a "guide on the side" was silenced by the reality of all those students packed into a lecture hall.

Far across the country and several worlds away, Ian McFadden, also a first-year college student, was typing excitedly at his computer at home in Denver. Unlike Suarez, who was 18 last year and fresh from high school, McFadden was what universities call a "nontraditional" student. A lack of financial resources had compelled him to serve in the U.S. Army for six years after high school. His service complete, he was working last year as a delivery-truck driver and decided to pursue his B.A. through the distance-learning programs of the University of Phoenix.

Because Phoenix's courses are offered on a rolling basis, rather than by the semester, McFadden was able to take one course at a time; he hoped to take five or six courses last year. He received his assignments, most of his course materials and his evaluation online, and he conferred with his instructors often, in online conferences and through e-mail.

At the same time, back in the Midwest, Paul Toshido sat in a classroom on the campus of DePauw University, surrounded by 30 other students. Like Suarez, he was taking an introductory history survey, but like McFadden, he was able to ask his instructor questions through e-mail. Toshido's course offered lectures each week, as well as a wide variety of in-class and online discussions, debates and role-playing.

Those three students provide a glimpse of the widely divergent experiences of American college and university students today, and highlight the changing face of higher education.

The University of Phoenix now enrolls more than 56,000 students each year, with 7,000 students taking their courses exclusively online. According to a report by the Pew Higher Education Roundtable, by 2000, nontraditional students like McFadden will make up at least 60% of all college students. For them, distance learning will provide flexibility in terms of when, where and how many courses to take. Increased competition among educational institutions offering such courses will probably also reduce the costs that nontraditional students will face.

For such students, there is clear evidence that distance education can be as successful as classroom-based instruction, if not more so. As Greg Kearsley, a professor of instructional technology and distance education, writes in his *A Guide to Online Education* (http://gwis.circ.gwu.edu/~etl/online.html), those students who take online courses "typically find that they are drawn into the subject matter of the class more deeply than in a traditional course because of the discussions they get involved in." That may well be because the instructor does not monopolize attention in an online environment. "There is no counterpart to standing at the front of the classroom pontificating to a captured audience until the bell rings!" Kearsley says. Anyone who "lectures" to an online group will quickly find participants tuning out and turning off the computer.

Kearsley also suggests that distance education minimizes the prejudice that often arises in face-to-face settings. Unless someone deliberately reveals personal information, participants have no idea about the age, gender, ethnic background or physical characteristics of others online. The discussions that ensue are about as free of sociocultural bias as possible. Distance education, in short, can be more stimulating and encourage more critical reasoning than the traditional large lecture class, because it allows the kind of interaction that takes place most fully in small-group settings.

In their recent book, *Building a Web-Based Education System,* Colin McCormack and David Jones—professors of information and computing systems—point to hundreds of anecdotal case studies and scholarly surveys suggesting that distance education is more successful than the large survey courses at many public colleges and universities. For example, the sociologist Jerald G. Schutte, of

California State University at Northridge, reports (http://www.csun.edu/sociology/virexp.htm) that he randomly divided students in a social statistics course into two groups, one that was taught in a traditional classroom and the other entirely online: Test scores on both the midterm and the final examinations were an average of 20% higher for those in the online course. Schutte also notes that students in distance education courses say they have more peer contact with others in the class, spend more time on class work, understand the material better and enjoy it more.

Another study, conducted by the Sloan Center for Asynchronous Learning Environments at the University of Illinois at Urbana-Champaign (http://www.aln.org/alnweb/journal/vol2_issue2/arvan2.htm), reminds readers, on the other hand, that distance learning does not necessarily produce more contact with professors—or better outcomes. The online course can be as abused as the traditional survey class, and the center warns against simply using teaching assistants and adjunct professors to teach massive online classes. Instead, it suggests institutions should tap the potential of the online environment to foster small-group interaction.

Moreover, we should remember that distance learning is not the only path to good education. Just as many studies praise the benefits of online courses, an equally wide array suggests that small classes with flexible, frequent and face-to-face interaction among students and an instructor are optimum when financially and practically possible. That is the lesson of several decades of research on small class size in pre-collegiate education.

Paul Toshido's experience at DePauw raises another issue. A study conducted in 1998 by the American Association for History and Computing (http://www.mcel.pacificu.edu/JAHC/JAHCII1/ARTICLESII1/Trinkle/Trinkleindex.html) suggests that the most effective use of instructional technology is being made in small-class settings, where technology is being adopted not just to promote efficiency or ameliorate crowded classrooms, but to be integrated into classes that also provide face-to-face interaction.

Educators must remember that, for most students, such instruction is simply not an option. Serious shortcomings in today's American educational system provide the other side of the equation in explaining the appeal of electronic universities. Marianne Suarez's experience in her survey course, sitting among hundreds of classmates, is shared by many other students, particularly those at large public institutions. The reality is that, as universities and colleges have become increasingly imbued with commercial philosophies, administrators have shuffled students into ever larger classes, often taught by adjuncts and mediated by stables of graduate-student teaching assistants.

At the same time, administrators also sometimes mistakenly assume that distance education can solve all of higher education's ills. The recent survey by the History –and Computing Association quotes many professors who are alarmed by the rush to technology: A majority -- 65 per cent -- of the almost 500 professors who responded to the survey called their institutions' technology policies misguided or insufficient. Charges that administrators were forcing the adoption of technology so rapidly that instructors could not decide how to use it most effectively echoed throughout the survey—as did suggestions that an increase in full-time professors would produce as much good teaching as new computer labs would.

It is clear, however, that administrators and universities are pressing ahead with a vision of computer technology as the golden solution to challenges ranging from rising costs to calls for greater accountability. Indeed, the success of the University of Phoenix and other virtual universities is not only drawing attention to the problems of access and instruction in higher education, but, even more, that success is seen as a market threat. Institutions are not increasing tenure-track faculty positions,

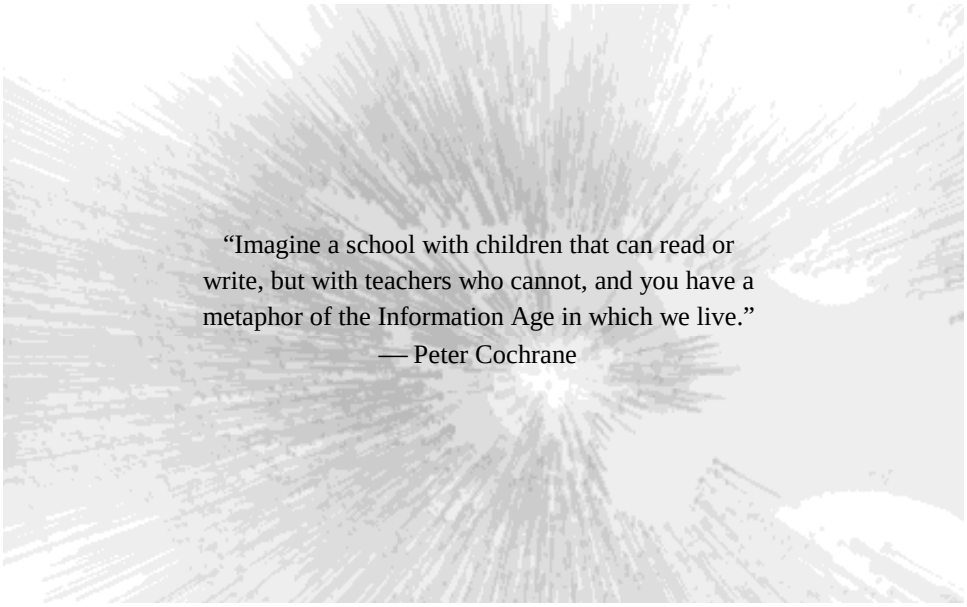
reducing course sizes, or emphasizing students' needs. But they are launching their own online courses. Across the country, colleges and universities are rushing to stake out their territory on the electronic frontier.

As that happens, supporters of distance education—including administrators who see it as a cheap alternative to hiring more faculty members—need to remember that not all students are best served by electronic instruction. But critics of distance education must also keep in mind that many non-traditional students will undeniably benefit from its expansion. So, too, will the Marianne Suarezes, lost among their classmates. The reality of distance learning is complex, and we must give it the measured consideration it demands.

Dennis A. Trinkle is an assistant professor of history at DePauw University and executive director of the American Association for History and Computing.

CHAPTER 7

O!K-12



"Imagine a school with children that can read or write, but with teachers who cannot, and you have a metaphor of the Information Age in which we live."
— Peter Cochrane

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Netting the Big Kahuna

The most talked about sector of e-learning is the K-12 market. Highly analyzed, discussed, debated and dissected. Why? It is the biggest market ($350 billion in U.S.), it is the most controversial (publicly funded institutions that serve children), and it is the most criticized.

As exciting as the prospect is for capturing the e-learning market of K-12, we are not so quick to suggest the immediacy of that opportunity. We believe the opportunity for e-learning is far behind the opportunities in corporate education or higher education.

We hold that belief because of two primary reasons: (1) the IT infrastructure of public schools is several years behind that of corporate America; and (2) the barriers to productively adopting technology in K-12 are more formidable than in the other submarkets we have examined.

The initial challenge to reason number one would likely be based on a plethora of data that purportedly demonstrate the increasing presence of technology in the classroom.

- During the last year, the number of computers in American schools increased 13% to create an installed base of 6 million computers, according to Quality Education Data.
- In three years, from the fall of 1994 to the fall of 1997, the percentage of U.S. public schools with Internet access increased from 35% to 78%, according to National Center for Education Statistics.

K-12 telecommunication expenditures are expected to reach $730 million by 2001-2002, according to the IDC.

The data is misleading. In spite of an increasing technology quotient in schools, the influence of technology on teaching and learning is much less noticeable. Part of the problem is that computers are not in the core of the learning enterprise. **For example, while almost 80% of schools have access to the Internet, only 42% of classrooms have access to the Internet, according to the IDC.**

We believe the core issue with the lack of technology at the core of the learning enterprise is that the captain of the ship, the teacher, has little or no ownership in the technological tools. According to a recent article in the Education Week:

- Out of every 10 teachers in this country, fewer than two are serious (several times per week) users of computers.
- Three to four are occasional users (monthly).
- Four to five never use the technology.

We find the above data astounding.

What explains the problem and, more importantly, what does it augur for e-learning companies pursuing the K-12 market?

One of the most frequently cited excuses is that "teachers are technophobes." Yet, as usual, no one has ever conducted a study to definitively disprove or prove that assertion. However, we found one interesting data point: of the 10 teachers cited above, 7 have computers at home and regularly use them for a variety of tasks. **Perhaps they're "closet" techies?**

We believe the reasons for the lack of meaningful integration of computers in the K-12 classroom are more troubling than the specious claim of teachers being technophobes. We believe teachers do not have the proper time, training, resources and incentives to incorporate technology in the classroom.

Teachers in our nation's K-12 schools work an average of 45 hours per week, with 33 of those hours spent at school. Of the remaining 12 hours, teachers spend slightly more than three on activities involving learners and almost nine on other teaching-related activities, according to Quality Education Data.

Systemic Reform

If we accept the premise that integration of technology is a form of school reform, then we believe the failure of technology to be effective is the lack of **systemic reform**.

Dr. Marshall Smith, currently the Deputy Secretary of Education with the Department of Education in Washington, wrote the seminal work on systemic reform. He essentially explained that many reforms fail because they neglect to align all of the key components of delivering a K-12 education.

Systemic Reform's key components include, but are not limited to:

Component of Reform	Explanation
Financial Resources	Funding must be earmarked for the purchase and support of the proper items.
Teacher Training	Teachers must not only understand "how" to integrate the tools, but also "why" it is superior to existing teaching tools.
Assessment	An evaluation methodology must exist to verify the outputs from the reform on a regular basis.
Ongoing Support	Teachers must receive the support needed to ensure proper implementation.
Curricula Frameworks	The reform must be aligned with the instruction that is driving the class and therefore the teacher's focus.
Facilities	The building and classrooms must be prepared properly.

These components compose the system of education, and each must be aligned for reform to flourish. Without delving too far into policy talk, the important takeaway is that there must be wholesale support for any meaningful school reform.

The Litter of Past Failures

Companies with technology-based instructional tools have, at best, struggled in the K-12 market. The list includes Jostens Learning and TRO Learning. The failures are not necessarily highly correlated with product quality. **Yet, the race does not always go to the swiftest.**

Jostens and TRO failed, in our view, because the vendors tried to alter the learning landscape of the classroom. Both companies have instructional systems that challenged the cornerstones of instructional tradition and tried to impose an integrated learning product that is unwieldy, at best, and threatening, at worst, to teachers.

"Teachers seldom are consulted on which technologies make the most sense for them to use with their learners, what machines and software are both sensible and reliable for their classrooms. Instead, their classrooms disappear in the equation. Fully stocked labs with donated or purchased equipment appear. Machines pop up on teachers' desks. Administrators exhort teachers to take brand-new courses on technology that the district just made available." (*Education Week*, August 4, 1999).

A Rare Technology-Based Success

One of the few technology-based products that have succeeded in the classroom are those sold by Advantage Learning Systems. Yet, Advantage Learning Systems has succeeded in building a thriving business without tackling the Rubic's Cube of systemic reform. Instead, Advantage Learning Systems (Advantage) has succeeded by capturing the fancy of the most important change agent in the school system: teachers.

ADVANTAGE LEARNING SYSTEM (ALSI)

Market Cap.	Stock Price (High, Low)
$850 million	$25 ($43, $11-7/8)

Advantage's products are built to support the existing teaching styles of teachers by facilitating information gathering and motivating learners. More importantly, the teachers were engaged in the buying process, unlike that witnessed with computers.

Advantage recognized that teachers lacked the information they needed to productively work with individual learners. To address this issue, Advantage built a simple-to-use but compelling tool that facilitates reading instruction for teachers and inspires reading practice for young children. The tool is *Accelerated Reader,* and it forms the backbone of an expanding suite of instructional tools for K-12 public schools.

Teachers lack the information they need to productively work with individual learners.

In addition, because of the data collection capabilities of **Advantage**'s products, **Advantage** is readily identified as a leading provider of learning information systems. Learning information systems provide educators benefits similar to those management-information systems provide to business managers. Learning information systems are of paramount importance, in our view, for public schools, not only as teachers hope to manage the individual learning needs of each learner, but also as schools strive to satisfy the increasing demands for accountability by politicians, parents and policymakers. For example, more than 40 states use norm-referenced assessment tools to measure learner performance in core curriculum areas. Without information, however, accountability is merely more political hyperbole.

Therefore, we believe teachers and schools are eager to implement products like *Accelerated Reader* because of the accountability it provides the classroom with its immediate results and useful reports.

The company's learning information systems consist of computer software and related training designed to provide information to manage instruction. These systems improve learner academic performance by increasing the quality, quantity and timeliness of performance data available to educators, and by facilitating increased learner practice of essential skills.

(Please refer to pages 147-164 for a detailed discussion of Advantage Learning Systems.)

Stakeholders' thirst for information coupled with their perpetual struggle to motivate children to read has carried Advantage's products into more than 45,000 schools in North America.

Obviously, we are less than bullish regarding the **immediate** prospects for e-learning in K-12. However, e-learning will emerge as a force in K-12 someday, in our opinion. When it does, we believe **National Computer Systems (NCS)** is well positioned to be an e-learning force. Our positive view regarding its K-12 prospects are based on five primary reasons:

Brand Equity

- Although the school market is difficult to develop, once a company or brand is established with school buyers, the inertia of school buying habits is the vendor's best friend. NCS has a large installed base of users (35,000 schools), which will provide traction for the company when it launches its e-learning campaign. Additionally, NCS's integral role in the publication, delivery and evaluation of high-stakes testing (Iowa Test of Basic Skills, NAEP, Stanford Achievement Test, Metropolitan Achievement Test and the ACT) will support its K-12 market growth.

Mature Suite of Services

- NCS already offers an integrated IT product and services menu to K-12, including MIS project management, training, consulting, network design and technology planning. NCS's core strength is information services, including the collection, management and interpretation of data. Therefore, NCS's e-learning solution will build on its core competency as the company satiates the hunger of K-12—a market starved for information management.

Strong Management Team

- Russ Gullotti, et al, have already demonstrated a strong ability to integrate acquisitions as well as launch new product lines.

Compelling Cache of Content

- NCS already offers a broad array of products that address multiple areas, including grades, attendance, scheduling, financial/accounting, student records, instructional management, teacher training and teacher desktop administration.

Early E-Evidence

- NCS recently introduced ParentCONNECTxp, an Internet-based program that integrates parents in their child's daily schooling. With an Internet connection and a browser, parents will have access to

grades, attendance, assignments, discipline and the teacher. Parents can be notified by e-mail of absences, tardiness, missing assignments or discipline incidents.

- NCS purchased K-12 content/curriculum provider NovaNet. The NovaNET system offers more than 10,000 hours of fully interactive, self-paced content for skills in a variety of subject areas, including reading, writing and mathematics, ESL (English as a Second Language), advanced placement and test preparation. The curriculum is aligned with numerous state and national standards and assessments. NovaNET is delivered to schools via a nationwide intranet and is currently used by students in more than 800 schools and community colleges.
- NCS also introduced WeHelpKids.com, a site that will enable parents, teachers and learners to enter results from statewide assessment tests into an electronic report card. This report card will help generate a list of relevant teaching and learning aids tailored to the learner's skill level. WeHelpKids.com will partner with and link to SmarterKids.com's SmartPicks system.

The number of schools with five or more classrooms with Internet access increased from 25% of all schools in the fall of 1996 to 43% of all schools in the fall of 1997, according to the National Center for Education Statistics.

Another company that could be successful in K-12 is **Classroom Connect** (**www.classroomconnect.com**). Its offering is supplemental, yet challenging and computer-based nature of its offering.

Classroom Connect helps teachers effectively use the Internet in the classroom. There are two parts to Classroom Connect. The first, Connected Teacher, provides a network of content and resources for K-12 teachers. There is interaction content from message boards, e-mail and discussion lists. The content is aggregated from various teachers and also developed by Classroom Connect.

The second component is The Quests. The Quests are online, interactive trips through different countries. Classroom Connect sends a team of scientist and educators on an expedition, and subscribers participate in the expedition virtually. A subscription to the expedition allows the teacher and learners to follow the expedition and interact with the team by asking questions or helping with research objectives. Classroom Connect provides curriculum resources to help augment the Quest program.

Revenue model: There are a variety of revenue models. Many of the resources and services are free, including a subscription charge of $95 (for a classroom subscription) to $549 (for a 10-classroom subscription). Classroom Connect also sells related products and has an e-commerce section of its web site dedicated to the education software and products.

Classroom Connect will offer training by offering courses that will provide continuing education. Teachers will be able to earn continuing education credits towards certification for teaching and degrees through an affiliation with Pepperdine University.

The Future of E-Learning in K-12

Because of the issues stated above, we believe the **future of e-learning in K-12** is somewhat unclear at this juncture. We believe in the theory of systemic reform, and, therefore, until **all of the ducks are in a row**, e-learning's future will remain somewhat uncertain.

In addition, the following barriers to growth must be addressed:

- **Access.** The Internet is not readily available in every classroom, and therefore it can be challenging to integrate it into the curriculum when teachers and learners do not have sufficient access to it.
- **Hardware.** The newest technologies are expensive, and it is difficult for schools to be keep up with the constantly changing technologies.

At 14:1, the learner-to-computer ratio for "top-of-the-line" machines is twice as high as the national average learner-to-computer ratio for less-sophisticated machines, according to Market Data Retrieval.

- **Teacher training.** This is being remedied through more professional development in technology. The Department of Education allocated $75 million in fiscal 1999 for technology training.

In our view, while technology companies and government agencies are pouring substantial resources into teacher training, the perceived necessity for teacher technology literacy is still lacking:

- Members of the public most often cite job readiness as a primary factor in deciding whether computers and technology are effective in education, according to the Milken Exchange on Technology.
- More than 50% of schools still allow technology professional development to be optional, according to Education Testing Service.
- Of the states that have standards for teacher technology preparation, only two (North Carolina and Vermont) require teaching candidates to have a portfolio that shows they can use technology, according to *Education Week*.

macromedia®

WINSTAR for EDUCATION

www.trainingcafe.com

The "Training Café" is an interactive multimedia tool used to educate teachers on using computers and the Internet. It was specifically created for U.S. Schools that lack Internet training capabilities for teachers. This program offers 17 different modules, each an hour long that users can take at their own pace. The "Training Café" is basically designed to maximize the learning process by providing users with real-time interaction, guided practice, personalized assessment and tracking. This medium for educational exchange will help to make broadband communications, such as the Internet, relevant and truly valuable to U.S. Schools. (Source: *Hellerreports*, Article # 3454, June 22, 1999.)

The K-12 Portal Play

Given the challenge of getting the Internet into the classroom, the more content and services offered by companies, the better. Many K-12 companies are attempting to target the home and schools markets simultaneously using portals. Portals provide an aggregation of content and resources, in a particular area, for "one stop shopping" on the Web.

Family Education Network (www.familyeducation.com)

Family Education Network (FEN) is a leading portal in K-12. It provides a range of services, features and content. FEN has finally cast in bytes an idea that many have probably ruminated about for years, but few had the clarity to conceptualize the idea, let alone the wherewithal to execute it. FEN has cast a web wide enough to snag the key parties to a child's learning universe: the child, the parents, the school and appropriate vendors.

- **Content** from local schools regarding homework, schedules and other school information.
- **Content** from other areas in a range of topics related to parenting and school.
- **Interaction** with other parents in chat rooms.
- **Access** to experts on the various topics.
- **E-commerce** through shops that sell educational materials as well as toys.
- **Additional services** including a newsletter that is sent via e-mail.

Revenue model: The service is free to families. The company's revenue is produced from an advertising and sponsorship model. For example, AOL paid $500,000 for a one-year sponsorship on the web site.

Partnering for success. FEN's relationships with the **National PTA, National School Board Associations, AOL and Harcourt General** are helping it to become the leading family education portal.

Steven E-Learning, the Parent

As a parent of a school-aged child, Steven wants some advice about getting Jon Jr. ready for school. He goes to the Family Education Network and clicks on the "Back to School" link where he then finds the relevant information to Steven Jr.'s age group. Steven can then go directly to Steven Jr's. school page to find out exactly what his teacher expects him to have on the first day of school.

Throughout the year, Steven can track his son's progress at school through the local school connection and also use the other FEN resources like the shop to buy education toys for his kids or send questions to experts about school safety or get suggestions about dinner time conversation. The information is organized by age group, so as Steven Jr. grows up, Steven can get advice along the way so he knows how to deal with everything from the terrible twos through going off to college.

EDCO

www.infonautics.com

www.infolearning.com

In July 1999, Bell & Howell and Infonautics agreed to create a new company that will focus on the K-12 market. Both companies own and provide access to significant e-content:

- Infonautics' Electric Library provides access to content in the form of books, magazines, newspapers, transcripts, maps and pictures. It is an online research center.
- Bell & Howell's information and learning area (PROQUEST) provides access to aggregated content for higher educator and K-12. Proquest has a database of dissertations, magazines, newspapers and other primary source documents.

Through the combination of the two entitites, EDCO will have a presence in more than 40,000 schools, which gives it an advantage in the race to become the learning portal.

SchoolTone Alliance

www.schooltone.com

The SchoolTone Alliance is an initiative of Sun Microsystems to create learning portals in schools. The Alliance will help schools create customized portals that provide access to content, communication tools and applications. Sun has formed partnerships with content providers and software developers to support the portals. See page 103 for more information on Sun Microsystems.

The Blindness of E-Learning

Learners possess very unique personalities that often manifest in the setting of a traditional classroom. Each of us has witnessed the variety of personalities in our own classroom experiences. For example:

- The outgoing learner interacts easily with other learners and eagerly asks questions. A band of outgoing learners may even monopolize the teacher's time.
- The assertive learner openly challenges other learners and perhaps the teacher by sharing his or her own opinions.
- The shy learner refrains from asking questions.
- The insecure learner may not be shy, but will not risk the "embarrassment" of being wrong or of asking a "stupid" question.

***e*-benefit: Blindness of the e-learning engagement. Because learners cannot see each other, some learners may transform and become active participants and engage more frequently because they are not intimidated by physical proximity to other learners.**

Pundits argue that e-learning creates an environment where a greater percentage of learners will feel engaged in the learning experience, i.e.:

- The **shy learner** can hide behind the anonymity of the computer or perhaps an e-learning alias and engage feeling much less inhibited.
- The **insecure learner** can allow thoughts to ruminate and form clear, cogent questions in which he or she feels much more secure.
- The **verbally challenged** learner can thoughtfully write his or her question without fearing derision for mumbling, stammering or lisping.

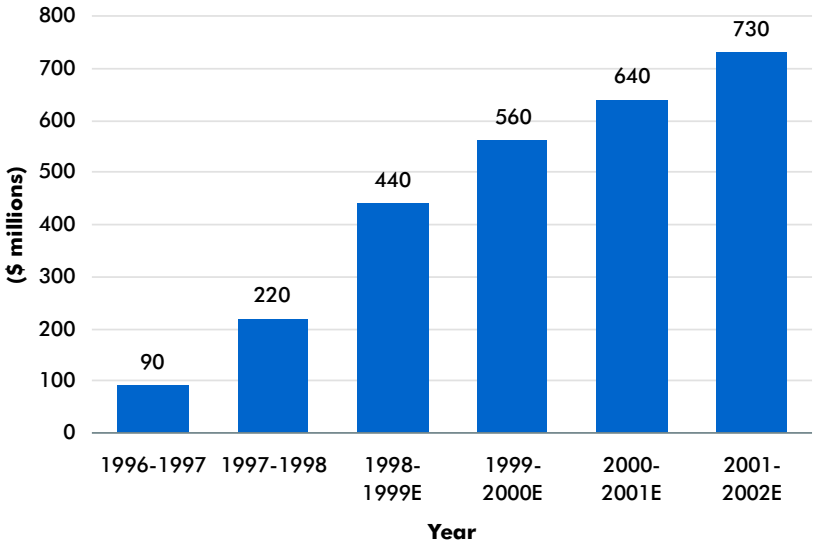
Pundits also applaud the blindness of e-learning because no one is aware of the user's **race, religion, physical disabilities, gender or sexual orientation**. The blindness of e-learning may foster a more representative discussion. However, there are people who do not flourish in an e-learning environment, such as those who prefer oral communication to writing.

Government Effort to Increase Access and Use

The greatest challenge to the equity of e-learning is the lack of access to e-learning. How about the schools, homes, families and children who cannot afford access to e-learning? Not only do those individuals suffer the inequities of inaccessibility, but they suffer a temporary disadvantage when they finally do gain access because they are less adept at the e-learning experience.

The government has played a large role in helping to increase access to the Internet, especially for the K-12 market. The increase in telecommunication expenditures for K-12 schools is in part a result of the increase in government programs and funding.

K-12 TELECOMMUNICATION EXPENDITURES



Source: IDC.

Distance Learning Grant Program is a $30 million competitive grant program that supports pilot programs that implement distance learning technologies.

Star Schools Program has awarded more than $125 million since 1988. It supports efforts to improve instruction in under served rural and urban areas through fostering the use of distance learning courses in mathematics, science, foreign languages, literacy skills and vocational education.

Rural Utilities Service Distance Learning Grant Program provides grants and loans directly to rural schools, libraries and other education institutions for the development of advanced telecommunications systems, including interactive learning systems and Internet access.

Teacher Training

A large barrier to bringing the Internet into classrooms is that teachers do not know how to use it effectively. Government support places heavy emphasis on training.

Technology Challenge Grants amounted to $30 million in fiscal 1998. The grants focus on enhancing teachers' skills and their professional development to use computers and advanced learning technologies in their classrooms.

Preparing Tomorrow's Teachers to Use Technology has provided $75 million in grants to train teachers to use modern technologies.

Technology Literacy Challenge Fund is a $2 billion fund that provides formula grants to state education agencies to support efforts at the state and local level to support the purchase of hardware, **teacher training**, educational software and Internet connections.

Other Types of Funding

National Challenge Grants for Technology in Education provide funding for communities to form partnerships between local school systems, learners, colleges, universities and private businesses.

Technology Development, Demonstration, and Utilization provides funding to advance the use of new technology, assistive technology, media and materials in the education of children and those who are disabled, as well as the provision of related services and early intervention services to infants and toddlers with disabilities.

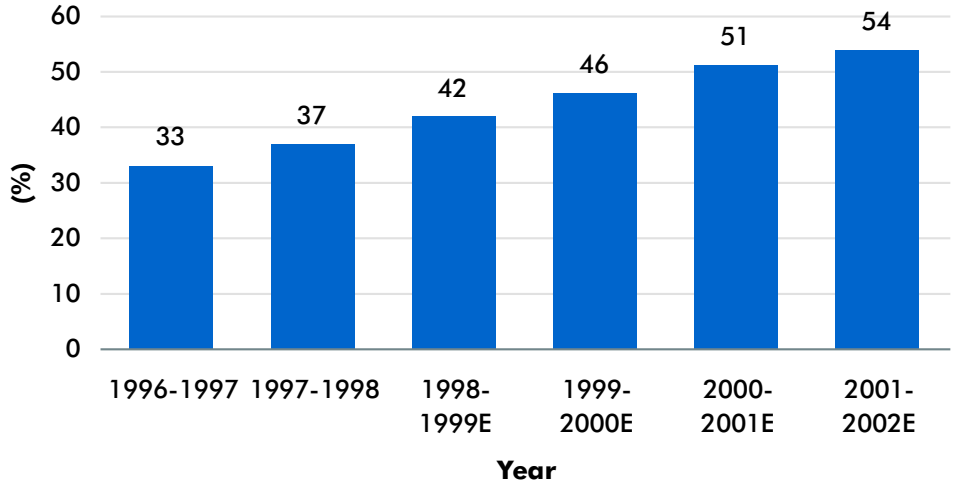
Community Technology Centers Program provides funding for centers that promote the development of model programs that demonstrate the educational effectiveness of technology in urban and rural areas and economically distressed communities. Community Technology Centers provide access to information technology and related learning services to children and adults.

E-Rate

The e-rate is probably the most significant program that has influenced Internet access for schools. On May 7, 1997, the Federal Communications Commission (FCC) adopted a Universal Service Order implementing the Telecommunications Act of 1996. The Order ensures that all eligible schools and libraries have affordable access to modern telecommunications and information services.

Schools have a long way to go to get every classroom connected to the Internet. The e-rate program is helping to improve the rate at which schools and classrooms are connected to the Internet.

K-12 CLASSROOMS WITH ACCESS TO THE INTERNET



Source: IDC.

Under the e-rate program, up to $2.25 billion annually is available to provide eligible schools and libraries with discounts, often referred to as the "e-rate," for authorized services, beginning January 1, 1998. The e-rate application process requires schools, school districts and states to think seriously about their technology funding and submit a technology plan with their application. Discounts range from 20% to 90%, depending on economic need and location (urban or rural). The level of discount is based upon the percentage of learners eligible for participation in the federal free and reduced price school lunch program.

The e-rate discount can be used for:

- Internal connections and wiring for the Internet.
- Telecommunications services.

- Internet access.

The e-rate discount cannot be used for:

- Desktop computers.
- Learning software.
- Teacher training.

NetSchools

www.netschool.com

NetSchools' solution includes the curriculum resources, training and hardware for schools. The NetSchools Solution is a systems approach that provides each learner with a laptop computer and a wireless connection to the Internet. NetSchools also aggregates content for teachers and learners to use. The wireless connection helps foster interaction between learners over the Internet with e-mail and chat rooms.

Because the program is for K-12 learners, the computers have been designed with the user in mind. The keyboard is water resistant, there is a built-in handle, and the case is built out of rugged magnesium for durability.

Revenue model: Charge for the system on a per-learner basis and include training, hardware and connectivity in the cost of $741 per learner.

The e-rate has experienced some challenges as schools are having trouble actually seeing their funding. The first round of applications were accepted from January to April 1998, but monies were not paid until November, and even then only 25,785 of the 30,120 applications were funded because Congress funded only $1.6 billion of an expected $2.25 billion.

The funding delay and shortfall wreaked havoc for schools that were expecting an allocation. For year two, 32,000 applications totaling $2.4 billion in funding were received and the FCC has approved nearly all of the applications (Source: Schools and Libraries and Department of Education web pages).

Issues of Equity and Access

The e-rate program may grease the tracks for certain e-learning companies. Schools can find government support for their e-learning infrastructure and, as a result, schools will be more inclined to create technology plans. Nonetheless, as illustrated above, while the e-rate program covers the cost of connecting to the Internet, hardware and software are not included in the program.

Issues of access and equity remain paramount in the halls of state legislatures.

www.zapme.com

ZapMe is building a business by addressing the issue of access. ZapMe provides schools with free technology and Internet access while placing the cost on businesses and corporations through an advertising and sponsorship model.

ZapMe! Netspace is the proprietary satellite delivery-based computer network system providing safe, high-speed, Internet access and **aggregated content** to K-12 schools across the United States. ZapMe! Netspace provides schools with 15 Pentium computers and access to more than 10,000 preselected educational sites.

Revenue model: Advertising model grants sponsors access to screen space on computers. Advertising flashes eternally on the monitor. If the school does not want the advertising model, then it can purchase the solution for $950 per month per computer.

ZapMe!'s advertising model is the first K-12 educational company to take advertising beyond banner ads on web sites and bring it into the classroom. Many teachers have not embraced this approach because they do not want the advertising to be brought into the classroom.

ZapMe! will not lack controversy. The topic of advertisers within school walls is politically and emotionally charged. Advertising in school is unpopular. Most of the major education organizations oppose advertising in schools.

Currently, the California Senate is in the process of ratifying a bill that makes it more difficult for commercial programs such as ZapMe! to be accepted in schools. The New York Board of Regents already has a bill in place that bans advertising in schools. In addition, the San Francisco School Board has passed a policy banning material that uses advertising and logos as part of the curriculum.

The arguments on both sides are passionate and thoughtful. Those who support ZapMe!'s business of providing Internet access for schools are well-supported by the analysis of this chapter. Those who oppose the business argue along the following lines:

- **Advertising in school is distracting** and often disrupts educational activities. Learners' attention is drawn away from the learning process by flashy ads mimicking youth culture.
- **Every minute of advertising costs the school**, and thus taxpayers, whether the learners are learning about math or anti-pimple cream. Principals and teachers are being enlisted to indirectly promote a particular company's products—time that would be better spent improving educational outcomes.
- Children are particularly sensitive to peer pressure, which is exactly what advertisers play on. Instead of being encouraged to study and strengthen their skills for a competitive job market, **advertising stimulates learners' anxieties about wearing a specific brand of sneakers**, drinking one soft-drink brand over the other or buying products they often can barely afford. Advertising thereby whittles away schools' credibility.

www.apex.netu.com)

A less controversial e-learning remedy addressing the problem of inaccessibility is APEX. APEX levels the playing field in high schools for learners in smaller high schools by providing them access to more Advanced Placement courses like their peers in the larger, better-funded high schools.

APEX allows a learner in any location to take advanced courses that may not be offered at their school. Offering courses via the Internet offers a less expensive alternative for financially challenged schools than hiring a teacher for a relatively small group.

APEX content is created by a certified teacher who has taught AP courses or graded national AP exams. Learners can register individually or a school can provide the course during schools hours to a class. Courses are a semester long, based on a high school calendar, and require 10 hours a week to complete. Learners are provided with activities and tests requiring completion during the week. There is one teacher assigned to 25 learners and specific times designated for **interaction** with other learners and the teacher through discussion groups and office hours

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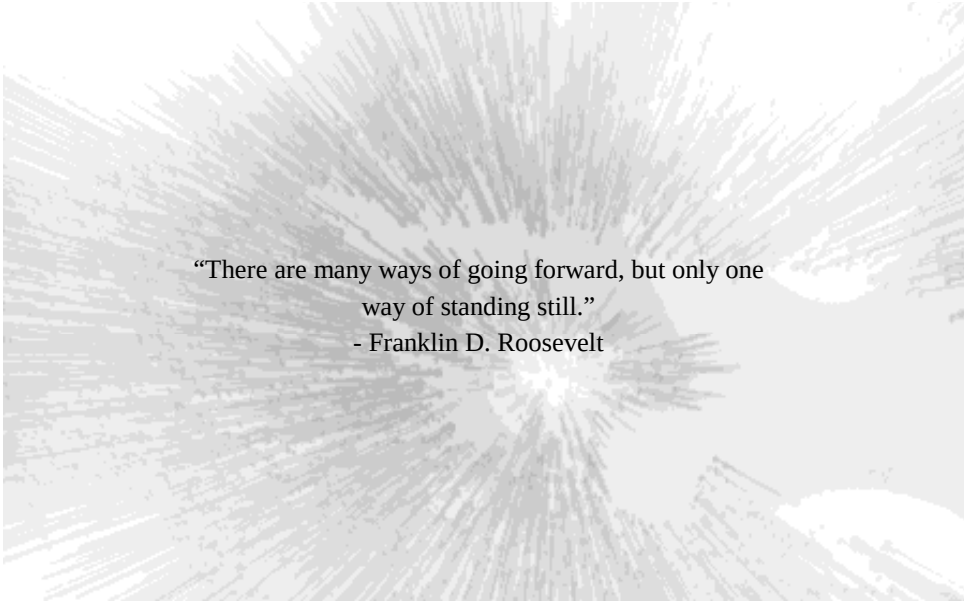
Revenue model: Learner or parents pay $395 per course, per learner, for a semester. The course includes assessment materials, software, texts and access to online materials.

CHAPTER 8

LAND OF THE GIANTS



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The Land of the Giants: The Future of E-Learning

While all of the hyperbole has focused on the potential of private e-learning companies and their competitive position in e-learning, we believe prudent investors should not overlook the ability of large corporations to dominate this attractive industry.

We believe IBM, Microsoft, Oracle, Sun Microsystems, Harcourt General and others are sitting patiently, letting the market sort itself out to some degree before weighing in with a full-scale service and technology solution.

We liken the Giants' delayed dominance to two historical situations described below.

Microsoft and the Internet

Microsoft

MICROSOFT (MSFT)

Market Cap.	Stock Price (52-Week High, Low)
$470 billion	$92-1/4 ($100-3/4, $43-7/8)

In 1995-1996, industry observers pilloried Microsoft for their lack of an Internet strategy. Upstart Netscape rolled out their Navigator web browser and dominated the consumer and corporate markets.

Microsoft did not panic. Nor should it have, because it had the resources and economic clout to strike back. When it seemed appropriate in their eyes, Bill Gates and Microsoft shifted energy and resources toward the Internet.

The Microsoft barrage included:

- An Internet browser (Microsoft Internet Explorer).
- An online provider (Microsoft Network-MSN).
- A partnership with media/content/broadcasting giant NBC (MSNBC).
- E-commerce sites (Expedia, carpoint, etc.).
- Investments in cable (TCI), broadband and content.
- Microsoft remains the dominant PC-centric software provider, yet now it is an online force, too. Of course, Microsoft's strategy was aided by its own brand name and its appeal to Microsoft partners (see MSN and MSNBC).

In short, we view Microsoft's online move as a classic in the Land of the Giants: Use might to get into an attractive market when it is believed that the dust is settling, then use vast marketing clout to ensure the effort receives support from key players in the technology, media/content and consumer worlds.

AT&T and Cable Television

AT&T (T)

Market Cap.	Stock Price (High, Low)
$146 billion	$46 ($65-5/64, $32-1/4)

AT&T, historically a voice and data transmission company, looked into the crystal ball and saw **the singular convergence of voice, data, entertainment content, billing and services at the back of the consumer's cable-connected television**.

AT&T also saw something else in that crystal ball—a weaker AT&T. So, Giant AT&T responded. It recently became one of the largest cable TV players—virtually overnight—with the purchase of TCI Inc. and the pending buyout of MediaOne Group.

AT&T's strategy was extremely bold, one that few participants in the telecommunications or cable industries could even have considered. Nonetheless, given AT&T's financial position, installed customer base and brand name, the combination looks like a winner.

Successful execution still looms as a significant question mark, but the probability is high that AT&T will dominate or at least wield significant influence in the new telecom world.

Lessons from Historical Examples

History teaches us that large, deep-pocketed companies can make a significant impact on a market in a relatively short amount of time. We believe e-learning is ripe for a similar play by the Giants.

The incentives are obvious:

- An enormous market with annual expenditures potentially reaching trillions.
- An inefficient and fragmented market.
- The likelihood that technology will improve efficiency and consolidate the market.
- Exciting opportunities to create lifetime brands for young consumers.

Companies such as IBM/Lotus, Sun, Microsoft, Harcourt and others have the mettle to dominate the e-learning world. One of their core competencies is their ability to develop new technologies and adapt them to different marketplaces, then use their substantial marketing power to quickly dominate the market.

The Giants usually possess the key ingredients to dominate a new market:

- A recognized brand.

- The financial resources to lose money until critical mass or significant market share is captured, particularly by supporting a massive marketing budget.
- Superior reputations for quality, service and innovation.
- A large installed base of users.

Where Will the Giants Frolic?

We thought it would be instructive to provide a brief look at some of the giants' current e-learning initiatives.

We believe the technology giants will focus on systems support and infrastructure for e-learning. We believe they will flex their muscles by developing, marketing, installing and maintaining systems that bring learners together including:

- Collaboration software and hardware.
- Search technologies.
- Networks and bandwidth enhancement.
- Oodles of content.

The Sun Also Rises

SUN MICROSYSTEMS (SUNW)

Market Cap.	Stock Price (52-Week High, Low)
$58.5 billion	$75-5/8 ($77-15/16, $19-3/16)

Sun Microsystems is leading an initiative called the Schooltone Alliance (see page 92). Sun hopes to further its penetration of the K-12 e-learning market by combining Sun's assets (reputation, installed base, marketing budget, sales force) with a wide variety of products, content and services for the K-12 market.

The initiative should drive Sun's core business, too, as the Alliance should drive sales of Sun's servers and technology service businesses, in our opinion.

An Oracle's Prophecy of E-Learning Dominance

ORACLE®

Enabling the Information Age ™

ORACLE (ORCL)

Market Cap.	Stock Price (52-Week High, Low)
$53 billion	$36-1/2 ($41-11/64, $12-1/8)

Oracle Education Online is the complete one-stop shop where IT professionals can register for classroom training, purchase interactive courseware, learn online, interact with others about Oracle technology and prepare to become Oracle Certified Professionals. Importantly, content on the Oracle education site is not limited to Oracle software. Oracle also offers training in Microsoft, Novell and other Internet related technologies. Oracle Education is roughly a $400-million-per-year business.

If Content is King, Publishers Live in the Royal Court

We believe the publishers are best equipped to dominate e-learning because they own the content.

Harcourt

HARCOURT (H)

Market Cap.	Stock Price (52-Week High, Low)
$3.1 billion	$43-7/8 ($55-1/2, $41-7/8)

Harcourt is the ideal example of a publisher that can be a giant in e-learning, primarily driven by its cache of content:

- Harcourt Schools: K-8 textbooks.
- Holt, Rinehart & Winston: upper school textbooks.
- Steck-Vaughn: K-12, Adult Education and ESL supplemental products.
- Harcourt College: textbooks.
- Harcourt Trade: Fiction, nonfiction adult and children's books.
- The Psychological Group: develops and administers K-12 clinical and assessment tests.
- NETg: Online training content and services.
- International Correspondence School: Degree and nondegree distance learning provider.
- Professional Trade: materials for finance, accounting and legal professions.
- Drake Beam Morin: career and outplacement services.

- Domestic STM: science, technology and medical publications.

Beyond the company's current business lines, however, are three major initiatives that should propel Harcourt into the mainstream of e-learning:

- **Through Harcourt University**, Harcourt may become the first major publishing house to offer accredited college degrees, pending approval from the New England Association of Schools and Colleges.
- **An Internet high school** is in the works for students planning to take high school equivalency exams. We believe Harcourt is well positioned to build a profitable business in high school e-learning. The Harcourt name is well-recognized and respected within high school academic circles. The company is experienced in developing and delivering K-12 tests, and it should have an early-mover advantage in the e-learning world.
- Harcourt made a large investment in **Family Education Network** (see page 91 for a full discussion of Family Education Network) and provides content for its site.

In 1998, the publishing industry witnessed a large amount of merger and acquisition activity, as many large companies moved to expand their product stables.

EM'S MERGER & ACQUISITION INDEX, JANUARY—AUGUST 1998

Company	Acquired	Date	Price/Remarks
Macmillan Ltd.	Heinemann ELT	1/5	Buy doubled Macmillan's ELT sales
Perseus Books	Addison Wesley Trade Div.	1/5	Division had sales of $78 million
Tribune Education	RGA/Lowell House	4/6	Est. Price $5-7 million
Pearson PLC	Simon & Schuster	6/8	$3.6 billion (1)
Torstar Corp.	ITI Education	6/8	$14.4 million for 26% stake
Cinar Films	HighReach Learning	6/15	$26 million in cash & stock
Haights Cross	Sundance Publishing	6/22	$35.5 million in cash
Addison Wesley	Peregrine Publishers	7/6	$6 million in stock
Cambridge University Press	Bon Holtzbrink ESL List	7/6	List revenue less than $1 million per year
Harcourt General	Morgan Kaufman	7/6	$8.9 million in cash
Scholastic	Pages Book Fairs	7/6	$10.5 million in cash
Primedia	Cambridge Research Group	7/20	Est. Price $12 million
Am. Ed. Products	Summit Learning	7/20	$2 million in cash
Success Publishing	Compton's print titles	8/3	Titles generated over $5 million annually
Harcourt General	Gartner Learning	8/3	Expands NETg
Tribune Education	Living and Learning	8/10	L&L had estimated sales of $10 million

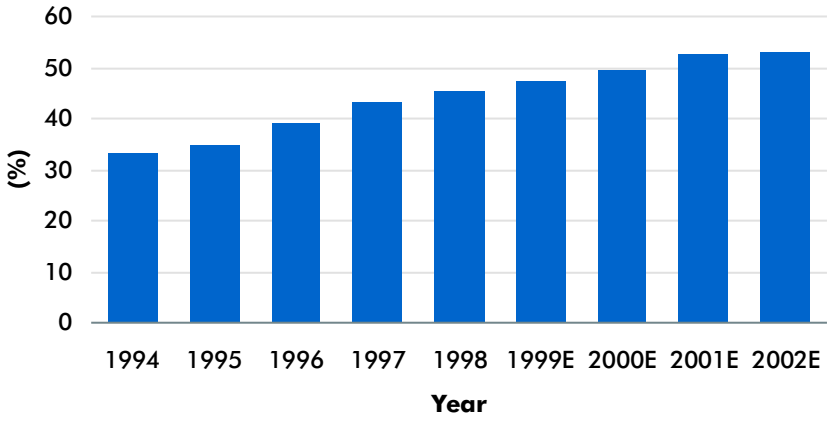
(1) Educational publishing assets only.

Source: Simba Information, Educational Marketer—Vol. 29, #27.

The Portal Giants

The decline in computer prices has enabled millions of Americans to go online. According to the IDC, in 1998, 44.5% of all households owned at least one PC. Of those homes with PCs, 55.3% of them were connected to the Internet.

PC PENETRATION IN U.S. HOMES



Source: IDC.

We believe as consumer access to the Internet expands, major Internet portals could become strong players in e-learning. **Education is the second-most-popular application for family households, which shows the potential for the Internet to be used in the area of education.** In our view, AOL and Yahoo! have the brand names (and thus the site traffic), financial resources, marketing prowess and sales organization to draw both consumers and vendors to their sites, thereby becoming leading e-learning portals.

America Online (AOL)

AMERICA ONLINE (AOL)

Market Cap.	Stock Price (52-Week High, Low)
$101 billion	$93-1/4 ($125-1/2, $17-1/4)

We believe AOL may be a prominent player in the e-learning world, primarily driven by its huge membership base (now upwards of 17 million people). AOL offers consumers access to learning content, support services, chat rooms and more through its Research and Learn web center. In AOL's Research and Learn web center there are links to a variety of education topics such as science, history, legal, reading and literature, as well as links to top education sites such as Family Education Network, the college boards, Learn2.com and more.

Content could be developed in house, privately labeled for AOL (and thus branded AOL education) or resold by AOL for content developers and authors. In any scenario, AOL would derive revenues from product sales and increased advertising as learners would spend time on the AOL Research and Learn site doing research, taking classes, preparing for tests and completing assignments.

Media Giants

Consistent with this chapter of the e-bang theory, many large corporate organizations are getting into e-commerce businesses as a natural progression or extension to their current operations. **CBS**, the media conglomerate, is no exception, and is perhaps one of the more aggressive players in the media arena. CBS, which already has an investment in a small stable of e-commerce businesses, recently added an investment in Jobs.com, an online employment web site. We believe CBS desires to capture some of the migration of traditional classified advertising as it makes the transition to Internet. With its clout, CBS may try to position Jobs.com as a leader in the lucrative market in a short time.

Yahoo!

YAHOO! (YHOO)

Market Cap.	Stock Price (52-Week High, Low)
$33 billion	$143-13/16 ($244, $29-1/2)

Yahoo!'s education center provides a link to a wide variety of education-related topics such as instructional technology, K-12, distance learning and standards and testing. Each category is further broken down by market or topic, providing links to vendors in the specific subject area.

Yahoo!'s home page includes an education "center" and a separate web guide for children called Yahooligans! Yahooligans! is a search engine specifically for kids. The site provides links to a plethora of online learning resources and other sites that are appealing to children. Some of the links include:

- Teachers Guide to teaching with Yahooligans!, which provides resources to help teachers use the Internet and Yahooligans! in their classrooms.
- School Bell links to resources that are specifically school related. Links to sites that help with homework, various subjects, reference and information on clubs, programs and careers.

As with AOL above, we believe Yahoo! could be a prominent player in e-learning, but most likely as a content aggregator e-learning portal. We do not believe teaching or advising students or teachers will be a long-term core competency for the company, but given its brand name and tremendous site traffic, Yahoo's future in e-learning may be something to yell about.

Big Blue and the Land of the Giants

IBM (IBM)	
Market Cap.	**Stock Price (52-Week High, Low)**
$224 billion	$123-3/16 ($139-3/16, $155-3/8)

We believe IBM will walk among the giants as the e-learning universe takes shape, driven by its experience with its external training division (Catapult, focused on software training), its internal education efforts (Global Learning) and Lotus LearningSpace (a dominant platform for collaborative learning).

Global Learning was launched in 1997 and now trains more than 125,000 employees across the globe. Catapult boasts more than $300 million in revenue, and Lotus LearningSpace (purchased in 1995) has leveraged the installed based of Fortune 1000 Lotus Notes users to become a widely used platform for collaborative learning.

IBM has taken long strides in a short time, something we expect from a giant with long legs. We expect Big Blue to emerge as a dominant force in the e-learning world, primarily as a platform provider, for the following reasons:

- IBM has one of the best brand names in the world.
- It has very deep pockets to support necessary acquisitions and other investments.
- Its distribution channel (salesforce and resellers) is broad and deep.

The ability to leverage the installed user base of Lotus Notes through a global sales force and a marketing budget virtually unmatched in the e-learning universe makes IBM an obvious candidate for giant status.

In the fall of 1999, Lotus acquired the training management software of Macromedia—Pathware—to enhance LearningSpace's ability to track and schedule c-learning courses and monitor learner progress. We believe the transaction supports our thesis regarding the migration toward the need for providers to offer customers a training **solution** rather than a specific **product** or **service** capability. While the marriage will require some near-term work (Lotus is still integrating 1998's acquisition of Databeam), it should provide Lotus with a more complete, integrated training solution in the long term.

DataBeam (www.databeam.com) was founded in 1983 and is a part of IBM/ Lotus. DataBeam Learning Server creates a virtual classroom, while learning advisors blend their expertise by co-lecturing from different locations. Data Beam also offers the neT.120 Conference Server 2.0 and a toolkit series that enables third-party developers to integrate voice and video communications in LAN and Internet products. DataBeam recently formed a partnership with Asymetrix to integrate Asymetrix Librarian with DataBeam Learning Server to allow customers to manage and deliver both live and self-paced content over the Internet.

We believe IBM will provide content or give clients the ability to create content in support of the LearningSpace learning platform focus. Catapult certainly could be a source of that content, although we believe that will not be the focus in the near term.

Microsoft

We are confident that Microsoft will soon release a robust enterprise-level management product to manage the learning module of the enterprise. The company already owns other assets that are germane to e-learning, including:

- NetMeeting, a collaboration and conferencing tool that allows users to interact across the Internet in real time. Products include video and audio conferencing capabilities, chat, whiteboard and file transfer to facilitate document sharing.
- **Microsoft BackOffice**, a suite of products designed to help network administrators manage a single server or a distributed network of multiple servers.
- **Internet Explorer**, a web browser that allows users to access the Internet, allows developers to construct high-quality content and allows administrators to roll out multiple access point with minimal administration.
- **Microsoft WebTV**, an e-appliance that allows users to access the Internet through their television. Users can send and receive e-mail, access interactive television programs or just surf the Net.

The Giants do not play football in New Jersey nor baseball in San Francisco, they currently rule the worlds of technology, services and content. The Giants will conquer the landscape of e-learning—it is only a matter of time.

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CHAPTER 9

THE E-LEARNING INVESTMENT

" Until every child has a computer in the classroom and the skills to use it....until every student can tap the enormous resources of the Internet....until every high-tech company can find skilled workers to fill its high-wage jobs....America will miss the full promise of the Information Age."
- President Bill Clinton

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The E-Learning Investment

The discussion of valuation is always at the core of any investment treatise. Investors at any stage need to make decisions about allocating their capital based on a decision they reach regarding valuation.

In a nascent industry—like e-learning—the investment decisions are more difficult than in a mature industry. There are few, if any, data to study as most of the industry's businesses (the data) are too new to offer lessons about what business model is best. For example, if an investor were evaluating a start-up in the automobile industry (a highly unlikely occurrence), the investor could learn a great deal by studying Ford, Chrysler, GM and DeLorean. Conversely, what would an investor study in e-learning?

In addition, how would an investor value an e-learning company if there are few, if any, e-learning companies against which one could value—or "comp"—the business? The decision is obviously even more complicated with a private company where there is no "readily available market" for the investment as contrasted with a public company, where the investment is priced to market daily. That is why private investments are considered riskier, and, in turn, that is why private investors expect a bigger return for their invested dollars.

Nascent or not, the valuation exercise must move forward. If someone asked, "what is the appropriate comp group for DeVry?," one could intuitively and quickly respond with a long list of companies, such as ITT Education, Education Management, Strayer Education (see pages 140-143 for investment performance and other data on this "comp" group). Conversely, if someone asked, "what is the appropriate comp group for E-LearnIt" (a fictional company), one would need some time to ruminate.

One would have to consider the following two-part questions:

Part One

- In what industry (or sub-sector of an industry) does E-LearnIt operate? Which companies reside in that sector or sub-sector?
- What are the growth drivers for that sector? Which companies stand to be beneficiaries of those drivers?

The companies that emerge as answers to the questions compose the comp group.

Let's give it a shot.

- In what industry (or sub-sector of an industry) does E-LearnIt operate? And what other companies reside in that industry?

The industry is the "education" or "learning" industry, which consists of a lengthy list of companies, albeit most are considered small capitalization companies (market capitalizations of less than $1 billion). Below is a list of some of the more recognized names:

Banc of America Securities

	Company	Ticker
1.	Apollo Group	APOL
2.	DeVry	DV
3.	Sylvan Learning	SLVN
4.	National Computer Systems	NLCS
5.	Advantage Learning Systems	ALSI
6.	CBT Group	CBTSY
7.	Harcourt	H
8.	Scholastic	SCHL
9.	School Specialty	SCHS
10.	ITT Education	ESI

Belonging to the "education group" used to be a highly sought after membership. The popularity of the membership was, in great part, driven by the attractive valuations. Time has changed and membership is shunned.

Name of Company	Valuation (1)	Valuation (2)
Apollo Group	47x	23x
Learning Tree	82x	19x
Computer Learning Centers	26x	13x
CBT Group	48x	34x
Sylvan Learning Systems	29x	13x
ITT Education	33x	14x
S&P 500	21x	26x

(1) Stock price at December 31, 1996, divided by 1997 EPS.
(2) Stock price at 8/30/99, divided by estimated fiscal 2000 EPS.

Source: Banc of America Securities LLC, Bloomberg.

E-Learning Companies

At this juncture, we believe it is critical to delineate between traditional education or learning companies (those listed above) and e-learning companies. The reasons for the delineation are stated (explicitly and implicitly) in much of what has been written previously. Another convincing reason for the delineation is the powerful leverage that the Internet offers e-learning companies, unlike their traditional counterparts.

As we have discussed, the oldest model in learning or training businesses is the instructor-led model. Its basic offering is a class that consists of a seat and access to the learning advisor or the subject matter expert. Pay for your seat, come to the class, end of story, end of transaction. Tomorrow, get your telemarketers to call the customer/learner again to see if you can sell a seat for the next seminar. (Our concerns regarding the viability of this model are shared at pages 69-79.)

Now, consider what the Internet can do for the customer relationship—driven by the same customer problem, the need for learning. The Internet provides a "live" connection with the customer. With that "live" connection or the leverage of the Internet, the vendor can extend the relationship (i.e., contract) by offering more products and services.

Product/Service	Instructor-Led	E-Learn
Subject matter expert	Yes	Yes
Facilities	Yes	No
Collaboration tools	No	Yes
E-mentoring	No	Yes
E-commerce (registration, billing, sales)	No	Yes
Data mining via a robust tracking and reporting system	No	Yes
Provide complementary content	No	Yes
Community services	No	Yes

While we admit that some of the variables in the table above are not binary, clearly the room for leveraging a customer relationship is significantly greater with e-learning than with traditional learning.

Example of the Leverage From the "Live" Connection

CBT Group recently upgraded contracts with Whitman Hart and Unisys. Both contracts were traditional, "old" CBT-style contract-selling access to the CBT Group's content library. CBT Group leveraged the Internet to substantially grow both contracts. The Whitman Hart contract was upgraded to include mentoring services (Scholars.com), business skills (Knowledge Well) and cbt.community. The expanded contract—and its three new dimensions—was a byproduct of the Internet.

The recent Unisys contract is even more striking. CBT Group is providing Unisys with a comprehensive e-learning solution, not just a product or service. CBT Group went from providing content to essentially outsourcing Unisys's virtual corporate university initiative, from registration to content to mentoring to managing the instructor-led course universe for Unisys's employees. **The annual revenue grew from roughly $1 million per year with Unisys to, potentially, as much as $20 million per year**.

Acquisition and/or Provision of Complementary Content

CBT Group's greatest competitor has been and will remain c-learning. Therefore, CBT Group essentially had three choices to beat its competitor:

- Wait for c-learning users to migrate to technology-mediated training—a shift that is occurring rapidly but nonetheless one that will never be complete (see page 44).
- Buy a c-learning company—an unlikely prospect based on the eroding health of those businesses (see pages 71-82).
- Go "live," leverage the Internet and take a piece of the action.

CBT Group elected the third option. The company will buy seats, in bulk, from c-learning vendors Global Knowledge Network and Executrain. CBT Group will then resell those seats to Unisys. CBT Group will facilitate registration and streamline the entire process, thereby achieving tremendous savings for Unisys, which heretofore had acquired training from multiple vendors. CBT Group should be able to negotiate attractive terms on the purchase because it will have purchasing leverage that the end user lacks.

CBT Group has, in effect, folded the dominant c-learning market share into its own market share while earning margins on the c-learning business that will likely surpass the margins earned by the originating c-learning vendor.

www.bookacourse.com is an online IT brokerage service. It enables visitors to search for a course, read course reviews, try sample exams, access training links and book a course. In a fragmented market like training with more than 50,000 vendors, the service is desperately needed, in our view.

Provision of Community

One of the strengths of a classroom is that the facility provides an environment in which learners can collaborate, confer and even commiserate. A learning portal can engender a learning community, too. The portal can offer learners access to other learners in chat rooms or through threaded discussion. The portal can offer learners access to experts—humans or static content. The portal can even facilitate a specific learning task such as problem solving.

Capacity for Data Mining

We believe corporate education initiatives have been hampered for some time by the inability of managers to measure the learning and financial impact of the learning experience. With e-learning, however, the software that runs the learning interaction is likely capable of capturing data that would be helpful in evaluating many dimensions of the learning experience. As the e-learning world matures and more students use the Internet to complete their e-learning experience, vendors and managers will have lots of statistics, including but definitely not limited to:

- Pages downloaded.
- Viewing time.
- Performance of software.
- Frequently asked questions.
- Assessments.
- Learning paths.
- Feedback.

The data, if used properly, can inform decisions about future investments in learning products and services. Measuring return on investment is no longer only a pipe dream for managers and vendors in learning.

Comps

At this juncture in our analysis, we are left with CBT Group as a sole representative of the e-learning industry. There are several private companies to consider—many of which are discussed in this report—but none can be used for valuation assistance because their valuation is unknown. They are private.

Other public companies have e-learning initiatives that would support their inclusion with CBT Group as "comps." However, we do not include them for two reasons:

- Their e-learning initiative is not the predominant piece of their business.
- We do not know enough about them to include them.

LIST OF PUBLIC COMPANIES WITH ONLINE LEARNING INITIATIVES

Ticker	Company Name	Description of Online Learning Initiative
ADAM	ADAM Software	Web-based health education and information delivery.
ADVS	Advent Software	Provides stand-alone and client/server software products to investment management firms.
AEDU	The American Education Co.	Licenses or internally develops and markets educational microcomputer software and CD-ROM titles in reading, English, spelling, social studies, bilingual language development and early childhood development.
ALPH	AlphaNet Solutions, Inc.	Sells computer software and hardware products and related services to Fortune 100 companies.
APOL	Apollo Group	Online campus.
ARGY	Argosy Education Group A	Online campus.
ARLCF	Arel Communications Software Ltd.	Web-based training platform.
ARIS	ARI Network System	Provides standards-based Internet-enabled e-commerce services.
ARSC	Aris Corporation	Web-based training.
ASYM	Asymetrix Learning Systems	Provides online enterprise learning solutions designed to enable organizations to capture, deploy and manage knowledge more effectively.
AWLD	Activeworlds.com Inc	Online creation of e-commerce/entertainment.
BDE	Brilliant Digital Entertainment	Creates digital entertainment for the Internet; e-commerce site.
BTZ	Berlitz International	Provider of foreign language instructional materials.
CBTSY	CBT Systems	Develops more than 694 software titles covering a comprehensive range of client/server, Internet and corporate intranet technologies.
CECO	Career Education	Online campus.
CINR	CINAR Corp.	Web content author and publisher.
CLBR	Caliber Learning	Operates a graduate level learning and professional training distribution network throughout the U.S. with 34 campuses.
CYTA	Cytation.com	Online training management system.
DACG	DA Consulting Group	Web-based training.
DGV	Digital Lava	Web- and video-based training-content production and turnkey projects.
DV	Devry	Online campus.
DWTI	Dataware Technolgoies	Web-based knowledge management solutions.
EDIN	Education Insights	E-commerce site - children's toys and software.
EDMC	Education Management	Online campus.
EDUC	Educational Development	Distributor of books and educational materials.
EDUV	Eduverse.com	Free web-based education supported by advertising revenues at freeenglish.com.
EVCI	Educational Video Conferencing, Inc.	Video conferencing over the Web.
FATB	Fatbrain.com Inc	Web-based reseller of IT training and educational materials.
FC	Franklin Covey	E-commerce site, Web-based knowledge management.
FCLSF	Firstclass Systems	Web-based IT training.
FMDAY	Futuremedia Public Ltd., Co	Produces interactive future multimedia courseware.
GICOF	Gilat Communications	Makes and markets interactive distance learning systems worldwide.
GTIS	GT Interactive Software, Corp.	Publishes and distributes interactive entertainment, edutainment, consumer software for a variety of platforms.
GWOX	Goodheart Willcox Inc	Publishes textbooks/workbooks for high schools, vocational, technical and private trade schools, colleges and universities.
H	Harcourt General	See page 104
HAS	Hasbro Inc.	Major children's toy producer.
HTN	Houghton Mifflin	Selling textbooks online.
HTSF	Heartsoft Inc	Internet filtering technologies for children.
IBSX	IBS Interactive	Web-based learning solutions provider.
IDGB	IDG Books Worldwide	E-commerce; online content publisher.
IFCC	Infocast Corp.	Provides electronic content delivery and information management capabilities. Applications include distributed learning, virtual call centers, telecommuting.

Banc of America Securities

Ticker	Company Name	Description of Online Learning Initiative
IHI	Information Holding Inc.	Provides essential information to professional and academic end users in attractive niche markets.
INFO	Infonautics	Company Sleuth (web search agent); joint venture with Bell & Howell.
ITCC	ITC Learning	Develops and sells multimedia training courseware.
JOS	Jostens Inc	Makes and sells class rings, graduation products, yearbooks, student photography packages, sports awards.
LOGLF	Logal Education	Publishes interactive, simulation-based, educational software and laboratory probeware products for science and math curriculums in high schools and colleges.
LTWO	Learn2.com	Provides enhanced communications applications for creating interactive, talking animated characters to expand the effectiveness and reduce the cost of media-rich web pages.
MACR	Macromedia	shockwave.com media site; sold authoring tools division to IBM/Lotus.
MAHI	Monarch Services	Provides commercial printing and graphic arts services; and publishes Girls' Life, a magazine for young women.
MATH	Mathsoft Inc	Develops general purpose calculation software tools and related products for technical professionals, educators and students.
MCRE	MetaCreations Corp.	Designs and publishes software tools for the creation, editing and manipulation of computer graphic images.
MHP	McGraw Hill companies	Provides informational products and services for business and industry, with a focus on such markets as finance and education.
NLCS	National Computer Systems, Inc	Provides services, software and systems for the collection, management and interpretation of data.
ORCL	Oracle Corp.	Leading database vendor and systems integrator.
OTEX	Open Text	Web-based document management system.
POSO	Prosoft Traning.com	Web-based support for distance learning course; online product catalog.
POVT	Provant	See page 229.
QEDC	Quest Education	Online campus.
RRRR	Rare Medium Group	Operates as an Internet professional services firm, which helps clients develop e-commerce Internet strategies, and interactive content using Internet-based technologies and solutions.
SCHL	Scholastic Corp	E-commerce site for the K-12 market.
SCIL	Scientific Learning	Uses the Internet for information transfer of student progress data.
SCTC	System and Computer Technology	Web-based administration system for higher education.
SLVN	Sylvan	Provides a broad array of supplemental and remedial educational services and computer-based testing services throughout the world.
SPSS	SPSS Inc	Develops, markets and supports an integrated line of statistical software products and services.
SSII	Sound Source Interactive	Publishes and markets educational, interactive computer software products for children, based on licensed content of major motion pictures and television shows.
STRA	Strayer Education	Online campus.
SVI	SVI Holdings	Provides computer and information technology services to specialty industries in domestic and international markets.
TRB	Tribune Co	Provides web-based content and services to the young adult market.
TSCC	Technology solutions	Provides information technology and strategic business and management consulting services to major corporations and financial institutions.
UOLP	UOL Publishing	Virtual campus provider.
VIS	VSI Holding	Provides business communication services to the automotive industry; designs and makes animated displays for the retail and entertainment industry.
WADE	Wade Cook Financial Group	Web-based financial services education.
WGNR	Wegener Corp	Makes and sells satellite communications electronics equipment to cable television operators, radio and television broadcasters.
WPO	Washington Post Clib	Owns Kaplan educational centers; Publishes The Washington Post, The Herald, and The Gazette Newspapers and Newsweek magazine.
ZD	Ziff Davis Inc.	ZDTV - online technology content & education.
ZDZ	Ziff Davis Inc- ZONET	Develops and maintains the ZDNet web site, a leading source for computing and Internet content and commerce.

Source: John Bucher Private Investment Group.

We now move to the second two-part question in our search to build a comp group. **What are the growth drivers for the industry in question (e-learning)? Which companies stand to be beneficiaries of those drivers?**

We discussed the growth drivers for e-learning in the earlier pages of this report; nonetheless, this is an appropriate time to both recap and augment the list.

Drivers

- **Increasing popularity of lifelong learning.** According to the 1995 National Household Education Survey, 76 million adults aged 16 and older participated in one or more adult education activities during the preceding year. That number—a 25% increase from just four years earlier—encompasses 40% of the adult population in the U.S. Two-thirds of these learners already have a college degree and half of them are in executive, professional and technical jobs. **More people want more learning.**

Proliferation of **"free agent learners"** is not so much causing the demand for online learning as online learning is causing the proliferation free agent learners—which makes some sense. As learning becomes more convenient, more people are likely to want to learn ("Training and Development," August 1999, p. 29).

- **Labor-force growth expected to slow between 1999 and 2006.** The existing labor force will bear the brunt of adapting to the needs of a highly competitive global economy characterized by rapid technological change. **Existing workers need to learn more and learn more often.**

- **Shortening product cycles.** New products are being introduced and older products are becoming outdated at an increasingly rapid rate. **Businesses must ensure that their customers and employees learn about more products and more services more often.**

- **Increasing product complexity.** The technological quotient of products and services supporting the economy has grown significantly. This complexity is driving the need for more readily available "learning." **Eric Schmidt, chairman and CEO of Novell stated, "Training's crucial, there's no danger of us making products easier to use. The areas we're getting into are so complex."**

- **Increasing use of outsourcing.** Businesses are electing to outsource functions that are not their core competencies. Business are electing to defer to someone else who can provide the service more efficiently and likely more cost effectively. Primary candidates are:

  - Staffing and employment services.
  - IT services.
  - Document management.
  - Accounts receivable recovery.
  - Facilities management services.
  - **Training.**

- **Serving the extended enterprise.** The enterprise encompasses many more than those on the payroll. Therefore, companies need several "smart" relationships—employees, sales force, re-

sellers (the channel), even customers, which with the increasing globalization of the economy are now located everywhere. **Business must support their own business objectives by ensuring that learning objectives are met, therefore capturing the entire enterprise under one learning "web" to improve the information efficiency and productivity of the enterprise.**

- **Webification of business processes.** The growth of web traffic, e-commerce transactions and multiple web-based services are growth drivers for businesses that help other businesses move to the Web ("webify"). As part of webification, Internet and related technologies empower businesses to offer customization on a scale that was inconceivable, pre-Internet. Therefore, massive customization and personalized content are at the core of Internet-centric businesses springing up daily. **We believe individualized learning plans or learning streams will soon be an expectation of most workers.**

The Webification of Learning

All but the final driver listed above should benefit traditional learning companies as well as e-learning companies. Therefore, our e-learning comp list would not necessarily expand if we identified beneficiaries of the first six drivers. It is therefore the last driver (webification of business processes) that is most exciting as well as most helpful for our purposes.

According to IDC, the biggest impact from the migration to thin-client, Internet-based computing (i.e., webification) will be intranets within companies. The proliferation of intranets has already begun to automate employee functions. Web-based applications enable employees and other members of the enterprise to use a web browser to submit an expense report, seek a travel authorization or process other requisitions. These "transactions" are expensive in a manual environment, and significant ROI is achieved via webification. Applications such as procurement (Ariba), human resources/benefits (PeopleSoft) and expense reporting (Extensity) are increasingly being deployed with "self-service" capabilities on corporate intranets.

We believe the rising tide will lift the learning boat, too. For example, unless learning is webified, it is nearly impossible to serve the learning needs of the "broader enterprise" discussed above. The alignment of business process, organizational structure and enterprise readiness depends on integrating human resources and other departments under one web-based learning machine.

Therefore, it is valid to consider Ariba as a comp to our fictional e-learning company, E-LearnIt. Both businesses (Ariba and ElearnIt) will benefit from the accelerating trend of webification because they both offer webified solutions to critical business processes.

Other businesses that offer webified solutions—and therefore may be positioned as comps to E-LearnIt—are Siebel, Vantive, Vignette, Silknet, Broadvision, US Internetworking, Verity, Clarus, Mobius Management, Clarify, and others (this list is not complete, but is only meant to show a representative sample of possible comps).

We are suggesting a list of "comps" that is lengthy, varied and perhaps unclear. We are not surprised by the confusion. ELearnIt is in a nascent industry that is proximate to many other nascent, Internet-centric industries: Customer Relationship Management (CRM), Enterprise Resource Management (ERM), Application Service Providers (ASP) and third-party hosting providers.

As a consequence of the similarities, the businesses mentioned above enjoy the same growth drivers as ELearnIt. Therefore, considering some of those companies as "comps" is, in our view, valid.

Of the companies mentioned immediately above:

- Some provide fully web-based solutions that include a hosting option (Siebel, US Internetworking).
- Some provide a web interface that allows a legacy solution to function across an open enterprise structure while remaining fully inside the corporate firewall (Clarus).
- Some offer solutions that enable companies to "extend their reach" into their customer base. This means companies are able to provide customized marketing programs based on information the software solution can gather from transactions, conversations, e-mail messages or help-desk utilization trends (Vantive, Vignette, Silknet, Clarify, Broadvision and Open Market).
- Some allow employees to gain better traction within their own organization. Organizations are full of knowledge that most employees either do not know exist or do not have a way to access. These solutions provide means by which employees can access and utilize this knowledge and in turn offer greater incremental value back to their employer (Verity, Mobius).

Much of the impetus behind the formation of the comps listed above is the goal of enabling clients to serve customers better, often times by offering a customized approach that was not feasible before the Internet. The Internet has enabled "mass customization" (*The Experience Economy*). E-learning companies should be able to offer mass customization, too, in the form of individualized education plans.

Of course, one distinction is that unlike BroadVision or Vignette—which enable their clients to customize their approach to massive consumer audiences—ELearnIt enables its clients to offer customized learning streams to employees. Yet, in an era dominated by "free agent learners" ("Training and Development"), **companies must begin treating their employees like customers, in our opinion**.

In general, our thesis and the foundation for our somewhat fluid comp group is that the proposed comps benefit from the same growth drivers as ElearnIt.

VANTIVE CORPORATION (VNTV)

Market Cap.	Stock Price (52-Week High, Low)
$2.3 billion	$7-5/8 ($15-13/16, $5)

Vantive provides customer relationship management solutions. The software enables call center, marketing, field sales, help-desk and field service personnel to deliver consistent customer service across a variety of channels.

VIGNETTE CORPORATION (VIGN)

Market Cap.	Stock Price (52 week High, Low)
$1.7 billion	$68 ($111-3/4, $37-1/4)

Vignette provides Internet Relationship Management software products and services. Its solution helps companies build better online customer relationships, convert site visitors into customers and manage their online business initiatives.

SILKNET SOFTWARE, INC. (SILK)

Market Cap.	Stock Price (52-Week High, Low)
$525 million	$35 ($52-3/8, $15-5/8)

Silknet provides software that enables companies to offer their customers personalized marketing, sales, e-commerce and support services through a single web site. The software can capture and consolidate data from the Web, phone and e-mail.

BROADVISION INC. (BVSN)

Market Cap.	Stock Price (52-Week High, Low)
$2.5 billion	$97-3/8 ($116-3/8, $9-1/4)

BroadVision develops software solutions for one-to-one relationship management—the solutions allow companies to conduct commerce, offer a variety of services and deliver targeted info to their customers, suppliers, employees and others via the Web.

VERITY INC. (VRTY)

Market Cap.	Stock Price (52-Week High, Low)
$726 million	$49 ($54-3/4, $5-1/16)

Verity provides knowledge retrieval and management software that enables employees to have single-point access to information across the enterprise (the corporate portal).

CLARIFY INC. (CLFY)

Market Cap.	Stock Price (52-Week High, Low)
$1.0 billion	$43-3/4 ($49-1/8, $6-3/8)

Clarify provides "front-office" software solutions targeted at managing customer relationships. The software integrates a variety of media including the Internet, telephone and e-mail to deliver consistent customer service.

CLARUS CORPORATION (CLRS)

Market Cap.	Stock Price (52-Week High, Low)
$112 million	$12-3/4 ($15-5/8, $2-11/32)

Clarus provides web-based software for e-commerce, client/server financial and human resources applications. The software enables information transfer between ERP applications regardless of platform.

MOBIUS MANAGEMENT SYSTEMS (MOBI)

Market Cap.	Stock Price (52-Week High, Low)
$115 million	$6-1/4 ($24-7/16, $4-15/16)

Mobius Management provides software solutions that enable better information retrieval, storage and utilization targeted at improving the customer service aspects of a business.

USINTERNETWORKING INC. (USIX)

Market Cap.	Stock Price (52-Week High, Low)
$554 million	$6-1/6 ($24-7/16, $4-15/16)

USInternetworking provides solutions that enable corporations to outsource critical business functions (hosting)—its product integrates the implementation, operations, communications and support of Internet-based software applications.

OPEN MARKET INC. (OMKT)

Market Cap.	Stock Price (52-Week High, Low)
$430 million	$11-7/8 ($27, $4-1/4)

Open Market provides software solutions that enable customers to conduct e-commerce, information commerce and publishing via the Web.

SIEBEL SYSTEMS, INC. (SEBL)

Market Cap.	Stock Price (52-Week High, Low)
$6.0 billion	$66-3/8 ($73, $15-1/8)

Siebel provides office automation products that address customer service and support, sales and marketing and are well suited for webification, in our view. SiebelNet is a web-hosted service for small and mid-sized businesses that prefer not to manage the technology and personnel issues that come with implementing a full Siebel front-office solution. **We expect many of the companies above to offer "hosted" solutions.**

Although our comp group is Internet-centric, it excludes recognizable Internet-centric names. The exclusion is valid, in our view, because we have made the following distinction. The companies mentioned above offer webified solutions whereas:

- Amazon, eBay and eToys are webified businesses.
- Oracle and Cisco help other businesses webify (albeit Oracle's 8I web-hosted product may support an argument for including Oracle as a comp).

In conclusion, our comp group for ELearnIt suggests that:

- The e-learning industry waters are unchartered.
- The neighboring waters are also unchartered.
- **This is one exciting voyage. Hang on for the ride!**

Bull's Eye!

There are several private companies that we believe could someday be the archetype of an e-learning company. Most of those companies have been discussed, at length, on the earlier pages of this report.

10 STRONG E-LEARNIT COMPS

Company Name	Description	Pages discussed at length
1. Apex	Provides access to Advanced Placement high school courses via the Web.	98
2. Blackboard	Enables asynchronous learning via a learning platform and content creation capabilities.	33, 38
3. Campus Pipeline	Creates a learning portal that web-enables many campus administrative functions such as course registration, viewing grades and transcripts, buying books and checking financial aid.	37, 38
4. eCollege.com	Provides a comprehensive suite of products and services to create and maintain a fully hosted e-campus, complete with courses and administrative functions.	-
5. Family Education Network	Provides a portal for learners, parents and teachers that includes content, interaction, access to subject matter experts and e-commerce.	91
6. JuniorNet	Provides a commercial-free web site for children and parents. Content is delivered via a hybrid CD-Rom/Internet technology.	17
7. Pensare	Creates knowledge communities that encourage collaboration among learners. Learners can be an observer, mentor, coach, expert or administrator.	20, 52
8. SkillSoft	Digitizes content for a comprehensive range of business skills, adapting the materials to an e-learning format by adding graphics and animation.	-
9. Unext	Provides an e-learning environment for adult learners. Content is developed by Unext in partnership with leading academic institutions such as Stanford and Carnegie Mellon.	20
10. Yipinet	Provides web-based continuing education content for professionals in regulated industries such as accounting, law and health care. The content is developed by subject matter experts.	18

Two private companies that could have strong business models in e-learning are Digital Think and Saba Software.

Our positive view on Digital Think is deductive:

- As we mentioned earlier, software is difficult to install, maintain and upgrade. **Therefore, it is not surprising to see more application outsourcing.** Application outsourcing allows customers to realize the benefit of the system's automation while not maintaining, upgrading or deploying the software.
- The Internet has made application outsourcing feasible, particularly with access to high-performance, graphically oriented applications. **Therefore, we believe Internet-based application outsourcing will be a significant trend for certain vendors.** Internet-based application outsourcing means that a third party runs a software system away from the client's location and accessed over the Internet.

Mission-critical applications will be the first outsourced, fully web-enabled (i.e., accessible with only a browser) solutions. Therefore, it is not surprising to see the early success of Oracle 8I (database management), SiebelNet and Claify (front office/sales force automation) and Ariba (office resource procurement).

As discussed extensively in this report, learning is emerging as mission-critical (what could be more critical than ensuring that your enterprise has the knowledge it needs to sell your products?). Therefore, we believe Digital Think will emerge as a leading solution for outsourced, web-enabled learning solutions.

Digital Think (**www.digitalthink.com**) hosts the entire learning solution: providing registration, tracking, mentoring and billing directly through a standard web browser. DigitalThink currently provides online courses for programmers, developers, system administrators and end users.

Revenue model: Prices range from $99-450 per course, and discounts are offered for buying an entire series. Companies can purchase "pay-as-you-go" contracts allowing their employees to access any of the courses from the DigitalThink library.

Digital Think provides businesses with fully integrated solutions without the hassle of designing the courses. In addition, Digital Think provides an efficient and effective solution for businesses that have an enormous amount of software on their servers and dread dedicating additional space for learning applications.

Firewall issues have fueled an aversion to any outside software on employee desktops, such as plug-ins or players necessary to run training software from some vendors. A web-enabled, hosted solution is therefore compelling today because of Y2K compliance concerns, the proliferation of computer viruses and the preference by IT managers to minimize software installed on the client system.

The importance of firewall issues certainly rings true with major technology companies. In early 1998, CBT Group formed the Internet Security Courseware Consortium (ISCC) with companies such as Cisco, IBM, Intel, Check Point, Netscape and Sun Microsystems. CBT Group has developed a training curriculum, defined by the ISCC, to provide comprehensive courseware for Internet security professionals needing education in the latest firewall technologies.

Somewhat ironically, however, CBT Group's training solution has historically required users to install a player on their desktop in order to run its training titles. While the player enhanced the learning experience by enabling multimedia content, it can upset corporate IT managers who often are called upon to install and maintain a foreign piece of software.

We expect CBT Group to fully circumvent the issues associated with players when the company releases Java-enabled content later this year.

Rick E-Learning and Digital Think

Rick E-Learning is in need of some technical training in C++. His company has an account with DigitalThink, so he logs onto the DigitalThink web site using a screen name he chose during his first training session.

Because he has previously taken courses from DigitalThink, he goes into his personalized locker where he finds his course history as well as other information including detailed scoring information for comparison with other learners in the class.

The courses are self-paced, asynchronous learning, but interaction with other learners and a designated "tutor" is also possible. Rick goes through the individual activities for each unit and module. At the end of each unit he takes a quiz to see how much he has learned. If he stumbles on a concept, he has two options:

- He can send an e-mail to an assigned tutor who will get back to him within 24 hours.
- He can "find" other learners that are also taking the course and ask them questions.

If Rick has to stop the course to answer the phone or go to a meeting, he can log back on and go to his locker, where he will be able to resume the coursework exactly where he left off. Furthermore, areas for chats and discussions on a variety of different topics promote collaboration among learners.

Once enrolled, Rick has six months to take a class, completely at his convenience since the courses are asynchronous.

Saba Software (www.saba.com)

One cannot appreciate the breadth and depth of the learning enterprise without considering how many variables are in play. For example, consider the following partial list of variables that are germane to the learning module for a business:

- Learner profiles that also have multiple dimensions including competency, learning needs and education history.
- Form of payment: credit card, company charge-back, voucher, other.
- Means of registration: the Web, telephone, paper forms, e-mail.
- Content: the lengthy list of titles in the library.
- Content format: web-based, CD-ROM, classroom based.
- Content owner: built internally or licensed from one of hundreds of vendors.
- Relationship of learner to enterprise: employee, reseller, partner (systems integrator), customer.

These seven variables when combined have thousands of permutations. How can a business with enterprisewide learning needs manage the permutations?

The content alone requires an extremely robust solution. Much of the structure of early web sites was flat files with static content linked to HTML pages with no interactive links to a database. Content has become much more interactive, and the files are much larger. Therefore, a web-based solution requires sophistication to handle both the high volume of interaction and the complex architecture of the content. A strong database application must therefore sit behind the web site and that is where we think the Oracle heritage of the Saba founders will pay dividends.

Managing the learning system of an enterprise is a Herculean task that requires software at least as robust as any of the ERP applications we have seen so far. **Saba Software's Education Management System (EMS) is, in our view, the first "learning" systems provider to bridge the gap between the education module of an enterprise and the other enterprise modules such as human resources and finance.**

Saba's EMS enterprise software and the recently introduced LearningOnline Internet-based learning system provide companies with the ability to manage all of the dimensions of the learning module for employees, customers, partners and suppliers.

Saba's EMS software includes functions such as:

- **Registrar**, an Internet service and a call center for registration, payment and build-to-order requests.
- **Comprehensive employee profiling**, which captures learner demographics, skill gaps, certification tracks, interest and career goals. It enables a personalized approach and the creation of individual education plans.
- **Integrated catalog management** unifies all learning products in a comprehensive catalog including instructor-led and self-paced offerings. Enables departments, vendors, partners and outsourcers to manage the offerings within a universal catalog.
- **Competency manager** enables employees to track their own progress and managers to measure individual and learning program effectiveness.
- **TestBuilder** creates online tests.
- **Resource optimization and scheduling**: optimize resource planning, costing, scheduling and utilization for all learning resources including instructors, classrooms, equipment, materials, vendors and inventory.

We believe customer experiences with other enterprise systems (human resources, inventory and finance) will increase the attractiveness of Saba's product offerings because Saba's software systems already treat education as an integral module in the enterprise.

Although investment analysts may struggle now to populate an e-learning comp list with more than a few names, the times are changing. We expect to see several e-learning, public companies vying for position on the "comp" table by late 2000.

An Exciting Opportunity?

Consumers and businesses are increasingly relying on the Internet to access and share information as well as to purchase and sell products and services. IDC estimates that at the end of 1998, more than 142 million people were using the Internet to communicate, participate in discussion forums and obtain information about goods and services. IDC estimates that the user base will grow to 502 million people by the end of 2003.

Yet, learning via the Internet is in its infancy. There are no proven recipes for success. We believe the only sure thing is dramatic market growth and success for web enablers.

In a market fraught with risk, we believe the business-to-business (B2B) side of the market is a safer haven than the business-to-consumer (B2C) side. We share that sentiment with many more knowledgeable Internet pundits who have stated that thesis before us. The substantial growth in B2B e-commerce creates tremendous market opportunities for emerging learning companies. Forrester Research estimates that the B2B e-commerce market (intercompany trade of hard goods over the Internet) will grow from $43 billion in 1998 to more than $1.3 trillion by 2003. We have no idea what this

secular shift means for the learning goods, but in that learning is easier to ship than refrigerators, we are optimistic. The **B2B denizens of e-learning** that we believe are most representative are CBT Group (CBTSY) and private companies such as Saba Software, Digital Think and Blackboard.com.

Our concerns regarding B2C are based on early signs that the winner will likely emerge from a bloody advertising war. The key to their strategy will be rampant spending on advertising in an attempt to capture "eyeballs"—**the visual imagery of which is as horrific as the financial impact may be**.

The **B2C Learning Portals (LPs)** will deploy all of the financial, marketing and advertising arsenal that they can muster to win. The primary combatants at this juncture are Learn2.com (LTWO) and Click2learn (see page 25). Yet, we believe there are dozens of other web-based warriors in the LP arena.

Brand may prove to be the secret weapon. But the brand we are thinking of is not a catchy moniker like Learn2. The brand we are thinking about is Harvard or Stanford. Yet, we doubt that those institutions will risk diluting their brands by offering an easily accessible, easily attainable online degree. However, Harvard and Stanford may mitigate against the brand dilution issue by offering online certificates rather than degrees.

There is one B2C learning portal strategy about which we are excited. It is one that is more conceptual, at this juncture, than real. **We believe learning portals should be built at points at which consumers already transact business.** Build the portal where the visitors are already coming. They came to the site to buy something, and while they were there, they were offered a dose of learning that, by the way, is germane to the purchase they are about to make.

Put the learning portals where it matters, where the lessons are needed.

Amazon, eBay, eToys and others have offered all the evidence that we need that consumers are coming to the Internet to spend money for goods. Conversely, there is little evidence, yet, that consumers are coming to the Internet to learn. **Until the learning portal model is confirmed as profitable, we encourage those who want to build learning portals to build them at existing, heavily trafficked sites.**

We believe Digital Think (see page 124) already offers a dose of learning for Schwab.com customers. Yet we believe the opportunity is much more expansive. For example:

- Why doesn't Amazon offer a series of 15-30-minute speed reading lessons at its web site?
- Why doesn't E*Trade teach its investors about securities laws, short selling or ROI?
- Why doesn't eBay offer a 20-minute lesson on the history of auctions?
- Why doesn't Ford teach us about engine maintenance?
- Why doesn't Disney offer drawing classes at its web site?

Perhaps some of the listed ideas are questionable, but the logic is sound. We believe the business opportunity is for someone with instructional design expertise to be the outsourcer for building the learning portals for these e-businesses. Businesses that build the learning portal for the other e-businesses will enjoy, in our view, a better business model because they will be selling their learning-portal solution directly to the e-business. **Therefore, it's B2B.** Ultimately, the e-business (the client) can decide if it wants to charge its customers for the learning or give it away.

The primary sales pitch to business clients: "Make your e-consumers smarter and watch brand loyalty soar as consumers appreciate the service."

In spite of our general enthusiasm for the e-learning industry, we offer the following caveat: **we have no idea on which horse to bet**. The race is on but we believe the horses have just left the gate.

We believe the learning companies that prosper will be those that control value in at least one of the following: content, technology or channel.

Content

We believe the **depth, breadth and quality** of a company's content enables it to win business because **customers need content**. This may seem to be stating the obvious, but, if so, it needs to be restated because **there are dozens of small ventures that are attempting to enter this industry with no visible strength in content**.

The proliferation of multimedia-capable computers and networking solutions throughout all levels of organizations, advances in PC processing power and in audio and video streaming technologies allow for the delivery of multimedia content in digital format. We believe some day—bandwidth permitting—the winning digital content will incorporate audio, animation, graphics and text to create a stimulating learning experience.

Technology

The technology leg of the triad speaks to the use of enabling technologies to distribute and manage learning content:

- Delivery includes the capacity for synchronous or asynchronous delivery, tools for authoring e-content and the other dimensions discussed at length in the earlier chapters.
- Customers will need a management system to administer the digital library of learning titles. These systems should be able to monitor usage, enroll students, administer assessments and much more.

Channel

Without a strong channel to sell into, no business can flourish. Therefore, it is critical to either build and maintain a channel or to align with someone who owns a channel. Channels include direct or indirect selling. Indirect selling is primarily relying on value-added resellers (VARs) and original equipment manufacturers. Telemarketing and direct mail are common forms of direct selling. However, in our view, nothing can compare with a field sales force that, on a consultative selling basis, can sell an enterprise learning solution to large corporate buyers. This is where the big dollars lie.

The presence of a solution ahead of a compelling problem is not only premature, but also financially destructive. Therefore, companies in e-learning (those discussed in this report) are only good investment values if there are problems to be solved. We believe this report has disclosed a lengthy list of problems that e-learning companies can address.

As with its predecessor (the education industry), the e-learning industry is highly fragmented and nascent. It lacks industry leadership, it is primed for consolidation (perhaps led by existing leaders in technology, see pp. 101-109 /Land of Giants) and it is fraught with risk.

We have listed some investment risks in the following section. Nevertheless, at the end of the proverbial day, we believe the following questions are critical when evaluating any business:

- Are revenues recurring or reversing?
- Is the management team talented or temperamental?
- Are the customers blue chips or brown fodder?
- Is there the potential for operating leverage or operating hemorrhage?
- Is there a predictable and visible revenue stream?
- Is the company in a defensible niche or a defenseless valley?
- Are market trends positive or negative?

If the answers are positive, investors will buy the stock whether the company operates in the learning industry or the dairy industry.

Investment Risks

The enormous market potential and astounding degree of hype surrounding the e-learning market has oftentimes, in our view, distracted investors from some of the risks associated with this market. While the size of the industry makes it appealing, there are many risks involved with e-learning. The concept of distance education is not new, recent derivations—particularly those driven by cutting edge technologies—have dramatically altered what we now consider "distance education." And, consequently, we believe investors need to keep the tremendous potential of e-learning in the perspective of some of the following investment risks and considerations.

The Market for E-Learning Is in Its Early Stages and Continued Development Is Uncertain

The market for e-learning is a new and emerging market. Although e-learning solutions have been available for several years, they currently represent only a small portion of the overall education market. Thus, wannabe e-learning providers' success will depend on the adoption rates of the traditional education and workplace learning markets.

We believe early adopters of e-learning products and services, regardless of where they stand in the lifelong learning process, could be considered the "low-hanging fruit" of the industry and might not be indicative of the majority of potential customers. We believe some segments of the education market are prone to inaction as a result of inertia. It is this inertia that could stifle the development of e-learning as a truly widespread application.

The Sales Cycle Is Lengthy and Can Vary Widely

The sales cycle between initial customer contact and the signing of a contract varies widely, reflecting differences in decision-making processes and budget cycles. As a result, forecasting the timing and amount of sales and actual revenue can be difficult.

Educators and e-learning buyers typically conduct extensive and lengthy evaluations before committing to any product or service. Delays in the sales cycle can result from, among other things, changes in a district's, university's or corporation's budget, the need for approval from both the customer's administration and faculty (in the case of a school) and the need to educate the buyer as to the potential applications, the quality of the learning outcomes and cost savings associated with the services.

In our view, providers without substantial resources may not be able to successfully navigate the treacherous waters of the lengthy sales cycle. Providers usually have little control over these factors, particularly if the product is being introduced into the "traditional" education market where e-learning is still the kid from the wrong side of the tracks, not the straight-A class president.

Large Competitors Loom on the Horizon

The e-learning market is quickly evolving and is subject to rapid technological change—what is cutting edge one minute could be dull the next. The market is highly fragmented, with no single competitor accounting for a dominant market share. Participants vary in size and in the scope and breadth of the products and services they offer. Competitors vary in the different segments of the lifelong learning world (K-12, higher education, workplace learning) as well as the e-learning world (content, services, access, support), and successfully executing competitive strategies can be very dependent upon the market in which the company competes.

In our view, many e-learning start-ups are blurring the line between being a product and a business. We believe companies that derive substantially all of their revenues from single products are at risk, particularly if those products are dependent upon cutting-edge technology, are vulnerable to new products, larger competitors or companies with the ability to provide products **and** services.

The list of potential competitors is extensive, but in general, we believe these types of companies should be considered as rivals, depending upon which sector is considered:

- Systems integrators.
- Publishers.
- Software developers.
- Database developers.
- Telecommunications companies.
- Proprietary colleges.
- Consulting providers.
- Training/performance improvement providers.

We believe the level of competition will continue to increase as current competitors enhance the sophistication of their offerings, as new participants enter the market and as larger players begin to utilize their substantial financial and marketing resources to lock up market share.

E-Learning May Not Be Broadly Accepted by Academics and Educators

Specific to the K-12 and college markets, we believe some academics and educators are and will continue to be opposed to e-learning in principle. Academics and educators have expressed concerns regarding the perceived loss of control over the education process that can result from the outsourcing of e-learning campuses and courses, and the possibility for lower-quality learning outcomes.

We believe some of these critics, particularly college and university professors, have the capacity to influence the market for e-learning services.

Another concern is the issue of intellectual property: Who owns the content of an e-learning course, the teacher or the school? While the issue will, in our view, continue to be hotly debated in the coming years, the crux of the argument will continue to center around simple issues of control and economics—can the teacher take the course elsewhere without restriction, and who gets paid when the course attracts students? Eventually, it is conceivable that the issue could be decided in the court system, which would likely only add to the complexity and ambiguity of the issue.

The E-Learning Market Is Characterized by Rapid Technological Change

The market for hardware, software and services (the core components of e-learning) is characterized by rapid technological change, changes in customer demands and evolving industry standards (or lack thereof). The introduction of services embodying new technologies and the emergence of new industry standards can render existing services obsolete and unmarketable, oftentimes in a very short period of time.

There are an increasing number of laws and regulations pertaining to the Internet. These laws and regulations relate to the liability for information received from or transmitted over the Internet, e-learning content regulation, user privacy, taxation and quality of products and services. Moreover, the applicability to the Internet of many existing laws governing intellectual property ownership and other issues is uncertain and developing.

It is possible that a number of laws and regulations may be adopted with respect to the Internet, relating to characteristics and quality of products and services, as well as content, copyrights, distribution, pricing and user privacy.

Identifying and Meeting the Needs of the E-Learning Buyer

Given the wide variation in needs for different e-learners, accurately determining the features and functionality required by the buyers and then designing and implementing services and products that meet those requirements is not an easy task. We believe this issue gathers an additional layer of complexity when put into the following perspective: many e-learning buyers do not have a clue what they want. This places an added burden on the e-learning provider of spending the time to describe the available options and what those options could do for the buyer's e-learning initiative. This burden can further exacerbate the sales cycle issues mentioned above, putting the ability of undercapitalized providers to complete the project even more at risk.

College and University Accreditation Standards Could Be an Obstacle

Many colleges and universities are accredited by regional accreditation organizations whose approval may be required for the college or university to offer courses over the Internet. While we believe a focus on high-quality learning outcomes will allow colleges and universities to offer Internet courses, the timing of accreditation approval is often difficult to judge.

Trends in Transactions

As in any nascent market, early indications of future structure are often previewed by the types and structures of transactions between market participants. In our view, the e-learning market is no different.

Banc of America Securities

Many of the transactions to date in the e-learning market have been of "established" companies acquiring early-stage concept companies. The acquirors are usually looking for content, technology or channel (heretofore referred to as the "triad of triumph in training"). The targets may:

- Own content **(content is king!)** but are struggling to scale distribution.
- Own technology but are struggling to finance refinements and improve productization.
- Own channel but are unable to find enough product to exploit its development.

Many e-learning companies are in their second and third rounds of financing, suggesting the possibility of a strong pipeline of initial public offerings in the next 12-24 months.

Valuations in both private and public markets, not surprisingly, show significant variation. We believe the differences in valuations are being driven by the following characteristics.

Public Market	Private Market
Earnings Track Record	Unique Competitive Advantage
Predictability, Visibility of the business model	Specific Customer Relationships
Customer Demographics	Market Size
Market Size	Investors
Liquidity	Previous Financing Valuation

Source: Banc of America Securities LLC.

The following tables are meant as a broad overview only, not as a comprehensive survey.

Banc of America Securities

Company (1)	Type of Transaction	Date	Company (2)	Size	Investors
7th Street.com	Acquisition	6/99	ViaGrafix	10,700,000 shares issued	
Advantage Learning System	Acquisition	6/99	Generation21 Learning Systems LLC	Pretax charge of $400,000, pooling of interests	
Apollo Group and Hughes Network Services	Acquisition	8/98	One Touch Systems		
Asymetrix	Acquisition	8/99	Pixelmedia Visual Communications		
Bell & Howell	Separated K-12 Internet business and combined with Infonautics' Electronic Library	7/99	Infonautics		
Blackboard Inc.	2nd Round Funding	6/99		$12.2 million	Carlyle Venture Partners, Merrill Lynch KECALP, Novak-Biddle Venture Partners, Internet Capital Group, Aurora Funds
CBT Group	Acquisition	6/99	Knowledge Well	4 million shares issued	
Centra	Financing	5/99		$13.5 million	Goldman Sachs Group, Inc. and HarbourVest Partners, Polaris Venture Partners; Burr, Egan and Deleage & Company; Commonwealth Capital; North Bridge Venture Partners; and Scripps Ventures
Cinar	Acquired	4/99	Edustar	$40.2 million	
EarthWeb Inc	Licensing deal for content	7/99	JWA, Artech, Digital Press, Sybex		
eCollege.com	Financing	2/99		$15 million	Media One Interactive Services, VSI Holdings, New World Equities, Blumenstein/ Thorne Information Partners
Embanet Corp.	Partnership	5/99	IntraLearn Software		
ExecuTrain	Partnership	6/99	Interactive Learning International Carp.		
Family Education Network	Financing	4/99		$51 million	Harcourt General, Jostens, Intel, America Online, Sprout Group, Morningside Group
fastWEB.com	Acquisition	6/98	FinAid		
Harcourt General	Acquisition		Knowledge Communications Inc	Cash	

Banc of America Securities

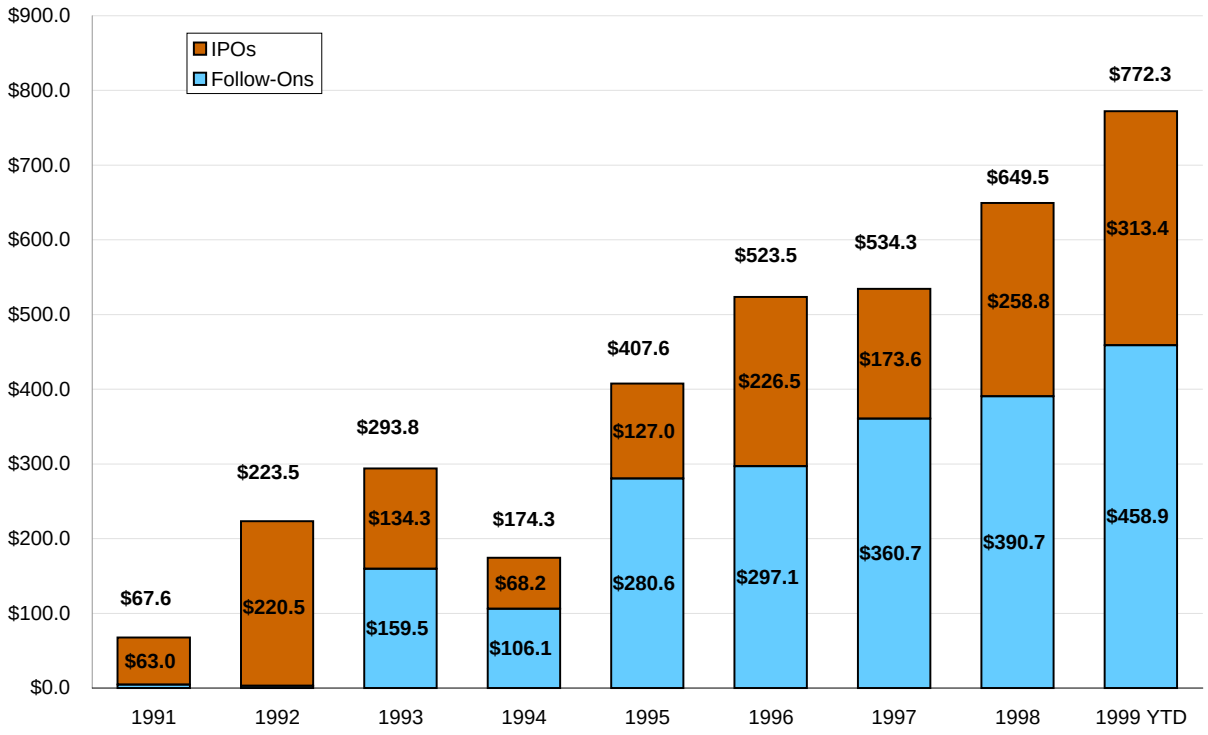
Company (1)	Type of Transaction	Date	Company (2)	Size	Investors
Infonautics	Partnership to deliver professional development	8/99	WebED		
JuniorNet	Financing	4/99		$70 million	RCN, Boston Capital Ventures, New World Ventures, Euclid Partners
Learn2.com	Name Change	7/99	7th Street.com		
Lightspan Corporation	partnership	5/99	Academic Systems		
Lotus	Acquisition	7/99	Macromedia's Pathware Software		
MaMaMedia	funding	3/99			Placement Agent-BancBoston Robertson Stephens
MC2 Learning	Acquisition	6/99	Softarc Inc		
MC2 Learning	Private Placement Offering	6/99		2,306,682 Special Warrants	
National Computer System	Acquisition	5/99	Novanet	$20 million cash	
National Technological University Corporation	partnership	6/99	The Business Channel		
NetLibrary	2nd Round Funding	5/99		$25 million	The Sprout Group, Barnard & company, Sequel Venture Partners, Marquette Ventures, Anschutz Family Investment Company.
NetSchools	Funding	5/99	APV Tech Partners	$19.4 million	David Sturm, Cherry Creek NetSchools Investors, LCC
Ripplewood	Acquired	6/99	Jostens Learning	$100 million	
Teach.com	Financing	6/99		$10 million	
Transparent Language	Financing	5/99		$7.7 million	Flanders Language Valley Fund
University Learning Technology	Purchase	5/99	WebCT	$10million	
University Learning Technology	Partnership	6/99	Blossom Software		
University Learning Technology	Partnership	6/99	ZineZone		
USWeb Learning	Funding	4/98		$12 million	Storie-Culter Capital Partners, Hambrecht & Quist, Wheatly Partners, Asia Technology, and USWeb Corporation

Company (1)	Type of Transaction	Date	Company (2)	Size	Investors
Wwwrr	Acquisition	6/99	Minnesota Education Technology Alliance		
Yipinet	2nd Round Funding	5/99		$12.5 million	Rader Reinfrank And Co.
ZAPME!	Lease Financing	6/99		$20 million	Hewlett Packard, Hambrecht & Quist, Xerox, Leasing Technologies International, Imperial Bank, a subsidiary of Imperial Bancorp, Terminal Marketing and Transamerica
ZAPME!	Equity Investment	6/99		$30 million	QuestMark Partners, Ares Management LLP, Gilat Satellite Networks Ltd, Sylvan Learning Systems, Inc, and Headwater Capital

Quantitative Picture of the Education Market

The information contained in the following charts and tables represents a quantitative picture of various companies within the education sector. The data is not meant to be all encompassing, but rather to provide the reader with a sense of the current state of the market.

RECENT EQUITY ISSUANCE BY SELECTED EDUCATION COMPANIES



Source: Securities Data Corporation.

** As of 8/19/99. Includes issues in registration.*

EDUCATION INITIAL PUBLIC OFFERINGS—1991 TO PRESENT

	Date	Is	Amount	Price	to Price	Shares Offered	to Offer	Offer Price	8/19/99	to Present	Managers
1	4/25/91	Tesseract Group	$6.0	$4.00	0.0%	1,500,000	20.0%	$4.00	$3.16	(21.1%)	KINNARD
2	6/21/91	DeVry	21.2	10.00	(23.1%)	2,120,000	0.0%	1.25	21.63	1,630.0%	SSB//FBC
3	11/25/91	Broderbund Software	35.8	11.00	7.3%	3,257,184	0.0%	5.50	NA	NA	DB ALEX-BROWN//BB ROBERTSON-S
		Total/Average	**$63.0**		**(5.3%)**		**6.7%**			**804.5%**	
4	2/24/92	Scholastic	$108.0	$22.50	15.4%	4,800,000	11.6%	$22.50	$41.13	82.8%	GS//DB ALEX-BROWN
5	6/2/92	Franklin Covey	77.5	15.50	3.3%	5,000,000	0.0%	15.50	7.81	(49.6%)	MERRILL//SSB
6	12/15/92	Res-Care	15.0	10.00	0.0%	1,500,000	7.1%	4.44	19.00	327.5%	BRADFORD//HILLIARD
7	12/23/92	TRO Learning	20.0	10.00	11.1%	2,000,000	0.0%	10.00	6.38	(36.3%)	VOLPE-WELTY
		Total/Average	**$220.5**		**7.5%**		**4.7%**			**81.1%**	
8	3/13/93	Davidson & Associates	$26.0	$13.00	18.2%	2,000,000	0.0%	$6.50	NA	NA	DLJ//SBH
9	7/15/93	Steck-Vaughn Publishing	27.8	12.00	0.0%	2,320,000	0.0%	12.00	NA	NA	BB ROBERTSON-S//HAMBRECHT
10	10/5/93	Gartner Group	58.5	22.00	4.8%	2,660,000	15.7%	2.75	22.13	704.5%	MSDW//DB ALEX-BROWN//GS
11	12/9/93	Sylvan Learning Systems	22.0	11.00	(12.0%)	2,000,000	0.0%	4.89	21.38	337.2%	DB ALEX-BROWN//BB ROBERTSON-S
		Total/Average	**$134.3**		**2.7%**		**3.9%**			**520.9%**	
12	2/3/94	Youth Services International	$13.0	$10.00	(9.1%)	1,300,000	0.0%	$6.67	NA	NA	FERRIS-BAKER
13	12/5/94	Apollo Group	35.2	11.00	(8.3%)	3,200,000	0.0%	1.63	24.13	1,376.7%	SSB//DB ALEX-BROWN
14	12/20/94	ITT Educational Services	20.0	10.00	(37.5%)	2,000,000	0.0%	4.44	18.69	320.5%	SSB//LAZ
		Total/Average	**$68.2**		**(18.3%)**		**0.0%**			**848.6%**	
15	4/13/95	CBT Group	$36.8	$16.00	23.1%	2,300,000	0.0%	$4.00	$23.13	478.1%	DB ALEX-BROWN//BB ROBERTSON-S
16	5/31/95	Computer Learning Centers	17.6	8.00	(20.0%)	2,200,000	10.0%	2.67	4.75	78.1%	BB ROBERTSON-S//PIPER-J
17	8/3/95	Ambassadors International	18.0	9.00	(10.0%)	2,000,000	(2.9%)	9.00	13.63	51.4%	BA SECURITIES//PIPER-J
18	11/13/95	New Horizon Kids Quest	5.0	5.00	0.0%	1,000,000	0.0%	5.00	1.53	(69.4%)	EQUITY-SEC
19	12/6/95	Learning Tree International	36.0	12.00	0.0%	3,000,000	0.0%	8.00	12.81	60.2%	BB ROBERTSON-S//PIPER-J/M_KANE
20	12/20/95	ForeFront Group, Inc.	13.6	8.00	0.0%	1,700,000	0.0%	8.00	NA	NA	WOODRUFF//CAPITAL-WEST
		Total/Average	**$127.0**		**(1.2%)**		**1.2%**			**119.7%**	
21	2/1/96	Childtime Learning Centers	$18.7	$11.00	4.8%	1,700,000	0.0%	$11.00	$11.38	3.4%	WM-BLAIR
22	3/20/96	Logal Educational Software	15.2	8.00	(27.3%)	1,900,000	0.0%	8.00	0.50	(93.8%)	LEH//OPPENHEIMER
23	3/21/96	Mastering, Inc.	52.0	13.00	18.2%	4,000,000	9.6%	13.00	NA	NA	SSB//DLJ
24	7/25/96	Strayer Education	30.0	10.00	0.0%	3,000,000	0.0%	6.67	22.56	238.4%	LEGG-MASON-WW
25	10/29/96	Quest Educational Corporation	24.0	10.00	(23.1%)	2,400,000	(11.1%)	10.00	9.63	(3.8%)	SSB//BA SECURITIES
26	10/31/96	Education Management Corp.	68.0	15.00	(3.2%)	4,530,000	0.0%	7.50	12.75	70.0%	CSFB//SSB/CHICAGO
27	11/25/96	UOL Publishing, Inc.	18.6	13.00	(13.3%)	1,430,000	0.0%	13.00	3.56	(72.6%)	FRIEDMAN BILLINGS
		Total/Average	**$226.5**		**(6.3%)**		**(0.2%)**			**23.6%**	
28	6/17/97	ARIS Corporation	$30.3	$15.00	7.1%	2,020,800	0.0%	$15.00	$6.38	(57.5%)	DMG//BA SECURITIES//PIPER-J
29	8/12/97	CorporateFamily (Bright Horizons)	23.5	10.00	11.1%	2,350,000	0.0%	10.00	14.06	40.6%	BA SECURITIES//BRADFORD
30	9/23/97	EduTrek International, Inc.	36.4	14.00	7.7%	2,600,000	0.0%	14.00	2.69	(80.8%)	SSB//ROBINSON-HUMPHREY
31	9/24/97	Advantage Learning Systems, Inc.	44.8	16.00	23.1%	2,800,000	0.0%	8.00	26.38	229.7%	PIPER-J//BA SECURITIES
32	11/6/97	Bright Horizons Children's Centers, Inc.	38.6	13.00	18.2%	2,970,000	10.0%	13.00	NA	NA	DB ALEX BROWN//EVEREN
		Total/Average	**$173.6**		**13.4%**		**2.0%**			**33.0%**	
33	1/28/98	Career Education Corp.	$45.6	$16.00	14.3%	2,850,000	0.0%	$16.00	$29.75	85.9%	CSFB//SSB
34	3/3/98	Viagrafix	28.6	13.00	18.2%	2,200,000	0.0%	13.00	6.09	(53.1%)	SW SECURITIES
35	4/28/98	Provant, Inc.	38.9	13.00	8.3%	2,990,000	15.0%	13.00	13.75	5.8%	BA SECURITIES//PIPER-J/SSB
36	5/4/98	Caliber Learning Network, Inc.	79.8	14.00	7.7%	5,700,000	5.6%	14.00	3.38	(75.9%)	DB ALEX BROWN//BA SECURITIES
37	6/10/98	School Specialty, Inc.	32.9	15.50	3.3%	2,125,000	0.0%	15.50	13.38	(13.7%)	GOLDMAN//BA SECURITIES/SSB/PIPER-J
38	6/11/98	Asymetrix Learning Systems, Inc.	33.0	11.00	0.0%	3,000,000	0.0%	11.00	6.56	(40.3%)	BA SECURITIES//BB ROBERTSON-S/HAMBRECHT
		Total/Average	**$258.8**		**8.6%**		**3.4%**			**(15.2%)**	
39	2/4/99	Corinthian Colleges, Inc.	$48.6	$18.00	5.9%	2,700,000	0.0%	$18.00	$16.13	(10.4%)	SSB//CSFB/PIPER-J
40	3/8/99	Argosy Education Group	28.0	14.00	(6.7%)	2,000,000	0.0%	14.00	7.63	(45.5%)	SSB//ABN-AMRO
41	7/21/99	Scientific Learning Company	36.8	16.00	6.7%	2,300,000	0.0%	16.00	16.06	0.4%	MERRILL//WEISEL/PAC GROWTH
		Total/Average	**$313.4**		**2.0%**		**0.0%**			**(18.5%)**	
		Overall Total/ Average	**$1,585.3**		**1.1%**		**2.2%**			**158.8%**	

Source: Banc of America Securities LLC.

EDUCATION FOLLOW-ON OFFERINGS—1991 TO PRESENT

Offer Date	Issuer	Offering Amount	Offer Price	% Δ File to Price	Total Global Shares Offered	% Δ File to Offer	Split Adj. Offer Price	Stock Price 8/19/99	% Δ Offer to Present	Managers
10/10/91	Children's Discovery Centers	$4.6	$6.50	(18.8%)	700,000	40.0%	$6.50	NA	NA	ADVEST
6/23/92	Tesseract Group	$3.0	$7.00	(44.6%)	425,000	(62.4%)	$3.50	$3.16	(9.8%)	DAIN-BOS//KINNARD
3/17/93	DeVry	$39.6	$22.00	(3.3%)	1,800,000	0.0%	$5.50	$21.63	293.2%	FBC//SSB/ADVEST/CHICAGO
4/30/93	Tesseract Group	31.7	22.25	(6.8%)	1,425,000	0.0%	22.25	3.16	(85.8%)	PIPER-J//DAIN-BOS
6/23/93	Franklin Covey	77.5	24.75	1.0%	3,130,000	10.6%	24.75	7.81	(68.4%)	MERRILL//SSB
12/13/93	Children's Discovery Centers	10.7	8.00	(5.9%)	1,343,125	0.0%	8.00	NA	NA	ADVEST
	Total/Average	**$159.5**		**(3.7%)**		**2.7%**			**46.3%**	
1/24/94	Franklin Covey	$85.6	$34.25	5.8%	2,500,000	0.0%	$34.25	$7.81	(77.2%)	MERRILL//SSB
12/9/94	Children's Discovery Centers	20.5	10.25	(19.6%)	2,000,000	0.0%	10.25	NA	NA	MABON-SEC//ADVEST
	Total/Average	**$106.1**		**(6.9%)**		**0.0%**			**(77.2%)**	
6/26/95	The Learning Company	$79.5	$28.88	16.1%	2,754,000	13.6%	$28.88	NA	NA	BA SECURITIES/ADAMS-H/CSFB
8/3/95	Edmark	36.8	37.75	17.4%	975,000	0.0%	25.17	NA	NA	BT ALEX-BROWN//BA SECURITIES/VOLPE
9/13/95	CBT Group	91.6	44.25	5.4%	2,070,000	0.0%	11.06	23.13	109.0%	BT ALEX-BROWN//BB ROBERTSON-S
9/29/95	Industrial Training	10.2	9.75	(9.3%)	1,050,000	0.0%	9.75	4.63	(52.6%)	FERRIS-BAKER
12/13/95	Sylvan Learning Systems	62.5	25.00	(4.8%)	2,500,000	40.7%	11.11	21.38	92.4%	BT ALEX-BROWN//BB ROBERTSON-S/SSB
	Total/Average	**$280.6**		**4.9%**		**10.9%**			**49.6%**	
1/18/96	Apollo Group	$85.9	$31.25	(9.7%)	2,750,000	0.0%	$9.26	$24.13	160.6%	SSB//BT ALEX-BROWN/BA SECURITIES
8/15/96	Children's Comprehensive	36.8	16.00	(23.8%)	2,300,000	(8.0%)	16.00	6.31	(60.5%)	BA SECURITIES//EQUITABLE/LEH
9/20/96	Learning Tree International	67.8	30.00	6.2%	2,260,000	13.0%	20.00	12.81	(35.9%)	BB ROBERTSON-S//PIPER-J/SSB/M-KANE
9/27/96	National TechTeam	77.3	25.75	98.1%	3,000,000	0.0%	25.75	5.50	(78.6%)	SSB//BAIRD
10/3/96	Computer Learning Centers	29.2	25.75	(7.6%)	1,134,784	0.0%	8.58	4.75	(44.7%)	BB ROBERTSON-S//PIPER-J
	Total/Average	**$297.1**		**12.6%**		**1.0%**			**(11.8%)**	
3/26/97	DeVry	$37.0	$21.00	(15.2%)	1,760,000	(12.0%)	$10.50	$21.63	106.0%	SSB//CHICAGO/BT ALEX-BROWN/CSFB
4/15/97	Res-Care	38.4	15.00	(20.0%)	2,561,000	(14.6%)	10.00	19.00	90.0%	BRADFORD//BA SECURITIES/EQUITABLE
4/17/97	Strayer Education	24.2	21.00	(12.5%)	1,150,000	0.0%	14.00	22.56	61.2%	SSB//LEGG-MASON-WW
7/31/97	Sylvan Learning Systems	187.5	37.50	5.6%	5,000,000	5.3%	25.00	21.38	(14.5%)	BT ALEX-BROWN//BA SECURITIES/MERRILL
11/10/97	Education Management Corp.	73.7	26.00	(6.8%)	2,833,409	(3.4%)	13.00	12.75	(1.9%)	CSFB//SSB/CHICAGO
	Total/Average	**$360.7**		**(9.8%)**		**(5.0%)**			**48.1%**	
4/23/98	Ambassadors International	$80.2	$26.25	2.9%	3,056,700	37.8%	$26.25	$13.63	(48.1%)	BA SECURITIES//ALLEN/DLJ/DAVIDSON
6/3/98	ITT Educational Services, Inc.	293.0	24.25	(6.1%)	11,350,000	0.0%	24.25	18.69	(22.9%)	CSFB//BEAR/MERRILL/MSDW/SSB
7/2/98	Quest Educational Corporation	17.5	8.75	(28.6%)	2,000,000	(20.0%)	8.75	9.63	10.0%	SSB//LEGG-MASON-WW
	Total/Average	**$390.7**		**(10.6%)**		**5.9%**			**(20.3%)**	
1/26/99	ITT Educational Services, Inc.	$270.3	$34.00	(0.6%)	7,949,200	13.6%	$34.00	$18.69	(45.0%)	CSFB/SSB//BA SECURITIES/BEAR/BT ALEX-BROWN/MSDW
1/28/99	Provant, Inc.	78.2	19.50	(6.0%)	4,007,750	16.2%	19.50	13.75	(29.5%)	ML//SSB/PIPER-J/BBRS
3/17/99	Career Education Corp.	66.7	29.00	(4.9%)	2,300,000	15.0%	29.00	29.75	2.6%	CSFB//BBRS/SSB
4/12/99	School Specialty	43.8	18.25	(17.3%)	2,400,000	(20.0%)	18.25	13.44	(26.4%)	GS//SSB/PIPER-J
	Total/Average	**$458.9**		**(7.2%)**		**6.2%**			**(24.6%)**	
	Overall Total/Average	**$ 2,061.2**		**(3.8%)**		**2.2%**			**8.9%**	

Source: Banc of America Securities LLC.

STOCK PERFORMANCE OF SELECTED EDUCATION COMPANIES

Issuer	Symbol	%Δ 1996	%Δ 1997	%Δ 1Q 1998	%Δ 2Q 1998	%Δ 3Q 1998	%Δ 4Q 1998	%Δ 1998	%Δ 1Q 1999	%Δ 2Q 1999	Price on 8/19/99	%Δ 3Q 1999
Post-Secondary EMOs												
Apollo Group, Inc.	APOL	**92.3%**	**41.3%**	1.9%	3.1%	(15.7%)	21.5%	**7.5%**	(11.8%)	(11.1%)	$24.13	(9.2%)
Argosy Education Group, Inc.	ARGY	**-----**	**-----**	-----	-----	-----	-----	**-----**	(38.4%)	(7.2%)	7.63	(4.7%)
Career Education Corp.	CECO	**-----**	**-----**	37.5%	11.4%	(10.7%)	37.1%	**87.5%**	15.4%	(2.3%)	29.75	(12.0%)
Computer Learning Centers	CLCX	**235.3%**	**222.4%**	(45.3%)	48.5%	(68.1%)	(15.7%)	**(78.2%)**	(20.6%)	(7.1%)	4.75	(3.8%)
Corinthian Colleges	COCO	**-----**	**-----**	-----	-----	-----	-----	**-----**	22.2%	(14.2%)	16.13	(14.6%)
DeVry, Inc.	DV	**74.1%**	**35.6%**	7.3%	28.3%	6.8%	30.7%	**92.2%**	(5.3%)	(22.8%)	21.63	(3.4%)
Education Management	EDMC	**40.0%**	**47.6%**	9.7%	(3.3%)	8.0%	33.1%	**52.4%**	30.2%	(32.5%)	12.75	(38.6%)
EduTrek International, Inc.	EDUT	**-----**	**85.7%**	(14.9%)	10.7%	(71.4%)	(17.9%)	**(77.9%)**	19.6%	(30.9%)	2.69	(43.4%)
ITT Educational Services, Inc.	ESI	**111.3%**	**(3.5%)**	25.5%	15.2%	(0.8%)	6.3%	**52.4%**	10.5%	(30.6%)	18.69	(28.3%)
Quest Educational Corporation	QEDC	**11.3%**	**(27.0%)**	43.1%	(21.5%)	(28.8%)	53.8%	**23.1%**	(8.8%)	15.8%	9.63	(8.9%)
Strayer Education, Inc.	STRA	**130.0%**	**115.2%**	0.8%	9.0%	(27.9%)	34.9%	**6.8%**	5.0%	(17.1%)	22.56	(26.5%)
Whitman Education Group	WIX	**103.5%**	**(20.7%)**	(1.1%)	(18.7%)	(27.0%)	(11.1%)	**(47.8%)**	25.0%	60.0%	3.00	(50.0%)
Average		**99.7%**	**55.2%**	**6.4%**	**8.3%**	**(23.6%)**	**17.3%**	**11.8%**	**3.6%**	**(8.3%)**		**(20.3%)**
Educational Products & Services												
Advantage Learning Systems, Inc.	ALSI	**-----**	**33.6%**	60.8%	(20.4%)	38.8%	73.0%	**207.6%**	(5.5%)	(28.8%)	$26.38	19.2%
Ambassadors International	AMIE	**(3.8%)**	**108.0%**	35.3%	14.9%	(40.6%)	(18.1%)	**(24.4%)**	9.7%	(8.1%)	13.63	(8.4%)
Bright Horizons Family Solutions	BFAM	**-----**	**115.0%**	23.8%	(6.1%)	(15.0%)	27.1%	**25.6%**	(19.0%)	(13.7%)	14.06	(25.5%)
Childtime Learning Centers	CTIM	**(14.8%)**	**46.7%**	20.0%	23.5%	(18.4%)	(12.0%)	**6.4%**	(12.4%)	15.1%	11.38	(22.9%)
National Computer Systems, Inc.	NLCS	**35.1%**	**38.2%**	27.7%	6.7%	22.9%	25.4%	**109.9%**	(33.8%)	37.8%	36.25	7.4%
School Specialty	SCHS	**-----**	**-----**	-----	5.6%	(6.1%)	39.0%	**37.9%**	(8.5%)	(17.9%)	13.44	(16.3%)
Scientific Learning Corporation	SCIL	**-----**	**-----**	-----	-----	-----	-----	**-----**	-----	-----	16.06	0.4%
Sylvan Learning Systems, Inc.	SLVN	**43.7%**	**36.8%**	20.8%	4.2%	(28.6%)	30.5%	**17.3%**	(10.2%)	(0.7%)	21.38	(21.4%)
Average		**15.0%**	**63.1%**	**31.4%**	**4.1%**	**(6.7%)**	**23.6%**	**54.3%**	**(11.4%)**	**(2.3%)**		**(8.4%)**
Educational Publishers												
Harcourt General, Inc.	H	**10.1%**	**18.7%**	1.1%	7.4%	(18.7%)	9.9%	**(2.9%)**	(16.7%)	16.4%	$47.19	(8.5%)
Houghton Mifflin	HTN	**31.7%**	**35.5%**	(16.9%)	(0.00)	(0.02)	0.52	**23.1%**	(0.8%)	0.4%	46.63	(0.9%)
McGraw Hill	MHP	**5.9%**	**60.4%**	2.8%	7.1%	(2.8%)	28.5%	**37.7%**	7.0%	(1.0%)	51.25	(5.0%)
Scholastic Corporation	SCHL	**(13.5%)**	**(44.2%)**	12.7%	(5.6%)	6.6%	26.2%	**43.0%**	(8.9%)	3.6%	41.13	(18.8%)
Average		**8.6%**	**17.6%**	**(0.1%)**	**2.1%**	**(4.3%)**	**29.3%**	**25.2%**	**(4.8%)**	**4.8%**		**(8.3%)**
Training and Development												
ARIS Corporation	ARSC	**-----**	**40.0%**	41.7%	(5.9%)	(30.4%)	(38.8%)	**(43.2%)**	(29.8%)	(0.7%)	$6.38	(23.3%)
Asymetrix	ASYM	**-----**	**-----**	-----	(18.2%)	(0.29)	(31.4%)	**(60.2%)**	7.1%	(12.0%)	6.56	59.1%
Caliber Learning Network Inc.	CLBR	**-----**	**-----**	-----	9.8%	(60.6%)	(29.9%)	**(69.6%)**	(5.9%)	18.8%	3.38	(28.9%)
CBT Group	CBTSY	**2.4%**	**51.4%**	26.0%	3.4%	(74.8%)	10.2%	**(63.8%)**	(23.1%)	44.3%	23.13	40.2%
DA Consulting Group	DACG	**-----**	**-----**	-----	(0.9%)	6.1%	43.4%	**50.9%**	(54.9%)	(39.2%)	5.50	(8.3%)
Franklin Covey	FC	**7.7%**	**4.8%**	10.5%	(20.8%)	0.02	(14.4%)	**(23.9%)**	(46.3%)	(18.1%)	7.81	5.9%
GP Strategies	GPX	**(9.5%)**	**79.0%**	24.8%	(15.5%)	(31.6%)	50.0%	**8.1%**	18.3%	(50.7%)	8.56	(2.1%)
Learning Tree International	LTRE	**183.2%**	**(2.1%)**	(23.4%)	(9.0%)	(36.3%)	(29.3%)	**(68.6%)**	10.3%	9.4%	12.81	17.1%
New Horizons Worldwide	NEWH	**173.2%**	**2.7%**	(8.7%)	48.6%	(14.7%)	39.1%	**60.9%**	(14.1%)	24.2%	17.63	(10.8%)
Provant, Inc.	POVT	**-----**	**-----**	-----	41.3%	(19.0%)	46.2%	**67.3%**	(17.8%)	(12.9%)	13.75	(11.6%)
RWD Technologies	RWDT	**-----**	**66.3%**	(19.4%)	35.5%	(4.8%)	(3.9%)	**0.0%**	(19.4%)	(40.1%)	8.94	(14.4%)
Average		**71.4%**	**34.6%**	**7.4%**	**6.2%**	**(26.7%)**	**3.8%**	**(12.9%)**	**(15.9%)**	**(7.0%)**		**2.1%**
Overall Average		**60.2%**	**42.3%**	**13.0%**	**2.2%**	**(19.9%)**	**17.1%**	**11.2%**	**(6.8%)**	**(5.1%)**		**(9.2%)**
Russell 2000	RUT	**14.8%**	**20.5%**	10.0%	(0.05)	(0.21)	0.16	**(3.4%)**	(5.8%)	15.1%	$432.77	(5.4%)
NationsBanc Montgomery Securities Growth Stock Index (1)	NMSGI	**19.7%**	**6.0%**	18.9%	(2.4%)	(17.4%)	37.1%	**31.5%**	13.4%	11.7%	156.58	(11.3%)
NASDAQ Composite	COMP	**22.7%**	**21.6%**	16.9%	3.2%	(10.6%)	29.5%	**39.6%**	12.3%	9.1%	2,621.43	(2.4%)

(1) NMSGI indexed from 12/31/96.
Source: FactSet. Prices are adjusted for stock splits.

VALUATION ANALYSIS OF SELECTED EDUCATION COMPANIES

Company	Ticker Symbol	Stock Price 8/19/99	Twelve Month Price Range			% Δ from 12 Month Low	% Δ from 12 Month High
Post-Secondary EMOs							
Apollo Group, Inc.	APOL	$24.13	$20.13	-	$43.25	19.9%	(44.2%)
Argosy Education Group, Inc.	ARGY	7.63	6.13	-	14.50	24.5%	(47.4%)
Career Education Corp.	CECO	29.75	14.13	-	39.00	110.6%	(23.7%)
Computer Learning Centers	CLCX	4.75	3.69	-	17.38	28.8%	(72.7%)
Corinthian Colleges	COCO	16.13	12.50	-	25.00	29.0%	(35.5%)
DeVry Inc.	DV	21.63	16.06	-	31.88	34.6%	(32.2%)
Education Management	EDMC	12.75	12.50	-	31.75	2.0%	(59.8%)
Edutrek International, Inc.	EDUT	2.69	2.38	-	12.25	13.2%	(78.1%)
ITT Educational Services, Inc.	ESI	18.69	17.75	-	40.38	5.3%	(53.7%)
Quest Educational Corporation	QEDC	9.63	5.25	-	12.00	83.3%	(19.8%)
Strayer Education, Inc.	STRA	22.56	21.19	-	41.25	6.5%	(45.3%)
Whitman Education Group	WIX	3.00	2.50	-	6.13	20.0%	(51.0%)
Average						**31.5%**	**(47.0%)**
Median						**22.2%**	**(46.4%)**
Educational Products & Services							
Advantage Learning Systems, Inc.	ALSI	$26.38	$11.88	-	$43.00	122.1%	(38.7%)
Ambassadors International	AMIE	13.63	11.81	-	24.38	15.3%	(44.1%)
Bright Horizons Family Solutions	BFAM	14.06	13.88	-	28.63	1.4%	(50.9%)
Childtime Learning Centers	CTIM	11.38	10.25	-	19.50	11.0%	(41.7%)
National Computer Systems, Inc.	NLCS	36.25	20.88	-	39.13	73.7%	(7.3%)
School Specialty	SCHS	13.44	10.75	-	25.88	25.0%	(48.1%)
Scientific Learning Corporation (2)	SCIL	16.06	15.88	-	21.00	1.2%	(23.5%)
Sylvan Learning Systems, Inc.	SLVN	21.38	17.13	-	34.63	24.8%	(38.3%)
Average						**34.3%**	**(36.6%)**
Median						**20.1%**	**(40.2%)**
Educational Publishers							
Harcourt General Inc.	H	$47.19	$41.88	-	$56.06	12.7%	(15.8%)
Houghton Mifflin Company	HTN	46.63	29.88	-	52.50	56.1%	(11.2%)
McGraw-Hill Companies, Inc.	MHP	51.25	36.13	-	60.75	41.9%	(15.6%)
Scholastic Corporation	SCHL	41.13	35.50	-	59.50	15.8%	(30.9%)
Average						**31.6%**	**(18.4%)**
Median						**28.9%**	**(15.7%)**
Training and Development							
ARIS Corporation	ARSC	$6.38	$6.13	-	$25.63	4.1%	(75.1%)
Asymetrix	ASYM	6.56	2.88	-	11.63	128.3%	(43.5%)
Caliber Learning Network	CLBR	3.38	1.88	-	9.69	80.0%	(65.2%)
CBT Group	CBTSY	23.13	6.69	-	60.00	245.8%	(61.5%)
DA Consulting Group	DACG	5.50	4.94	-	21.88	11.4%	(74.9%)
Franklin Covey	FC	7.81	5.94	-	20.63	31.6%	(62.1%)
GP Strategies	GPX	8.56	6.88	-	19.13	24.5%	(55.2%)
Learning Tree International	LTRE	12.81	6.00	-	15.75	113.5%	(18.7%)
New Horizons Worldwide	NEWH	17.63	11.00	-	20.25	60.2%	(13.0%)
Provant, Inc.	POVT	13.75	9.50	-	24.75	44.7%	(44.4%)
RWD Technologies	RWDT	8.94	8.50	-	23.63	5.1%	(62.2%)
Average						**68.1%**	**(52.3%)**
Median						**44.7%**	**(61.5%)**

Source: Banc of America Securities LLC.

VALUATION ANALYSIS (CONTINUED)

Company	LTM Ended	Shares O/S	Market Cap.	Aggreg. Value	Aggregate Value/LTM Revs.	Aggregate Value/LTM EBITDA (1)	Aggregate Value/LTM EBIT (1)	Debt / Tot. Cap.	LTM Margins EBITDA (1)	LTM Margins EBIT (1)	LTM Margins Net (1)	LTM Revs.
Post-Secondary EMOs												
Apollo Group, Inc.	5/31/99	77.3	$1,863.9	$1,794.2	3.8x	17.4x	21.0x	1.9%	22.0%	18.2%	11.7%	$469.9
Argosy Education Group, Inc.	**5/31/99**	**6.9**	**52.6**	**36.3**	**1.0x**	**4.8x**	**5.8x**	**12.2%**	**21.0%**	**17.6%**	**11.0%**	**35.7**
Career Education Corp.	3/31/99	7.8	232.5	220.8	1.4x	9.3x	16.7x	16.0%	14.8%	8.3%	5.1%	160.1
Computer Learning Centers	4/30/99	17.5	83.1	83.3	0.6x	15.5x	NM	7.6%	3.7%	NM	NM	144.3
Corinthian Colleges	3/31/99	10.3	166.8	158.3	1.3x	10.5x	13.6x	6.5%	11.9%	9.2%	4.0%	126.1
DeVry Inc.	3/31/99	69.4	1,500.9	1,443.4	3.6x	19.1x	24.6x	0.0%	18.8%	14.6%	9.1%	400.6
Education Management	3/31/99	29.5	375.9	364.7	1.5x	7.8x	11.8x	1.4%	18.6%	12.3%	7.3%	251.3
Edutrek International, Inc.	6/30/99	10.7	28.9	17.7	0.3x	NM	NM	1.4%	NM	NM	NM	53.0
ITT Educational Services, Inc.	6/30/99	24.9	465.9	434.1	1.4x	9.5x	12.1x	0.0%	15.1%	11.8%	7.9%	303.8
Quest Educational Corporation	6/30/99	8.2	79.3	92.4	0.9x	5.8x	7.9x	26.6%	16.1%	11.9%	6.3%	98.3
Strayer Education, Inc.	6/30/99	15.5	350.2	329.1	5.0x	11.1x	11.9x	0.0%	44.6%	41.9%	29.2%	66.2
Whitman Education Group	6/30/99	13.4	40.3	406.4	5.3x	NM	NM	94.6%	11.1%	5.7%	4.2%	76.2
Average					**2.2 x**	**11.1 x**	**13.9 x**	**14.0%**	**18.0%**	**15.1%**	**9.6%**	
Median					**1.4 x**	**10.0 x**	**12.1 x**	**4.2%**	**16.1%**	**12.1%**	**7.6%**	
Educational Products & Services												
Advantage Learning Systems, Inc.	6/30/99	34.1	$898.9	$861.7	12.1x	27.8x	30.3x	0.0%	43.6%	39.9%	25.1%	$71.1
Ambassadors International	**6/30/99**	**9.7**	**132.5**	**27.5**	**0.6x**	**2.7x**	**3.5x**	**0.3%**	**23.8%**	**18.5%**	**20.1%**	**42.8**
Bright Horizons Family Solutions	6/30/99	12.2	171.4	148.3	0.7x	9.8x	13.7x	0.3%	6.6%	4.8%	3.4%	227.6
Childtime Learning Centers	4/2/99	5.4	61.8	58.6	0.5x	5.3x	7.2x	5.4%	9.7%	7.2%	4.5%	113.0
National Computer Services, Inc.	5/1/99	31.7	1,148.8	1,141.6	2.1x	12.4x	19.7x	3.7%	17.3%	10.9%	6.4%	533.3
School Specialty	4/28/99	17.4	234.3	397.8	0.8x	8.8x	11.3x	46.1%	8.7%	6.8%	2.3%	521.7
Scientific Learning Corporation (2)	3/31/99	10.3	166.1	128.0	21.8x	NM	NM	0.8%	NM	NM	NM	5.9
Sylvan Learning Systems, Inc.	6/30/99	52.0	1,110.6	1,182.9	2.2x	9.9x	14.8x	18.1%	22.8%	15.2%	28.4%	526.9
Average					**5.1 x**	**11.0 x**	**14.4 x**	**9.3%**	**18.9%**	**14.7%**	**12.9%**	
Median					**1.5 x**	**9.8 x**	**13.7 x**	**2.3%**	**17.3%**	**10.9%**	**6.4%**	
Educational Publishers												
Harcourt General Inc.	4/30/99	71.1	$3,356.5	$4,986.7	1.1x	7.1x	12.8x	66.8%	15.8%	8.8%	2.7%	$4,440.2
Houghton Mifflin Company	6/30/99	31.0	1,446.6	1,815.9	2.0x	9.2x	18.1x	53.7%	22.1%	11.2%	6.0%	892.4
McGraw-Hill Companies, Inc.	6/30/99	196.8	10,086.0	10,794.9	2.9x	12.3x	18.8x	31.7%	23.1%	15.1%	8.6%	3,783.8
Scholastic Corporation	2/28/99	16.5	676.8	968.8	0.9x	7.3x	15.0x	46.5%	11.9%	5.8%	2.5%	1,118.6
Average					**1.7 x**	**9.0 x**	**16.2 x**	**49.7%**	**18.2%**	**10.2%**	**4.9%**	
Median					**1.6 x**	**8.2 x**	**16.5 x**	**50.1%**	**19.0%**	**10.0%**	**4.4%**	
Training and Development												
ARIS Corporation	3/31/99	10.9	$69.8	$61.4	0.5x	7.0x	12.9x	0.0%	7.3%	3.9%	2.3%	$120.9
Asymetrix	6/30/99	14.1	92.6	76.3	2.3x	NM	NM	0.0%	NM	NM	NM	32.8
Caliber Learning Network	6/30/99	17.5	59.1	53.1	2.5x	NM	NM	38.0%	NM	NM	NM	21.5
CBT Group	6/30/99	48.7	1,127.0	1,039.8	6.3x	NM	NM	0.2%	10.9%	6.1%	8.3%	164.9
DA Consulting	**6/30/99**	**6.4**	**35.3**	**25.2**	**0.3x**	**3.1x**	**3.8x**	**0.0%**	**9.0%**	**7.3%**	**4.7%**	**92.0**
Franklin Covey	**5/29/99**	**21.1**	**164.9**	**231.1**	**0.4x**	**2.3x**	**4.0x**	**29.1%**	**18.5%**	**10.5%**	**4.9%**	**543.3**
GP Strategies	6/30/99	11.5	98.1	146.5	0.5x	12.0x	24.0x	32.8%	4.5%	2.2%	0.5%	273.6
Learning Tree International	6/30/99	21.6	277.3	195.5	1.0x	8.4x	15.6x	0.0%	12.2%	6.6%	5.6%	189.8
New Horizons Worldwide	6/30/99	9.5	168.1	161.2	1.8x	9.9x	14.0x	0.8%	18.0%	12.8%	8.4%	90.1
Provant, Inc. (3)	3/31/99	16.5	226.5	201.0	1.3x	8.9x	10.4x	1.7%	14.4%	12.2%	5.7%	157.5
RWD Technologies	**6/30/99**	**14.5**	**129.3**	**98.8**	**0.8x**	**4.3x**	**5.1x**	**0.0%**	**18.3%**	**15.3%**	**10.3%**	**126.8**
Average					**1.6 x**	**7.0 x**	**11.2 x**	**9.3%**	**12.6%**	**8.6%**	**5.6%**	
Median					**1.0 x**	**7.7 x**	**11.7 x**	**0.2%**	**12.2%**	**7.3%**	**5.6%**	

(1) Excludes non-recurring items.

(2) Pro forma for SCIL's initial public offering, which priced on July 21, 1999.

(2) Does not pro forma $13.2 million purchase of Project Management Services, with 1998 reveneus of $14 million.

Source: Banc of America Securities LLC.

FLOAT ANALYSIS OF SELECTED EDUCATION COMPANIES

($ millions)

Company	Exchange (1)	Market Capitalization	Shares Out. (2)	Float (3)	Float as a % of Shares Out.	Market Value of Float	% of Float		1999 YTD Daily Average Shares Traded	
							Inst.	Retail	Volume	% of Float
Advantage Learning Systems, Inc.	OTC	$898.9	34.1	9.2	27.1%	$0.2	78.4%	21.6%	0.2	2.1%
Apollo Group	OTC	1,863.9	77.3	51.4	66.6%	1,240.7	92.4%	7.6%	0.9	1.8%
Asymetrix		92.6	14.1	6.2	43.6%	40.4	45.7%	54.3%	0.2	2.5%
Bright Horizons Family Solutions	OTC	171.4	12.2	10.7	87.6%	150.1	84.9%	15.1%	0.1	1.0%
CBT Group	OTC	1,127.0	48.7	48.1	98.8%	1,113.3	60.9%	39.1%	0.7	1.5%
DeVry	NYSE	1,500.9	69.4	55.0	79.2%	1,189.0	88.0%	12.0%	0.3	0.5%
Education Management	OTC	375.9	29.5	18.4	62.3%	234.2	99.6%	0.4%	0.2	1.2%
ITT Educational Services (4)	NYSE	465.9	24.9	24.2	97.0%	452.0	97.3%	2.7%	0.2	0.7%
National Computer Systems, Inc.	OTC	1,148.8	31.7	30.8	97.1%	1,115.1	74.2%	25.8%	0.2	0.7%
Provant, Inc.		226.5	16.5	11.6	70.7%	160.2	46.3%	53.7%	0.1	0.8%
Strayer Education, Inc.		350.2	15.5	7.2	46.5%	162.7	89.3%	10.7%	0.1	0.9%
Sylvan Learning Systems	OTC	1,110.6	52.0	44.7	86.0%	954.7	88.8%	11.2%	0.6	1.4%
				Average	**71.9%**		**78.8%**	**21.2%**		**1.3%**

(1) Trading volumes doubled for NYSE companies to make trading data comparable to OTC companies.
(2) Source: Latest 10-Q or 10-K.
(3) Float is institutional and retail holdings.
* Source: Latest proxy statement or prospectus and GEO.
** Institutional ownership does not reflect shares sold in offerings since 3/31/99.

COMPANY REPORTS

Company Reports

Advantage Learning Systems, Inc.

Increase the joy of teaching and love of learning through the breakthrough technology of learning information systems.

Apollo Group, Inc.

A leading provider of higher education programs for working adults.

Asymetrix Learning Systems, Inc.

A leading provider of enterprisewide online learning solutions.

Caliber Learning Network, Inc.

Defining the future of interactive learning and communications.

CBT Group, PLC

A leading provider of interactive education software to individuals and businesses, education and government markets worldwide.

DeVry, Inc.

Growing the university of the future.

PROVANT, Inc.

We help your people produce better results.

RWD Technologies, Inc.

Bringing people and technology together.

Sylvan Learning Systems, Inc.

The world's leading provider of educational services to families, schools and industry.

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ADVANTAGE LEARNING SYSTEMS, INC.

BUY

NASDAQ: ALSI

PRICE:	$27.50
12-MONTH TARGET PRICE:	$36
52-WEEK RANGE:	$43-12
FULLY DILUTED SHARES O/S:	34.1 MM
MARKET CAPITALIZATION:	$937.8 MM
AVG. DAILY VOL. (3 MOS.):	232,632
SECULAR EPS GROWTH:	35%
FY 1999E REVENUES:	$88.0 MM
MARKET CAP./REVENUES:	1066%
6/99 TOTAL DEBT:	NONE
6/99 LTD/TOTAL CAP.:	NONE
6/99 ROAE:	20.0%
6/99 SHAREHOLDERS' EQ.:	$65.8 MM
6/99 BOOK VALUE/SHARE:	$1.93
DIVIDEND/YIELD:	NONE

FYE 12/31	1998A	1999E	2000E
EPS			
Q1(MAR)	$0.06	$0.13A	$0.18
Q2(JUN)	0.07	0.14A	0.19
Q3(SEP)	0.12	0.17	0.22
Q4(DEC)	0.13	0.18	0.24
FISCAL YR	$0.37	$0.62	$0.83
P/E	74.3	44.4	33.1
P/E/G	212%	127%	95%

A Leading Provider of Learning Information Systems

- Advantage Learning Systems has built a simple-to-use but compelling tool that facilitates reading instruction for teachers and inspires reading practice for young children. The tool is Accelerated Reader (AR), and it forms the backbone of an expanding suite of instructional tools for K-12 public schools.
- Accelerated Reader is a top-selling reading product and is currently used in more than 40% of the K-12 schools in North America.
- **The key, in our view, is that the company is building a learning platform in the classroom.** It will breed familiarity with users (teachers and students), driven by common user interface and navigation. The consumers will likely opt to augment their platform with more instructional tools that facilitate more practice—the key to academic achievement, in our view.
- The combination of sustained growth and the size of market that is, as yet, untapped by Advantage Learning gives us confidence that it can continue to grow more than 35% per year.
- We believe the California win (as an "adopted" product) and the recent agreement with McGraw-Hill provide strong affirmation of our belief that Advantage's products are becoming the accepted standard for reading software in the K-12 market.

Company Description and Investment Thesis

Advantage Learning Systems, Inc., is readily identified as a leading provider of learning information systems for K-12 schools. These systems improve student academic performance by increasing the quality, quantity and timeliness of performance data available to educators, and by facilitating increased student practice of essential skills.

Advantage Learning Systems has built a suite of simple-to-use but compelling tools that facilitate instruction for teachers and inspire practice for young children. The Accelerated Reader (AR), Advantage Learning's flagship product, representing almost 50% of sales, is a software-based learning management system designed to motivate students to read books and monitor student reading levels. The simplicity and accessibility of the products increase student practice of essential reading skills and increase the quality, quantity and timeliness of performance data available to educators.

After students read a book, they can immediately go to the computer (Mac or Windows platform with minimum hardware requirements) and take a five- to 10-question quiz on the book. The students receive points based on the number of correct answers as well as the difficulty and length of the book. The company's other primary learning information system products include the Standardized Test for Assessment of Reading (STAR)—a computer-adaptive reading test and database—and tandem math products (Accelerated Math and STAR Math). The products support a robust database of readily available information that generally is lacking, in our view, in K-12 classrooms.

Learning information systems provide educators benefits similar to those that management information systems provide to business managers. These systems are of paramount importance, in our view, for public schools, not only as teachers hope to manage the individual learning needs of each student, but also as schools strive to satisfy the increasing demands for accountability by politicians, parents and policymakers. And the demand is increasing. For example, more than 40 states norm-referenced assessment tools to measure student performance in core curriculum areas. Therefore, we believe teachers and schools are eager to implement products like Accelerated Reader because of the accountability it provides the classroom with its immediate results and useful reports.

According to Quality Education Data (QED), the K-12 market in the U.S. consists of more than 110,000 public and private schools. According to the National Center for Education Statistics (NCES), there are more than 50 million students in these schools. However, few technology-based educational products are embraced by teachers and students because those products: (1) do not offer the feedback teachers need to build individual education plans for students; (2) supplant rather than assist teachers by attempting to teach skills rather than supporting teachers' existing practices; (3) fail to maintain student interest; and (4) require more equipment and hardware than is, in general, available in schools.

We believe Advantage Learning's products succeed where other products have failed because the company has effectively addressed the aforementioned concerns of the K-12 market.

The company's products are used by nearly 46,000 K-12 schools, representing 42% of all schools in the United States and Canada.

Strong Secular Trends Supporting Advantage Learning Systems

A large market. According to Quality Education Data (QED), the $300 billion K-12 market in the U.S. consists of more than 110,000 public and private schools. According to the National Center for Education Statistics (NCES), there are more than 50 million students in these schools.

Advantage Learning's products are currently in 45,700, or nearly 42%, of schools—a highly impressive penetration level, in our view. Nonetheless, we believe **Advantage has a presence in fewer than 5% of the 2.5 million classrooms in the U.S. and Canada**, which, in our view, highlights the same-school growth opportunity facing the company.

Favorable political momentum. In our view, political trends are increasingly favorable for Advantage, including:

- Bipartisan support for increased education spending.
- A national obsession with improved reading and math skills.
- Accelerating demands for more school accountability from improved information systems.

Investment Considerations

We believe there are several factors that investors should take into account when analyzing Advantage Learning.

- **Reliance on continued successful product development and rollout.** In order to maintain its competitive advantage, the company must sustain its investment in R&D as well as product development. Product development may take a few years and result in high levels of spending with no assurance of market success.
- **Geographic and buyer concentration.** Advantage's sales are concentrated in a few key geographic regions. While we believe the company's geographic reach will extend nationwide and perhaps internationally, any disruption in funds allocation from the local, state or federal governments in key states could be damaging. While we believe political and demographic trends are overwhelmingly in favor of increased funding for education, we recognize the vicissitudes in politics and public policy.
- The company has a leading market share in the competitive instructional tools market, which is characterized by **seasonality in purchasing patterns**. If buyers delay a product purchase, the next sales opportunity could be four months to one year away. In addition, the majority of K-12 instructional sales are made in the months leading up to the beginning of the school year, putting added margin pressure on quarters when staffing levels remain high but sales are relatively slow.
- **Limited protection of intellectual property rights and attractive margins and growth potential.** We believe low barriers to entry surrounding the software in combination with high profitability in the business model will likely lure competitors into the market.

Multiple Growth Drivers

In our view, one of the most important features of the products is their price points. We have found that many education products have failed to build a presence in public schools because the price points were too excessive for teachers. When buying decisions are made outside of the classroom, usage of the product, in our view, is immediately in doubt. **Teachers are the critical change agent in the classroom without whom neither product nor any school reform will work**.

The attractive price points for Advantage's products enable **the company** to execute a "bubble up" marketing strategy where teachers make the buying decision. Teachers can expect less resistance from those who control the purse as well as even dipping into school-site dollars for the required funds. We **believe teacher buy-in is the most critical factor for the impressive penetration rate and success of the products.**

Advantage benefits from several strong growth drivers that we believe will propel earnings growth of more than 35% over the next three to five years.

	1995	1996	1997	1Q98	2Q98	3Q98	FY98	1Q99	2Q99	FY99E
Schools	19,400	26,175	34,027	35,500	37,500	39,575	41,500	43,400	45,700	49,500
Y/Y % Growth		35%	30%	26%	25%	24%	22%	22%	22%	19%

Source: Company documents, Banc of America Securities LLC estimates.

The razor and razor blade approach to same-store growth. Most school-customers begin using the Accelerated Reader as a supplement to core reading instruction. The software may be installed on the computer of one classroom where the third grade reader teacher resides, for example. The evolution of business within that customer may take different paths:

- The current classroom may purchase more quiz disks as it increases its library of quizzes to support the books in the school library that children are reading. As the customer's library grows, so grows its need for more Advantage quizzes. Advantage develops new book quizzes that serve to establish a recurring revenue stream. Each additional title disk (consisting of 50 quizzes) cost $52-79. Customers also have an option to customize the list of 50 titles on the quiz disks, in lieu of purchasing a predesigned disk. The customized title disks costs $129 each.
- Other classrooms within the school may begin to use the software particularly if the initial class is having success.

	1995	1996	1997	1998	1999E
Quiz Titles	7500	10,000	13,500	20,500	29,000
Y/Y % Growth		33%	35%	52%	42%

Source: Company documents, Banc of America Securities LLC estimates.

New products. Reading is the premier subject in public schools. Therefore, we believe Accelerated Reader will always be the mother's milk for Advantage. Most schools begin using the Accelerated Reader as a supplementary or voluntary program in a small percentage of classrooms. We view that initial usage as a beachhead, of sorts, from which Advantage can stake out bigger territory.

To increase the use of its products, Advantage publishes newsletters and research relating to the effectiveness of its products and maintains communication with customers through its telephone sales force.

Then, Advantage Learning brings out the next generation of products. Advantage's suite of products was first augmented in 1996 when the company began selling its STAR Reading product. The **Standardized Test for Assessment of Reading (STAR)** supplies educators with norm-referenced reading scores for students in 10 minutes or less. STAR administers a series of multiple choice questions for which students choose the best word to complete each sentence. STAR adapts itself to each student's reading level by evaluating the pattern of the students' answers to determine the level of difficulty required for subsequent questions.

STAR's Adaptive Branching can measure reading progress and prepares students for the major year-end tests. It provides a report that delivers information on growth and can classify scores by grade, classroom, school or special populations.

Advantage began selling its STAR Math product to support math assessment in the classroom. In December 1998, Advantage began shipping Accelerated Math to support math practice in the classroom. We expect the math products to rapidly gain market share in K-12, albeit not as significantly as the reading products. Advantage can augment its product line with products in other curricular areas, such as physics or foreign languages.

New distribution channels. Advantage has established strategic alliances with educational book distributors and publishers. We believe distributors, in total, deliver about 20% of the company's revenue. Distributors and publishers embrace the alliance with the company, because Advantage's Accelerated Reader encourages the sale of books and other products sold by book vendors. Therefore, in addition to direct marketing, the company currently has resale arrangements with five U.S. and two Canadian book distributors that are authorized to sell the Accelerated Reader to their customers.

Under the resale arrangements, distributors take orders that are then filled directly by Advantage. By putting itself directly in the loop with the customer, the company ensures customer service and establishes the contact for future marketing and sales opportunities. The distributors get a minimal discount from Advantage for the distribution. However, the distribution offers the distributor leverage to gain access to the school/customer.

Also, several book distributors and publishers promote the sale of the Accelerated Reader by publishing special catalogs that advertise book sets assembled specifically for Accelerated Reader title disks. Several distributors and publishers have hired Advantage to create title disks to support their product lines.

- **Follett Library Resources**, the country's largest supplier of books to school libraries, is a recent addition to the Advantage distribution model. We believe it is important to note that Follett has stopped distributing Electronic Bookshelf, which is a competitive product to Advantage's reading software.

- **Perma-Bound Books**, a major book distributor that has sold the company's reading software since 1994, also is now selling Advantage's reading seminars for teachers as well as the company's new math and Perfect Copy software. Sales to Perma-Bound accounted for 10% of the company's revenues in fiscal 1998.

- Advantage recently signed an agreement with leading K-12 textbook publisher McGraw-Hill. The agreement will bundle customized AR quizzes with McGraw-Hill's new reading program. McGraw-Hill's sales force may even sell the Accelerated Reader software into schools that do not already have the base software. We expect the McGraw-Hill agreement to be a significant growth driver for Advantage.

New markets. The company can expand into **new geographic markets**, adapting the products to different languages. We believe expansion into other English-speaking countries such as the U.K. and Australia offers Advantage a strong opportunity to develop an international presence. We expect to see international sales begin to make a material contribution to the top line in the second half of 2000, particularly from Australia and the U.K.

Renaissance seminars. We believe there are approximately 3 million educators in the United States and Canada. Teachers will usually select the path of least resistance and change always presents resistance, at least until the teacher can master the change. Therefore, **new instructional products and services often fail in the classroom because there is little, if any, support and training to shepherd the teachers down the path of change**.

Since 1994, more than 115,000 educators have attended Reading Renaissance seminars. We believe Advantage's focus on training existing and prospective customers on how to use the Advantage products and, more broadly, how to run a more motivated, fun and exciting classroom, is a key to its business strategy. By involving the user/buyer, and providing ideas on how to make a more positive impact on their students' learning experiences and how to better communicate with parents, Advantage helps to build tremendous customer loyalty. This loyalty leads to repeat business, word of mouth new customers, and satisfied and enthusiastic children and parents.

We believe training should maintain 50% growth because:

- The training needs for the installed base are recurring, not one-time events for new installations.
- The training needs for K-12 teachers are growing; i.e., a rising tide will lift all training boats (secular demand).
- The recent acquisition of Gen21 should expand the reach of AR training products because of the expanded digital delivery capabilities. (See a detailed discussion of Gen21 on the following pages.)

Service revenue includes both revenue relating to the Reading Renaissance professional development training and revenue from software support agreements for ongoing customer support and product upgrades. The company recognizes revenue from sales of its training seminars and programs primarily at the time the seminar or training program is conducted. Revenue from software support agreements is reflected as deferred revenue and is amortized ratably over the 24-month term of the maintenance period.

Adoptions. Some states utilize an adoption methodology, whereby educational materials providers (textbooks, software, curriculum assistance, etc.) submit their products for approval by a state educational board. If the products are adopted, they are placed on an approved product list from which schools generally buy exclusively. The impact can be tremendous: a newly "adopted" product can go from having very little penetration in a large state such as California or Texas, to become a leading product, used by thousands of students.

For example, the California adoption program is roughly $230-250 million, or around $40-50 per student. Schools must spend their per-student allocation by year-end. We believe this money will be

allocated to vendors on the "adopted" list first, because the list connotes a stamp of quality (correctly, in our view) for the product.

Advantage Learning's reading products (Accelerated Reader, STAR Reading and PerfectCopy) recently won approval for state adoption in California. Adopting Advantage's products for California, in our view, will be a tremendous financial and political boost for the company for many years to come.

We believe Advantage's products, particularly the reading products, will increasingly appear on state adoption lists. This places Advantage in the enviable position of having a "nontraditional" product approved by a state education board, which gives the product an implicit, if not explicit, stamp of quality approval.

The Sales Strategy

One school at a time. Advantage Learning Systems, Inc., was founded in 1986 by Judi and Terry Paul, who were dismayed at their own children's lack of interest in reading. Starting with just a few neighbors and friends who bought the product, the Pauls began selling the product one school at a time, and now more than 45,000 of the country's schools use one or more of Advantage's products. We believe the patient, deliberate growth strategy is possibly unparalleled in the annals of K-12 instructional vendors. The patience, in our view, will now work to the advantage of the company as it enjoys a large installed base of satisfied users.

Telesales is the largest contributor to revenue. The telesales force consists of more than 60 professionals, one of the largest in the education materials industry. We believe the company plans to expand this number aggressively in coming years.

The telesales force is primarily responding to leads generated by a number of different techniques, including: trade shows, advertisements in educational publications, direct mail, web sites and referrals. For example, Advantage currently mails its magazine to approximately 250,000 educators five times per year.

Strengthening Core Competency (Information Systems) Via Acquisition

Math is a close second to reading as far as the subject area to which K-12 schools dedicate their resources (time and money). This is for good reason. There is considerable evidence that math skills are determinative in not only school success, but also life success.

To address the compelling demand, Advantage acquired IPS. IPS is a developer of algorithm-based software for assessment and skills practice in math and science. IPS has a proprietary library of more than 50,000 algorithms (compared with 20,000 at the time of acquisition), each capable of generating virtually unlimited variations of specific math and science problems. These algorithms are incorporated into off-the-shelf software for sale to educators and custom software developed primarily for educational textbook publishers and school districts.

IPS's software products, ***MathCheck*** and ***Objective Tracker***, provide teachers with tools to monitor student math achievement and create customized exercises and quizzes. Off-the-shelf products cost $295 each, while custom products are $5,000-40,000. The major math products, however, are STAR Math and Accelerated Math (both began shipping in late 1998).

STAR Math is a computer-adaptive math test and database that assesses a student's math skills in 15 minutes or less at a computer. STAR Math is available for single-computer or schoolwide use. The single-computer license costs $399 and allows for multiple testing of up to 40 students. The school-wide license costs $1,499 and offers network or unlimited testing for up to 200 students.

Like the company's reading products, STAR Math determines the student's level of mathematical ability, and Accelerated Math encourages and monitors student practice of foundational skills, while providing immediate feedback on performance to student and teacher. The Institute for Academic Excellence is expected to launch training workshops for the product simultaneously to the initial product shipment.

We believe the introduction of math products will extend the company's reach into high schools, which represent 15% of the total 110,000 K-12 schools in North America. We believe Accelerated Math and STAR Math will experience similar ramps in revenue growth as did STAR Reading when it was released. We believe most Advantage customers of the reading products will embrace release of the math products.

In 1999, **Advantage purchased Humanities Software**, a provider of writing skills software. The acquisition continues Advantage's strategy of purchasing products that widen the potential audience for the company's Learning Information System approach.

The success of Advantage's training business was the catalyst for their **acquisition of Generation 21 Learning Systems (Gen21)** in 1999. Of the 140,000 teachers Advantage Learning has trained, none were trained on the Web—all were trained in lower-margin, difficult-to-scale instructor-led forums. Advantage Learning had been looking for ways to capture more training dollars and gain greater leverage on its brand equity. Brand equity is difficult to achieve in K-12 and those in that envied position should fully capitalize on the equity in the sacrosanct market of K-12.

After careful due diligence, Advantage Learning believed Gen21 was the right vehicle to launch a more extensive training business. Gen21 enables Advantage to reach a wider audience in a cost-effective, profitable manner. Gen21 has a distance-delivery training platform (the "razor") through which Advantage can repeatedly sell training content (the "razor blade"). The razor/razor blade strategy in training parallels Advantage's razor/razor blade strategy in products (Accelerated products/quiz disks).

Districts could partner with Advantage to develop specific content aimed at the district teachers or administrators. Advantage can also host the training service for the district training network, reducing the technology expertise the school would require.

Extending Into the Corporate Training Market

A second driver behind the acquisition of Gen21 was the appeal of the mammoth ($100 billion) corporate training market. Corporate training is perceived as "risky" because of the struggles of public companies such as Asymetrix, Caliber, Wave Technologies and others. Nonetheless, their ailments are company-specific and not indicative of any marketwide malaise.

We are very bullish on the secular trends in corporate training and believe the key to conquering this highly fragmented and quickly growing market lies in the execution. We believe Advantage Learning management conducted a thorough study of the web-training market, particularly relative to the evolution of the software solutions, and are confident that Gen21's learning object methodology will provide the scalability and flexibility necessary to succeed in this market.

We believe one of the keys to Advantage Learning's positive impressions of Gen21 lies in the soundness of its instructional design. **The software is built on a foundation of sound, andragogical theory.**

In addition, Gen21's software utilizes a Learning Object approach to content development. Training content is authored using learning objects—each of which represents the steps taken to achieve a defined learning objective. These objects can then be assembled independent of the ultimate delivery media (instructor-led, text-based, CD-ROM, Internet) by the publishing module in Gen21.

The publishing module will then convert the objects into the appropriate form for the chosen media. One of the beauties of this architecture is that it allows updates to the Learning System without redoing the entire course. Individual objectives can be updated without reconstructing a course, for example.

Traditional technologies would not allow for this object-by-object fix—the content provider would have to redo the entire program. Gen21's approach gets around this major obstacle by using learning objects, reducing costs and improving turnaround times.

If the content is to be delivered through the Internet, or across an intranet, Gen21 can either provide just the content or actually host the training delivery through its servers. We believe hosted training will appeal to both corporate customers and also school districts, which have neither the resources nor the capital to host and maintain a training program.

In summary, the Gen21 solution is comprehensive and compelling, in our view. It authors, publishes, delivers and manages the training process. Many companies provide different parts of the training sequence (author, publish, deliver, manage.) Few provide a comprehensive solution and even fewer have been able to integrate learning objects into that package.

Expenses and Operating Profitability

The profitability of the business model is unparalleled in the education services group. We do not expect any disruption to the margin levels and trends witnessed heretofore. There are multiple leverage points, including:

- An expanding installed base of users that requires lower levels of marketing and customer service because of familiarity with the products and the vendor.
- Evolving brand equity, which facilitates first-time sales at lower incremental marketing costs.
- A larger development infrastructure, on which more products can be built at lower incremental costs.
- Generally, inelastic demand (or price-insensitive buying patterns), which enables the company to pass through certain cost increases.

Potential for Windfalls

Advantage announced a stunning earnings report in the third quarter of 1998 that positively surprised investors by almost $2 million in revenue and $0.09 in earnings. Much of the positive surprise was attributable to **three substantial funding grants:**

- The Albertson Foundation in Idaho (one of Advantage Learning's strongest states) has granted more than $11 million to schools for purchase of reading products and software. Accelerated Reader was specifically mentioned in the grant and was a beneficiary of the Albertson largesse. We believe the funds drove Advantage's penetration of Idaho schools from 60% to 80%. Advantage has received some revenue from this program in the third quarter of 1998; however, we believe most schools still need to apply for the grant.
- Dade County (Florida) granted money so that all schools throughout the county can buy Accelerated Reader. Advantage completely filled the order in the third quarter of 1998, although we expect follow-on training revenue.
- A $1.6 million federal grant in Seattle for teacher training will be spread out prospectively. We believe Advantage's Reading Renaissance will be earmarked for a significant portion of that revenue.

The three grants represent more than just three short-term sources of revenue, in our opinion. We believe they may motivate teachers and school districts to aggressively seek technology-centric learning solutions for their schools. Furthermore, we believe the strong positive impact that Advantage products have on students and schools, coupled with the fact that funding technology in schools is socially and politically en vogue, may inspire additional charitable foundations to financially support the purchase of Advantage products in schools.

Advantage recognizes significantly higher gross margins on its product sales than on its service sales. As a result, as service sales have increased significantly over the last several years as a percentage of total sales, the company's total gross margin has generally declined. In 1997, however, total gross profit margin increased slightly because of a substantial decrease in costs associated with training sessions.

The company expenses all product development costs associated with a product until technological feasibility is established, after which time such costs are capitalized until the product is available for general release to customers. Capitalized product development costs are amortized into cost of sales generally using the straight-line method over two years.

Management

Judith A. Paul is the cofounder of Advantage and has been chairman of the Board of Directors since 1986. Advantage was borne in Judy's kitchen almost 20 years ago. In her struggle to inspire her own children to read, Judy created her own motivational quizzes that rewarded her children for reading books and successfully completing exams. Judy holds a bachelor's degree in elementary education from the University of Illinois and has published *101 Ways to Motivate Students to Read* (1995), *The Family Reading Night Kit* (1996) and *The Literacy Partnership Kit* (1997).

Terrance D. Paul is the cofounder of the company and has been vice chairman of the Board of Directors since July 1996. Before assuming his first position with the company in 1992, Mr. Paul was president of Best Power Technology, a manufacturer of uninterruptible power supplies. Mr. Paul is the author of several publications, including *How to Create World-Champion Readers* (1993) and *The New Technology of Learning Information Systems* (1997).

We believe Mr. Paul is the technician behind his wife's seminal thoughts of 20 years ago. Using his adept managerial and marketing skills, he has shepherded the company from its birth to its present size.

Michael H. Baum, chief executive officer, joined the company in June 1994 and has been its chief executive officer since July 1996. Mr. Baum holds degrees from Yale University and Northwestern University. From September 1994 until November 1995, Mr. Baum was the managing director of the Institute. From 1984 until 1994, Mr. Baum held a variety of positions with an international management consulting firm.

John R. Hickey has been the president of the company since July 1996. Prior to joining the company, Mr. Hickey served in various companies, including R.F Technologies, Liebert Corporation, Best Power Technology and Briggs and Stratton. Mr. Hickey holds a bachelor's degree in international business from the University of Wisconsin.

Michael Milone, Ph.D., was recently hired as senior educational consultant in the product development group. Dr. Milone is an authority on assessment, use of technology and building foundational skills in language arts, science and social studies. Among the books published by Dr. Milone are *Every Teacher's Guide to Word Processing* and *Early Childhood Program*. He was formerly chairman of the Technology and Reading Committee of the International Reading Association and served on the Instructional Technology Committee of the National Council of Teachers of English.

The Competitive Landscape

Advantage competes with companies offering educational software products to schools, including companies such as International Business Machines (IBM, $123-3/16), Apple Computer, Inc. (AAPL, $62-1/16), Broderbund Software, Inc., and The Learning Company, Inc.

Scholastic (SCHL, $41-3/8) recently announced that it was selling upgraded versions of a product that is competitive with Accelerated Reader. Advantage stock performed poorly following the announcements. Scholastic has a larger sales force than Advantage and is, arguably, a leading brand in K-12.

Nonetheless, we believe the Scholastic products will not threaten Advantage's dominance of the market for at least two reasons: (1) the Scholastic salesforce is not likely to expend much energy on the new products because of its focus on textbook adoptions and other products that compose 99% of the Scholastic business; (2) the products are, in our view, inferior to Advantage's products.

Many other companies, including Microsoft Corp. (MSFT, $92-1/4) and Walt Disney Co. (DIS, $28-1/2), provide educational software products. While existing competitors may broaden their product lines, and potential competitors, including large hardware manufacturers, software developers and educational publishers, may enter or increase their focus on the school market, we believe Advantage is well positioned to continue to compete favorably in the markets in which it participates.

Furthermore, we believe Advantage competes primarily against teaching traditions. In other words, rather than facing competition from alternative products, Advantage faces resistance from teachers who are not accustomed to relying on products or services from outside sources—irrespective of the proof that those products or services may deliver results.

The Importance of Brand

The value of brand equity lies at the core of our investment thesis for Advantage Learning Systems. The company has impressively gained a foothold in public schools after 10 years of patiently building its customer base one school at a time. Now the traction it established has enabled it to push further and at an accelerating rate.

It is very difficult for businesses to gain buying traction within public schools, particularly with instruction-related products. However, once traction is gained, the ability to push deeper into the buying habits of schools is powerful. School consumers are loyal, primarily because they are so unchanging.

The unchanging ways of school consumers is a **formidable barrier to entry** for the untested, unproven products. It is the best friend of the tested and proven.

Advantage Learning's brands (Accelerated, STAR and Renaissance) are emerging as leading brands in the K-12 market—a market not noted for abundant brands. We believe the success of the products will continue to grow and fuel Advantage Learning's ascent to the status as, arguably, the premier brand in K-12.

Other Barriers to Entry

Customer switching costs. Advantage has a large installed base of users. An installed base is particularly formidable when the products are used and productive.

Capital requirements. Advantage has so many titles developed (20,000) that it enjoys economies of scale and lower development costs.

In summary, Advantage's success has been built on the following cornerstones:

- Attractive price points that allow teachers to circumvent the arduous labyrinth of purchase requests and district approvals. The attractive price points enable Advantage to execute a "bubble up" marketing strategy where teachers make the buying decision.
- Training programs that instill confidence in teachers as well as increase brand equity for Advantage. **We believe teachers are the critical change agents in the classroom without whom neither product nor any school reform will work.**
- A highly effective direct marketing effort, which has built the business one school at a time.
- Strong technical support and customer service for its customers, many of whom were or remain technophobes.
- An open systems approach that enables Advantage to address a Macintosh or PC platform.
- A laser-like focus on providing learning information systems, which is clearly the rage in public education now since demands for accountability are on the rise while systems to provide information are few and far between.

APPENDIX 1

PRODUCT PRICING GUIDE

Product	Price	Features
Accelerated Math		
Starter Kit	$999	Accelerated Math Software, 1 Standard Algorithm Library, 200 Student License Expert Support Plan
Super Kit	$2999	Accelerated Math Software, 1 Standard Algorithm Library, 200 Student License AM Expert Support Plan STAR Math License 1 Standard Library STAR Expert Support Plan
50-Student Expansions	$79	
Expert Support Plan-Plus	$249 for 2 additional years, $179 each year thereafter	
Libraries	$899-1099 for Standard $299 for Extended Response	
STAR Math		
Single Computer License	$349 Introductory $399 List	
School-wide license	$1299 Introductory $1499 List	
50-student Expansions	$75	
STAR Reading		
Single Computer License	$399	
School-wide License	$1499	
Expert Service Plan-Basic	$139 $99 additional year	
Expert Service Plan-Plus	$249 for 2 additional years $179 each year thereafter	
50-student expansion	$75	

Banc of America Securities

Perfect Copy	Price	Features
		School-wide License, 80 Articles
Starter Kit	$399	Expert Service Plan
		School-wide License, 260 Articles
Economy Kit	$1290	Expert Service Plan
Additional Skill Sets	$99	
50 Student Expansion	$79	
	$249 for one year	
Expert Service Plan	$179 each additional year	
Accelerated Reader		
		AR Software
		School-wide License
		Four Standard Title Disks
Starter Kit	$399	Expert Support Plan
		AR Software
		School-wide License
		20 Standard Title Disks
Economy Kit	$1499	Expert Support Plan
		AR Software
		STAR Reading Software
		School-wide License for both AR and STAR
		20 Standard Title Disks
		Expert Support Plan for both AR and STAR
		5 Quick Reference Cards
Super Kit	$2999	5 Reference Flipcharts
Custom Disks	$129	50 titles
Standard Disk	$76	
Spanish/English Starter	$459	
Renaissance Seminars		
	$139	
Creating World Class	$109 for more than 3 from the same	
Readers	school	
	$499	
Building Model	$429 2 or more	
Classrooms	$399 3 or more	
AR Training Kit	$395	
Video Library	$120-$150	

APPENDIX 2

REVENUE DERIVATION

	1995	1996	1997	1998	1999E	2000E
Accelerated Reader, Software & quiz disks						
Revenue		15.4	18.4	26.3	35.2	45.6
As % of Total Revenue	**89.8%**	**69.0%**	**51.0%**	**48.0%**	40%	37%
Y/Y growth			19%	43%	34%	30%
Star Reading						
Revenue		2.5	9.0	12.0	15.4	20.0
As % of Total Revenue		11.2%	25.0%	21.9%	17.5%	16.2%
Y/Y growth			260%	33%	28%	29.6%
Renaissance Seminars						
Revenue		2.9	5.8	7.905	11.4	16.0
As % of Total Revenue	6.1%	**13.0%**	**16.1%**	**14.4%**	13%	13%
Y/Y growth			100.0%	36.3%	44.8%	40.0%
Training Support Services						
Revenue		0.6	1.2	3.2	6.4	12.7
As % of Total Revenue		2.5%	3.2%	5.8%	7.2%	10.3%
Y/Y growth			111.3%	173.1%	100.0%	100.0%
Total Services						
Revenue		3.451	6.964	11.084	17.8	28.7
As % of Total Revenue			**19.3%**	**20.2%**	20.2%	23.3%
Y/Y growth			102%	59%	61%	61%
Accelerated Math, Software & quiz disks						
Revenue	NA	NA	NA		7.6	11.8
As % of Total Revenue	NA	NA	NA		9.3%	9.6%
Y/Y growth						55.3%
Star Math						
Revenue				3.4	9.0	12.0
As % of Total Revenue				6%	10%	10%
Y/Y growth					167.2%	33.3%
Other						
Revenue		1.0	1.7	2.0	2.4	2.9
As % of Total Revenue	4.1%	4.4%	4.7%	3.7%	2.8%	2.4%
Y/Y growth			70.9%	20.0%	20.0%	20.0%
Overall revenue		22.4	36.0	54.8	88.0	123.3
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Company reports, Banc of America Securities LLC estimates.

ADVANTAGE LEARNING SYSTEMS, INC.

Quarterly Sales and Earnings Model
($ 000s)

	1Q98A	2Q98A	3Q98A	4Q98A	1998E	1Q99A	2Q99A	3Q99E	4Q99E	1999E	1Q00E	2Q00E	3Q00E	4Q00E	2000E
Net Sales- Products	$ 8,636	$ 9,680	$ 11,325	$ 14,039	$ 43,680	$ 15,060	$ 16,806	$ 18,700	$ 19,660	$ 70,226	$ 21,125	$ 22,750	$ 25,600	$ 26,500	$ 95,975
Net Sales - Services	1,987	2,041	3,694	3,362	11,084	$ 3,292	$ 3,531	$ 5,780	$ 5,200	17,803	$ 5,023	$ 5,195	$ 8,850	$ 8,210	27,277
Total Net Sales	**10,623**	**11,721**	**15,019**	**17,401**	**54,764**	**18,352**	**20,337**	**24,480**	**24,860**	**88,029**	**26,148**	**27,945**	**34,450**	**34,710**	**123,252**
Cost of Product Sales	901	1,056	825	1,222	4,004	1,565	1,884	1,421	1,671	6,541	2,176	2,343	2,304	2,200	9,023
Cost of Service Sales	865	748	1,394	1,491	4,498	1,705	1,460	2,387	2,262	7,814	2,160	2,182	3,806	3,604	11,751
Total Cost of Sales	1,766	1,804	2,219	2,713	8,502	3,270	3,344	3,808	3,933	14,355	4,336	4,525	6,110	5,804	20,774
Gross Profit	8,857	9,917	12,800	14,688	46,262	15,082	16,993	20,672	20,927	73,674	21,812	23,420	28,341	28,906	102,478
Operating Expenses															
Product Development	1,027	1,283	1,226	1,462	4,998	1,394	1,825	2,154	2,175	7,548	2,144	2,515	3,273	3,124	11,056
Selling & Marketing	3,351	3,068	3,591	3,604	13,614	4,722	5,329	5,998	5,295	21,344	6,406	6,567	8,268	7,983	29,224
General & Administrative	1,737	1,742	1,762	2,021	7,262	2,236	2,290	2,913	3,112	10,552	3,059	3,633	4,479	4,165	15,336
Purchased Research & Development	-	475	-	-	475	-	180	-	-	180	-	-	-	-	-
Total Operating Expenses	6,115	6,568	6,579	7,087	26,349	8,352	9,624	11,065	10,583	39,624	11,609	12,715	16,019	15,272	55,616
Income from Operations	**2,742**	**3,349**	**6,221**	**7,601**	**19,913**	**6,730**	**7,369**	**9,607**	**10,344**	**34,050**	**10,202**	**10,705**	**12,321**	**13,634**	**46,862**
Total Other Income/Expense	**504**	**477**	**464**	**213**	**1,658**	**589**	**687**	**190**	**190**	**1,656**	**190**	**175**	**190**	**190**	**745**
Pretax Income	**3,246**	**3,826**	**6,685**	**7,814**	21,571	**7,319**	**8,056**	**9,797**	**10,534**	35,706	**10,392**	**10,880**	**12,511**	**13,824**	47,607
Income Tax	1,347	1,552	2,676	3,269	8,844	3,001	3,343	4,017	4,319	14,680	4,261	4,461	5,130	5,668	19,281
Net Income (Fully Taxed)	**1,899**	**2,274**	**4,009**	**4,545**	**12,727**	**4,318**	**4,713**	**5,780**	**6,215**	**21,026**	**6,132**	**6,419**	**7,382**	**8,156**	**28,326**
EPS (Fully taxed)	$ 0.06	$ 0.07	$ 0.12	$ 0.13	$ 0.37	$ 0.13	$ 0.14	$ 0.17	$ 0.18	$ 0.62	$ 0.18	$ 0.19	$ 0.22	$ 0.24	$ 0.83
Wtd. Avg. Shares Outstanding	33,920	33,942	33,974	34,078	33,978	34,156	34,117	34,127	34,137	34,134	34,147	34,157	34,167	34,177	34,174
Margin Analysis															
Total Net Sales	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Sales - Products	81.3%	82.6%	75.4%	80.7%	79.8%	82.1%	82.6%	76.4%	79.1%	79.8%	80.8%	81.4%	74.3%	76.3%	77.9%
Net Sales - Services	18.7%	17.4%	24.6%	19.3%	20.2%	17.9%	17.4%	23.6%	20.9%	20.2%	19.2%	18.6%	25.7%	23.7%	22.1%
Gross Profit - Products	89.6%	89.1%	92.7%	91.3%	90.8%	89.6%	88.8%	92.4%	91.5%	90.7%	89.7%	89.7%	91.0%	91.7%	90.6%
Gross Profit - Services	56.5%	63.4%	62.3%	55.7%	59.4%	48.2%	58.7%	58.7%	56.5%	56.1%	57.0%	58.0%	57.0%	56.1%	56.9%
Gross Profit Margin	83.4%	84.6%	85.2%	84.4%	84.5%	82.2%	83.6%	84.4%	84.2%	83.7%	83.4%	83.8%	82.3%	83.3%	83.1%
Product Development Expense	9.7%	10.9%	8.2%	8.4%	9.1%	7.6%	9.0%	8.8%	8.8%	8.6%	8.2%	9.0%	9.5%	9.0%	9.0%
Sales & Marketing Expense	31.5%	26.2%	23.9%	20.7%	24.9%	25.7%	26.2%	24.5%	21.3%	24.2%	24.5%	23.5%	24.0%	23.0%	23.7%
General & Administrative Expense	16.4%	14.9%	11.7%	11.6%	13.3%	12.2%	11.3%	11.9%	12.5%	12.0%	11.7%	13.0%	13.0%	12.0%	12.4%
Operating Income (Recurring)	25.8%	28.6%	41.4%	43.7%	36.4%	36.7%	36.2%	39.2%	41.6%	38.7%	39.0%	38.3%	35.8%	39.3%	38.0%
Tax Rate	41.5%	40.6%	40.0%	41.8%	41.0%	41.0%	41.5%	41.0%	41.0%	41.1%	41.0%	41.0%	41.0%	41.0%	40.5%
Net Margin (Fully Taxed, Recurring)	17.9%	19.4%	26.7%	26.1%	23.2%	23.5%	23.2%	23.6%	25.0%	23.9%	23.4%	23.0%	21.4%	23.5%	23.0%
Percent Change (Yr/Yr)															
Total Net Sales	36.0%	34.2%	55.6%	77.1%	52.0%	72.8%	73.5%	63.0%	42.9%	60.7%	42.5%	37.4%	40.7%	39.6%	40.0%
Net Sales - Products	34.0%	32.6%	51.1%	79.5%	50.3%	74.4%	73.6%	65.1%	40.0%	60.8%	40.3%	35.4%	36.9%	34.8%	36.7%
Net Sales - Services	45.1%	42.4%	71.0%	67.8%	59.1%	65.7%	73.0%	56.5%	54.7%	60.6%	52.6%	47.1%	53.1%	57.9%	53.2%
Gross Profit	40.3%	36.8%	62.1%	81.1%	56.4%	70.3%	71.4%	61.5%	42.5%	59.3%	44.6%	37.8%	37.1%	38.1%	39.1%
Product Development	51.3%	84.3%	35.5%	27.4%	45.8%	35.7%	42.2%	75.7%	48.8%	51.0%	53.8%	37.8%	51.9%	43.6%	46.5%
Sales & Marketing	55.1%	33.9%	40.6%	34.7%	40.6%	40.9%	73.7%	67.0%	46.9%	56.8%	35.7%	23.2%	37.9%	50.8%	36.9%
General & Administrative	49.2%	19.6%	16.2%	25.5%	26.3%	28.7%	31.5%	65.3%	54.0%	45.3%	36.8%	58.6%	53.7%	33.8%	45.3%
Operating Income (Recurring)	18.7%	19.3%	376.7%	184.1%	85.9%	145.4%	120.0%	54.4%	36.1%	71.0%	51.6%	45.3%	28.3%	31.8%	37.6%
Other Income	-402.6%	-341.7%	-371.3%	-54.2%	-2473.4%	16.9%	44.0%	-59.1%	-10.8%	-0.1%	-67.7%	-74.5%	0.0%	0.0%	26.5%
Income Taxes	-15.9%	46.8%	-176.3%	165.6%	2197.1%	122.8%	115.4%	50.1%	32.1%	66.0%	42.0%	33.4%	27.7%	31.2%	542.5%
Net Income (Reported)	250.7%	46.5%	-13.6%	138.1%	47.3%	127.4%	107.3%	44.2%	36.7%	65.2%	42.0%	36.2%	27.7%	31.2%	556.0%
EPS, fully taxed	183.1%	17.9%	-30.1%	136.8%	25.7%	125.8%	106.2%	43.5%	36.5%	64.5%	42.0%	36.0%	27.6%	31.1%	555.7%
Net Income (Fully Taxed, Recurring)	48.9%	46.5%	494.2%	143.3%	101.0%	127.4%	107.3%	44.2%	36.7%	65.2%	42.0%	36.2%	27.7%	31.2%	34.7%
EPS, fully taxed	20.2%	17.8%	98.0%	141.9%	71.6%	125.8%	106.2%	43.5%	36.5%	64.5%	42.0%	36.0%	27.6%	31.1%	34.6%
Sequential Growth (Q/Q)															
Net Sales - Products	10%	12%	17%	24%		7%	12%	11%	5%		7%	8%	13%	4%	
Net Sales - Services	-1%	3%	81%	-9%		-2%	7%	64%	-10%		-3%	3%	70%	-7%	
Total Net Sales	8%	10%	28%	16%		5%	11%	20%	2%		5%	7%	23%	1%	

Source: Company reports, Banc of America Securities LLC estimates.

ADVANTAGE LEARNING SYSTEMS, INC.
Balance Sheet
($ millions)

FY December	12 mo ended 12/96	12 mo ended 12/97	12 mo ended 12/98	6 mo ended 6/99
ASSETS				
Current assets				
Cash and equivalents	1.76	22.32	$ 14.23	25.22
ST investments	-	6.87	18.87	11.95
Accts receivable	2.52	3.32	8.83	10.18
Inventories	0.54	0.35	0.79	0.85
Prepaid expenses	0.27	0.75	0.66	0.69
Defreed tax asset	-	1.83	2.24	2.41
Total current assets	5.09	35.42	45.62	51.30
PP&E	10.58	11.32	19.10	21.41
Building held for sale	0.75	0.73		
Deferred tax assets	1.60	1.66	1.65	1.61
Intangibles, net	1.45	1.60	1.45	2.44
Capitalized software, net	0.39	0.16	0.19	0.31
Total assets	**19.85**	**50.88**	**67.99**	**77.07**
LIABILITIES				
Current liabilities				
Accts payable	0.33	0.98	1.82	2.02
Deferred revenue	1.44	2.85	3.44	3.69
Payroll and employee benefits	0.58	0.66	1.08	1.88
Retainage & amts due under const. contract	1.15	0.02		
Income taxes payable			2.16	
Other current liabilities	1.02	1.68	2.18	2.11
Distribution payable to shrholders	-	0.56		
Total current liabilities	4.52	6.75	10.68	9.70
Other non-current liabilities	10.45			
Deferred revenue	1.11	1.30	1.40	1.34
Total liabilities	**16.08**	**8.05**	**12.08**	**11.04**
Minority interest		-	0.30	0.27
SHAREHOLDERS' EQUITY				
Common stock	0.14	0.17	0.34	
Additional paid-in capital	0.22	40.76	40.67	
Retained earnings	3.42	1.91	14.64	
Total shareholder's equity	3.77	42.84	55.63	65.76
Total liabilities and shrholders' equity	**19.85**	**50.88**	**68.00**	**77.07**

Source: Company reports.

ADVANTAGE LEARNING SYSTEMS, INC.
Cash Flow Statement
($ millions)

$ millions	12 mo ended 12/96	12 mo ended 12/97	12 mo ended 12/98	**3 mo ended** Jun 99
FY December	F1996	F1997	F1998	
Reconc of NI to net cash provided by op activities				
NET INCOME	4.46	9.70	12.72	4.71
Noncash (inc) exp incl. In NI:			2.09	
Depr. and amort.	0.71	1.48		0.66
(Gain) Loss on disposal of assets	0.20	0.00		
Purchased R&D	3.40	-	0.48	0.18
Deferred inc. taxes	(1.60)	(1.89)	(0.40)	0.09
Change in assets and liabilities:				
AR	(0.76)	(0.79)	(5.46)	0.00
Inventory	(0.31)	0.20	(0.42)	(0.08)
Prepaid expenses	0.06	(0.48)	0.09	0.16
AP and other current liabilities	0.86	1.74	3.76	(2.54)
Retainage and amounts due	1.15	(1.13)	(0.02)	
Deferred revenue	1.03	1.60	0.69	(0.03)
Other			(0.02)	0.09
Net cash provided by op activities	**9.20**	**10.42**	**11.42**	3.24
Cash flows used in investing activities:				
Purchase of PP&E	(9.90)	(1.69)	(8.47)	(1.55)
ST investments	-	(6.86)	(12.00)	(0.11)
Capitalized software devp costs	(0.37)	(0.00)	(0.19)	(0.16)
Other	(4.61)	(0.27)	(0.63)	(0.85)
Net cash used in investing activities	**(14.87)**	**(8.82)**	**(21.30)**	(2.67)
Cash flows from financing activities:				
Eq contribution frm minority partner	-	-	0.30	
Proceeds frm issuance of stock	0.20	46.97		0.00
Proceeds frm LT debt and notes payable to shrholders	10.60	-		
Proceeds from exercise of stock options			0.25	0.05
Payments on debt	(0.15)	(10.45)		
Distributions to shareholders	(3.50)	(17.55)	(0.86)	
Net cash provided by financing activities	**7.15**	**18.97**	**(0.31)**	0.05
Net (decr) incr in cash	1.48	20.57	(10.19)	0.62
Cash & equiv., beginning	0.28	1.76	22.32	24.7
Cash & equiv., end of period	**1.76**	**22.32**	**12.13**	**25.32**

Source: Company reports, Banc of America Securities LLC estimates.

APOLLO GROUP, INC.

BUY

NASDAQ: APOL

PRICE:	$23.75	FYE 8/31	1998A	1999E	2000E
12-MONTH TARGET PRICE:	$38	EPS			
52-WEEK RANGE:	$43-20	Q1(NOV)	$0.13	$0.17	$0.22
FULLY DILUTED SHARES O/S:	79.0 MM	Q2(FEB)	0.10	0.13	0.18
MARKET CAPITALIZATION:	$1,876.3 MM	Q3(MAY)	0.19	0.24	0.30
AVG. DAILY VOL. (3 MOS.):	851,082	Q4(AUG)	0.15	0.21	0.27
SECULAR EPS GROWTH:	30%	FISCAL YR	$0.58	$0.75	$0.96
FY 1999E REVENUES:	$503.0 MM	P/E	40.9	31.7	24.7
MARKET CAP./REVENUES:	373%	P/E/G	136%	106%	82%
5/99 TOTAL DEBT:	$4.0 MM	CALENDAR YR		$0.79	$1.01
5/99 LTD/TOTAL CAP.:	NONE	P/E		30.1	23.5
5/99 ROAE:	26.0%	P/E/G		100%	78%
5/99 SHAREHOLDERS' EQ.:	$224.2 MM				
5/99 BOOK VALUE/SHARE:	$2.83				
DIVIDEND/YIELD:	NONE				

- Apollo Group, Inc., through its wholly owned subsidiary the University of Phoenix (UOP), is the largest for-profit provider of postsecondary education in the United States. The company focuses on the attractive adult learner market and now enrolls more than 80,000 students at more than 130 locations across the world.
- Apollo's learning model emphasizes convenience and real world applicability. UOP students take classes at night, in convenient locations, for five to six weeks at a time and are taught by practitioners, industry experts with real world experience. This structure allows UOP's students to remain employed while they attend school.
- Apollo's business model is very attractive, characterized by visibility and predictability of revenue streams, significant operating leverage and opportunities for margin expansion, and a noncapital-intensive structure that enables Apollo to set up a new location in a short amount of time with little capital investment.
- Since 1991, the company has enjoyed enrollment CAGR of more than 20%, significant margin expansion and expanding market opportunities. We expect these trends to continue given the strong demand for adult education in the United States and abroad, the emphasis on flexibility and applicability in education and Apollo's strong brand name (University of Phoenix).

Company Overview

The University of Phoenix: Consumer-Responsive Adult Education

The U.S. Department of Education estimates that current enrollment in higher education exceeds 15 million, with a forecast of 20 million by the turn of the century. Working adults compose more than 40% of the student population at higher education institutions. Furthermore, almost one-half of new enrollments are adult learners aged 25 and over.

Many universities and colleges have tried to appeal to the swelling interest of working adults in higher education. Extension campuses, weekend programs, evening classes, seminars, workshops and executive programs are examples of new educational products. Nonetheless, we believe traditional universities have still failed to satiate the hunger of working adults for higher education.

More than 20 years ago, Apollo's founder, John Sperling, recognized that working adults offered an expanding market for higher education. Furthermore, he believed there were two primary obstructions to more enrollments by working adults returning to school: (1) administrative; and (2) intellectual.

- **Administrative**
  - Financial sacrifices were necessary to enroll full-time.
  - Job responsibilities and hours must be shifted in order to attend certain classes.
  - Family life must be juggled to accommodate school hours.
- **Intellectual**
  - Working adults want workplace impact from their studies. Universities teach subjects, and often times the material is drowning in theory and perspective unhelpful for the workplace.
  - Traditional universities sacrifice their customers' needs to faculty enrichment. They fail to affect business results because they fail to understand their customers' priorities.

We believe John Sperling and his management team has built a program to suit the needs of working adults.

- **Convenient Access of UOP learning sites.** Campuses and learning centers offer easy access to the freeway, sit in business corridors and facilitate easy job-to-school transition. Alternative delivery is offered in many employer-provided facilities or by electronic media (online, fax, voice, video).
- **Manageable workload of UOP programs.** Students take one class at a time for six consecutive weeks. Traditional institutions require concurrent enrollment in three to four classes. Apollo's sequential enrollment enables students to co-manage the demands of home, work and study.
- **Convenient time of UOP classes.** Classes are in the evening, except for some weekend offerings, and begin at 6:00 p.m. and run until 10:00 p.m. A continuous enrollment pattern (different classes begin almost on a monthly basis) invites aspiring students to enroll within days of their peak interest rather than waiting an extended time (up to 16 weeks) for the next semester to start at a traditional program.

- **Relevance of the UOP assignments**. The curricula are delivered by professionals who can draw from their own workplace experiences, offering exceptionally valuable points of reference to working adult learners who want to know how to apply their lessons now.

  Faculty have a minimum of five and an average of 16 years of experience related to the subject they teach. All faculty hold a master's degree or doctorate. Furthermore, a student/teacher ratio of 15:1 facilitates one of the core components of Apollo's mission: effective, frequent and substantive interaction between students and faculty.

The traditional university model will not work with customers carrying the same objectives and learning proclivities as those served by UOP. UOP is an incredibly unique education model. It masterfully blended the credibility of the academic world with the cost-effectiveness of the business world. Academicians teach subjects, and corporate trainers strive to deliver business results. UOP's outcome-based curricula is designed to build skills in an academic setting that will provide results in a business setting.

In addition, we believe Apollo has an attractive mix of accessibility and exclusivity. UOP campuses are not as selective as Harvard or Stanford, but they do evaluate applicants to ensure that:

- Applicants for undergraduate programs meet age and work experience levels.
- Applicants for graduate programs require evidence of an undergraduate degree and a minimum grade level achievement.
- All applicants bring the stability and maturity of a responsible job.
- Minimum English and math competency scores are achieved.

As a consequence of this novel approach, the composite picture of an Apollo student is a working adult in his or her mid-30s who has been employed for more than nine years, earns more than $50,000 and receives a partial tuition reimbursement from his or her employer.

UOP Programs

The University of Phoenix currently offers multiple degree programs (management, nursing, business, education, counseling) and related areas of specialization at one or more campuses and learning centers or through its distance education delivery systems.

UOP also offers more than 50 certificate programs in the areas of business, technology, nursing, continuing education for teachers, custom training and the environment.

Institute for Professional Development (IPD): Private-Label Education From UOP

Many states erect barriers that have prevented UOP from gaining access. Nonetheless, the appeal of their learning solution is not obstructed. Therefore, Apollo Group has created a private-label business (IPD) to enable the company to sell its learning solutions to working adults under the brand name of a college or university already approved to operate in a state.

IPD appeals to small colleges that cannot afford the start-up costs for their own programs and need the financial boost offered by enrollments in IPD programs. Currently, IPD is under contract with more than 20 regionally accredited private colleges and universities at more than 45 campuses and learning centers in more than 20 states.

Most commonly, IPD contracts with schools from the pool of 1,600 regionally accredited, mostly liberal arts private colleges and universities that have average enrollments below 2,000. The largest education partner enrolls 3,000 overall, and the second largest enrolls 2,200. The other 20+ partners enroll 800–900 students.

Enrollment Results

The company has grown from 68 locations in fiscal 1995 to more than 130 currently, but still counts more than 35 states without an Apollo campus or learning center. New markets are selected based on an analysis of various factors, including the population of working adults in the area, the number of local employers and their educational reimbursement policies, and the availability of similar programs offered by other institutions.

Apollo has enjoyed CAGR in enrollment of more than 20% since 1992.

	1991	1992	1993	1994	1995	1996	1997	1998	1Q99	2Q99	3Q99
Enrollments	17,156	21,163	24,987	30,236	36,848	46,935	56,256	71,355	74,513	81,015	80,729
Yr/Yr Growth		23%	18%	21%	22%	27%	20%	27%	25%	23%	21%

	1991	3Q99
Enrollments	17,156	80,729
CAGR		22.4%

Source: Company reports, Banc of America Securities LLC estimates.

As the table below illustrates, we believe there is a huge untapped domestic market ready for Apollo's learning model.

	Population in 1996	Persons over 25	(1)	Eligible Learners	UOP Enrollment	UOP Penetration
12 States w/ UOP	82,536,192	48,671,680		37,446,661	50,214	0.13%
38 States w/o UOP	180,219,078	110,196,756		82,079,570	-	0.00%
Total U.S. Population	262,755,270	158,868,436	75%	119,526,231	50,214	0.04%

(1) Percentage of the population at or above the age of 25 who graduated from high school.

Source: U.S. Department of Commerce and company documents.

Growth Strategies

Site Expansion

We expect Apollo to continue its strong site expansion plan both in states where Apollo is currently approved to operate as well as in states where Apollo plans to apply for approval. **Recently, the Pennsylvania state board approved Apollo's application to open two sites, and we expect UOP centers in Philadelphia and Pittsburgh by year-end.** Pennsylvania, in our view, could become one of the largest markets for UOP with as many as 18 learning centers and several thousand student-customers.

We believe Apollo will receive approval from New Jersey, arguably one of the toughest states to win such approval from, within the year. We would view approval from this state as very significant not just for Apollo, but for proprietary higher education in general, as approval would signify a marked shift in opinion for a commission that has historically been resistant to for-profit education in the state.

We believe the company's start-up ramp continues to boost visibility into sustained revenue growth of more than 30% per year. New market opportunities in NCA-approved British Columbia, Maryland and Oklahoma must queue up behind surging growth in Michigan, Florida, Louisiana, Washington and Oregon where we expect to see an attractive enrollment ramp for several years.

- Applications are on file with Massachusetts and New York.
- Applications with Ohio, Ontario and New Jersey are not far behind.
- We believe more than six other state applications are in the company's pipeline.

Corporate Alliances

We believe UOP is an attractive education partner for corporations that want training and education for their employees but lack either content or delivery systems:

- **Content.** UOP has experience delivering career-focused business education for a working adult population.
- **Delivery.** UOP's strengthened distribution network via its online server can bring training and education to the desktops of employees.

Apollo and AT&T became education partners in 1995 when Apollo began to provide courses for credit at AT&T's internal training facilities (AT&T School of Business). AT&T employees can transfer some of their credit to UOP, and this generates leads for UOP enrollment.

Apollo maintains strong relationships with other corporations, including Allied Signal, American Express, Fujitsu, Honeywell, IBM, Kodak and Motorola.

We also believe the company will continue to expand its corporate alliances because of its expanding base of alumni, as 7-15% of UOP alumni go for follow-on education or degrees. The alumni are living billboards for UOP, which inside the conference rooms of corporate America can be an effective marketing technique.

New Channel Relationships

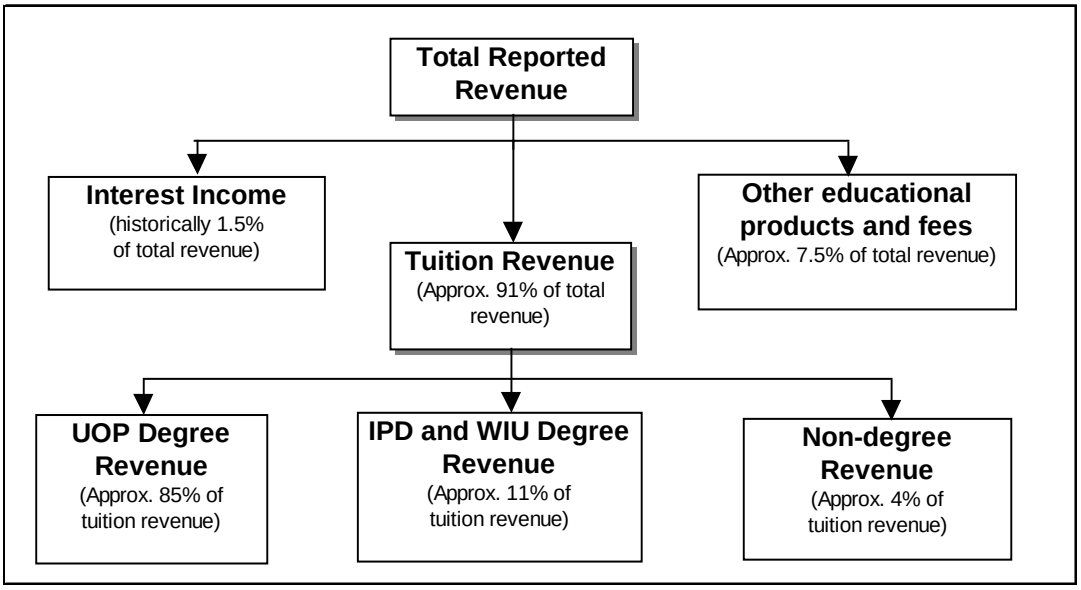
UOP signed an articulation agreement with the Florida State Board of community colleges. This agreement defines how credits obtained at any one of Florida's 28 community colleges can be applied toward a UOP degree in Florida.

We believe Florida community colleges can be a significant source of enrollment for UOP. CC systems are far larger than four-year systems, and CC credits are not always accepted by traditional four-year schools. Therefore, we have found that articulation agreements become a large feeder system as students seek to complete a four-year degree. For example, a large number of incoming students in Arizona are graduates of Arizona Community Colleges.

The Business Model

Recurring enrollments from students in degree programs offer high predictability on revenues as well as the cornerstone of an attractive business model. Established tuition levels, controllable expenses and leverage on its centralized management structure offer visibility and opportunities for margin improvement. With favorable secular trends, a leading brand, a highly fragmented market and an attractive business model, the company can achieve revenue and earnings growth of 30% for the next three to five years, in our opinion.

REVENUE BREAKDOWN



Source: Company reports and Banc of America Securities LLC estimates.

Tuition

It has become somewhat customary for UOP to increase tuition by roughly 5% per year. Our estimates are based on that policy continuing. Revenue growth, therefore, is delivered by the combination of enrollment growth and tuition price hikes.

Seasonality and Predictability

Apollo experiences some seasonality in earnings because: (1) enrollment slows during the holiday season (Christmas and New Year's), which falls during the company's second quarter; and (2) enrollment is highest during the first quarter (including the traditional start date of September) and the third quarter (February-April), when there are no holiday breaks.

IPD Revenue

IPD revenues are approximately 11-13% of the company's consolidated tuition revenues. Its revenue and expenses are a function of enrollments in the private-label programs delivered to the education partners. IPD receives approximately 40–50% of the revenues generated by the students enrolling in the IPD programs.

IPD enjoys an expense-sharing arrangement with its partners. IPD's expenses are, in general, its share of program administration, student services and classroom lease expenses. In addition, some of these services (student services, for example) are leveraged off of the corporate office. Consequently, IPD's operating margin is approximately 40%.

College for Financial Planning (CFPI)

With current enrollments of more than 22,000 students, CFPI is one of the largest U.S. providers of financial planning education programs. CFPI currently offers text-based self-study programs for students preparing for the Certified Financial Planner designation and other financial-related designations.

CFPI currently offers a Masters of Science degree with a concentration in Financial Planning and the following nondegree programs: Accredited Asset Management Specialist, Certified Financial Planner, Charted Mutual Fund Counselor, Foundations in Financial Planning, Chartered Retirement Planning Counselor, Accredited Tax Advisor and Accredited Tax Preparer.

Apollo plans to offer these same programs in a classroom-based format and also through the Internet or online-based formats as well. Most of CFPI's students are working, and more than 75% have four or more years of college education. **We believe the CFPI's customer base may eventually feed enrollment growth at UOP learning sites nationwide.**

Expenses

We believe the success of the business model is, in great part, attributable to the fact that UOP is a lean, teaching machine whereas traditional providers are stodgy, research institutions. UOP campuses do not support stadiums, dormitories, student unions or multiple libraries. All facilities are leased.

Start-up expenses—including marketing expenses—for new sites are expensed. Approximately 50% of start-up expenses flow through instructional expenses, and 50% flow through selling and promotional expenses.

We estimate that pre-opening expenses for a new UOP campus in a new market will be approximately $180,000. A new campus in a new state is more costly than a new campus in an existing state, primarily because of the greater marketing expenses needed to create awareness in areas unfamiliar with University of Phoenix. Conversely, a new learning center in an established market may cost as little as $25,000. The bulk of expenses are leasehold improvements and small marketing costs. UOP learning centers are extensions of main campuses but essentially are classrooms. The new learning center in Chula Vista, for example, relies on San Diego for many of its operating needs.

TYPICAL START-UP PATTERN FOR A NEW UOP LOCATION IN A NEW MARKET

Quarters	Pre-opening	1	2	3	4	5	6	7	8
Revenue		$85,000	$207,000	$320,000	$480,000	$638,000	$830,000	$970,000	$1,200,000
Profit (Loss)		($148,000)	($118,000)	($140,000)	$20,000	$50,000	$200,000	$230,000	$300,000

$180,000 investment required to open doors

First Anniversary.

Source: Company reports and Banc of America Securities LLC estimates.

We expect new facilities to incur operating losses during three quarters following the opening. The company's breakeven point for new campuses has shortened to within one year of opening from its traditional second quarter of the second year of operation. We believe much of the acceleration in growth and profitability is attributable to:

- Expanding brand throughout the nation.
- More effective pre-marketing (aided by enthusiastic local employers).
- Pent-up demand from working adults who had few choices for convenient adult learning prior to Apollo.

Instruction and Services

We believe the long operating history of the company also offers high visibility and predictability on expenses. Cost of instruction and services is the primary expense line for Apollo and surpasses 60% of revenue on an annual basis.

Apollo manages instruction costs better than most school operators because:

- Faculty do not enjoy the tenured benefits and salaries of average university faculty members.
- Faculty are part-time.
- Faculty are hired on a per-course basis at approximately $50–60 per hour.

These costs are primarily related to the delivery and administration of the company's educational programs, including faculty compensation, administrative salaries for departments that directly serve students, educational materials, facility leases and rent, amortization of educational program production costs, bad debt expense and depreciation and amortization of property and equipment.

The centralized nature for some of the components—such as program development costs—allows the company to gain leverage as the number of centers grows. However, in our view, the expense provides little room for improvement because small class size is expected to remain a key selling point for Apollo.

Selling and Promotional Expenses

Selling and promotional (S&P) costs include marketing salaries, direct-response and other advertising, promotional materials and related marketing costs.

Marketing includes broadcasting UOP's name on the radio, in print, through the mail and electronically. UOP enlists the recruiting energy of enrollment reps who follow up on the leads received by the corporate office. UOP also visits businesses and other organizations in order to recruit and interview prospective students.

General and Administrative Expenses

General and administrative (G&A) costs consist primarily of administrative salaries, rent, depreciation, amortization and other related costs for departments that do not directly serve the market—such as executive management, information systems, corporate accounting and human resources.

We expect the company to continue to gain G&A leverage for the following reasons: (1) outsourcing of financial aid filing process to Arthur Anderson; (2) implementation of PeopleSoft back-office system; (3) reduced program review expenditures; and (4) consolidation of the Online campus to Phoenix.

Operating Margin

The company's operating margin has expanded impressively, in our view, over the past few years, in spite of steady investment in new campuses and learning centers. The operating leverage is achieved from the centralized nature of expenses. For example, curricula are developed centrally. Leverage emerges from using centrally developed curricula at all campuses. This offers Apollo a competitive advantage over institutions that employ site-based or faculty-based curricula development. In addition, operating leverage emerges from continuing students who pay the same tuition as new students but generate little, if any, marketing costs and no admissions-related expenses. Several other expenses are centrally delivered including payroll, human resources and regulatory compliance.

The company also provides instruction at more than 300 off-site locations such as offices, hospitals and conference centers. We estimate that as many as 15% of classes are offered in these locations where the company can save on facilities expenses, which equal 5–10% of revenues for on-site classes.

Potential Earnings Surprises in Fiscal 2000 and Beyond From New "Profit Zones"

We believe Apollo's diverse educational products and broadening distribution network offer multiple opportunities for positive earnings surprises in excess of our estimate of EPS growth of 30%. We believe the primary source of an earnings surprise will always be stronger-than-expected enrollment growth at UOP campuses and learning centers. Nonetheless, the combination of other factors can provide earnings surprises, too. For example, Apollo offers "products" outside of its core degree programs in new profit zones, such as IT training:

- We believe the company's strong brand (UOP) should fuel enrollment in IT training programs—an area that continues to experience strong demand worldwide. Management pointed to a reported 300,000-person shortage for IT professionals and continued customer emphasis on the benefits of certification as the primary drivers for establishing a presence in the IT education market.

Management wants to surpass the half-life of IT training offered by other IT training companies. It intends to integrate extensive theory with hands-on training in order to provide students with a foundation on which to build a career in IT rather than just a quick fix for a particular IT task or two. Apollo's IT training is expected to be a cross between a B.A. in software engineering and the training offered by typical IT trainers.

Apollo's IT programs will be offered in three ways:

- Embedded in degree programs.
- Offered as six- to nine-month postgraduate programs.
- Offered as short IT training courses.

Under the final option, for example, courses likely would be offered during the workday when most IT professionals are accustomed to training. This daytime use of UOP's facilities would increase utilization with attractive incremental contributions to revenue.

We expect to see upside to our revenue estimates based on a faster-than-expected ramp from the company's roll-out of its IT certification programs in Orlando and Phoenix. The programs will run for six weeks and train people for certification on Microsoft and Novell products.

The tables below illustrates several possible scenarios for the IT certification program's eventual contribution to overall revenues. We believe the IT certification programs could become a significant contributor to revenues in the coming years, and because of the programs' higher profit margin than UOP tuition revenues we believe there could be additional margin expansion beyond our current projections as the program rolls out.

IT PROGRAMS COULD BECOME A SIGNIFICANT CONTRIBUTOR
Assuming six-month programs and a price of $7,500 per program

# of Labs: 18						
# of Students/Class	15		20		25	
# of Classes/Day	1	2	1	2	1	2
Annual Revenues ($ MM)	$4.1	$8.2	$5.4	$10.6	$6.8	$13.6

# of Labs: 36						
# of Students/Class	15		20		25	
# of Classes/Day	1	2	1	2	1	2
Annual Revenues ($ MM)	$8.2	$16.4	$10.8	$21.2	$13.6	$27.2

# of Labs: 120						
# of Students/Class	15		20		25	
# of Classes/Day	1	2	1	2	1	2
Annual Revenues ($ MM)	$27	$54	$36	$72	$45	$90

Source: Banc of America Securities LLC estimates.

Valuation and Investment Conclusion

We believe Apollo should trade at a premium to other names in the postsecondary education group because of the following:

- **Lower reliance on Title IV revenue** than any of its peers. Many of the company's peers enroll younger students who are less advanced in their careers and more likely to default on loans. None of the peers see Apollo-like levels of employer tuition reimbursement for their students. Based on these factors, we believe the company's revenue has limited risk exposure.
- **Easier scalability** than its peers because the minimal capital needed to open a learning center makes it less expensive for Apollo to gain market share.
- **Greater diversity in its product offerings** than its peers as well as the expanding online offerings insulates Apollo from changes in the workplace.
- **High levels of geographic diversity** from a presence in 31 states and more than 100 learning sites reduces Apollo's risk from competitive pressures as well as localized economic pressures.
- **It has one of the longest operating histories as a public company** in the group, with an unbroken string of 20 reported quarters without a disappointment.

Investment Risks

Apollo's schools are subject to extensive regulation by federal and state government agencies and accrediting bodies. Because of the company's dependence on student financial aid, a reduction in government tuition assistance could lead to lower enrollments or require the company to seek alternative sources of financial aid for its students. The schools compete with public and private colleges, which may offer similar programs at cost-competitive tuition rates.

Competition

We estimate that Apollo's combined enrollment of approximately 80,000 makes it the largest private institution of higher education in the country, suggesting an extremely fragmented industry. The U.S. Department of Education estimates that 15 million students are enrolled in higher education programs in one of 1,500 two-year colleges, 2,200 four-year colleges or 6,500 vocational/technical schools. Yet, no site has more than an estimated 2,000 students and each site faces competition primarily from the local state-funded and private colleges and universities, where students choose from schools based on programs, cost and brand name.

Some of these institutions offer programs similar to Apollo's. For example, UOP's San Jose campus faces competition from neighboring Santa Clara, San Jose State and DeAnza College satellite campuses. Public institutions can offer programs at lower tuition rates because of the substantial government subsidies, grants and tax-deductible donations that they receive. Many private, nonprofit universities also receive financial subsidies in the form of tax-deductible contributions. Apollo, as a for-profit business, receives no tax-subsidized support.

Nonetheless, Apollo's prices fare well in comparison with most institutions: Average tuition levels are $11,128 for private colleges and institutions, $2,057 for public universities and $6,310 for the University of Phoenix.

We believe working adult students—who attend UOP campuses—care more about qualitative features than price. Most students do not place primary emphasis on price either because of their own financial resources or the available tuition reimbursements from their employer. **These students care about convenience, class size and relevance of the curricula.**

In our view, most of the local competition cannot compete with Apollo programs on a curricular basis. We believe UOP campuses will sustain their enrollment growth by capitalizing on their evolving brand name recognition in working adult, career-focused, convenient education.

Apollo Group, Inc., has pioneered the delivery of degree-oriented, higher education programs for working adults. With nearly $500 million in revenues, it has become the leader in this emerging market by providing a flexible, time-efficient, and cost-effective educational delivery system geared specifically toward the needs of the over-25 student population within the $200 billion postsecondary market. Apollo enrolls more than 80,000 students at more than 130 campuses and learning centers in 34 states, Puerto Rico and London, England.

APOLLO GROUP, INC.

Quarterly Sales and Earnings Model
($ millions)

Year Ending August 31	1Q '98A	2Q '98A	3Q '98A	4Q '98A	FY '98A	1Q '99A	2Q '99A	3Q '99A	4Q '99E	FY '99E	1Q '00E	2Q '00E	3Q '00E	4Q '00E	FY '00E
Total Revenues	89,200	86,464	106,783	108,635	391,082	117,010	110,660	139,473	135,671	502,814	143,799	143,470	177,180	171,519	635,967
Costs and Expenses															
Instruction Costs and Services	51,863	53,436	61,093	64,096	230,488	67,668	65,619	78,873	78,282	290,442	83,015	85,622	98,424	98,716	365,777
Selling and Promotional	10,566	10,770	11,504	16,195	49,035	17,932	18,517	18,783	20,891	76,123	21,182	22,065	25,426	24,988	93,660
General and Administrative	9,206	9,460	8,479	8,142	35,287	9,125	9,536	10,077	8,900	37,638	11,216	12,195	13,643	12,178	49,232
Total Costs & Exp.	71,635	73,666	81,076	88,433	314,810	94,725	93,672	107,733	108,074	404,204	115,413	119,882	137,493	135,881	508,669
Operating Income	17,565	12,798	25,707	20,202	76,272	22,285	16,988	31,740	27,597	98,610	28,385	23,588	39,687	35,638	127,298
Pretax Income	17,565	12,798	25,707	20,202	76,272	22,285	16,988	31,740	27,597	98,610	28,385	23,588	39,687	35,638	127,298
Income Taxes (fully taxed @ 40%)	7,026	5,119	10,283	8,081	30,509	8,914	6,833	12,780	11,039	39,566	11,354	9,435	15,875	14,255	50,919
Net Income	10,539	7,679	15,424	12,121	45,763	13,371	10,155	18,960	16,558	59,044	17,031	14,153	23,812	21,383	76,379
EPS	$0.13	$0.10	$0.19	$0.15	$0.58	$0.17	$0.13	$0.24	$0.21	$0.75	$0.22	$0.18	$0.30	$0.27	$0.96
					Cal '98E	0.61			Cal '99E	$0.79					
Avg. Shares Outstanding	78,689	79,035	79,250	79,372	79,086	79,159	79,195	78,914	79,024	79,073	79,174	79,304	79,434	79,544	79,364
Actual Enrollments	59,578	65,741	66,759	70,554	70,554	74,513	81,015	80,700							
Yr/Yr Growth	24.8%	25.9%	29.2%	25.6%	25.6%	25.1%	23.2%	20.9%							
Margin Analysis															
Instruction Costs and Services	58.1%	61.8%	57.2%	59.0%	58.9%	57.8%	59.3%	56.6%	57.7%	57.8%	57.7%	59.7%	55.6%	57.6%	57.5%
Selling and Promotional	11.8%	12.5%	10.8%	14.9%	12.5%	15.3%	16.7%	13.5%	15.4%	15.1%	14.7%	15.4%	14.4%	14.6%	14.7%
General and Administrative	10.3%	10.9%	7.9%	7.5%	9.0%	7.8%	8.6%	7.2%	6.6%	7.5%	7.8%	9.0%	7.7%	7.1%	7.7%
Operating Margin	19.7%	14.8%	24.1%	18.6%	19.5%	19.0%	15.4%	22.8%	20.3%	19.6%	19.7%	16.4%	22.4%	20.8%	20.0%
Pretax Margin	19.7%	14.8%	24.1%	18.6%	19.5%	19.0%	15.4%	22.8%	20.3%	19.6%	19.7%	16.4%	22.4%	20.8%	20.0%
Tax Rate	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.1%	40.0%	40.0%	40.0%	40.0%	40.0%
Net Margin	11.8%	8.9%	14.4%	11.2%	11.7%	11.4%	9.2%	13.6%	12.2%	11.7%	11.8%	9.9%	13.4%	12.5%	12.0%
PERCENT CHANGE (YR/YR)															
Total Revenues	33.2%	40.2%	37.2%	41.0%	37.9%	31.2%	28.0%	30.6%	24.9%	28.6%	22.9%	29.6%	27.0%	26.4%	26.5%
Instruction Costs and Services	30.9%	40.3%	40.2%	38.0%	37.4%	30.5%	22.8%	29.1%	22.1%	26.0%	22.7%	30.5%	24.8%	26.1%	25.9%
Selling and Promotional	24.6%	26.8%	35.5%	66.5%	39.4%	69.7%	71.9%	63.3%	29.0%	55.2%	18.1%	19.2%	35.4%	19.6%	23.0%
General and Administrative	36.4%	43.6%	30.0%	40.6%	37.6%	-0.9%	0.8%	18.8%	9.3%	6.7%	22.9%	27.9%	35.4%	36.8%	30.8%
Operating Income	44.6%	50.8%	33.5%	33.9%	38.7%	26.9%	32.7%	23.5%	36.6%	29.3%	27.4%	38.8%	25.0%	29.1%	29.1%
Pretax Income	44.6%	50.8%	33.5%	33.9%	38.7%	26.9%	32.7%	23.5%	36.6%	29.3%	27.4%	38.8%	25.0%	29.1%	29.1%
Income Taxes	44.6%	50.8%	33.5%	33.9%	38.7%	26.9%	33.5%	24.3%	36.6%	29.7%	27.4%	38.1%	24.2%	29.1%	28.7%
Net Income	44.6%	50.8%	33.5%	33.9%	38.7%	26.9%	32.2%	22.9%	36.6%	29.0%	27.4%	39.4%	25.6%	29.1%	29.4%
EPS	42.2%	48.3%	31.0%	31.6%	36.3%	26.1%	32.0%	23.4%	37.2%	29.1%	27.4%	39.2%	24.8%	28.3%	28.8%

Source: Company reports and Banc of America Securities LLC.

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APOLLO GROUP, INC.
Balance Sheet
($ millions)

Year Ending August 31	Fiscal 1996	Fiscal 1997	Fiscal 1998	3Q '99
Balance Sheet				
Assets				
Cash & Equivalents	51982	58928	52326	44104
Restricted Cash	11285	19927	22713	28063
Short-term Investments	13273	27182	27538	29884
Receivables, net	25985	32040	61282	73371
Inventory	3112	2220		
Deferred tax Assets	2972	2873	6203	7216
Prepaid, other	532	633	3945	6370
Total Current Assets	109141	143803	174007	189008
Property & Equip., net	18925	25251	46618	68081
Educational program costs, net	1446	1836		
Non-operating property	4321	5611	10807	
Long Term Investments		14747	17929	20826
Goodwill	2459	2283	41398	40259
Deposits, other	1558	1379	14401	16148
Total Assets	137,850	194,910	305,160	334,322
Liabilities				
Current portion, LT Liabilities	140	295	333	346
Accounts payable	7742	7714	9684	12857
Other accrued Liabilities	10925	11449	21311	14619
Income taxes Payable	261	253	1007	
Student Deposits, Def. Tuition	35736	47683	63239	78479
Total Current Liabilities	54,804	67,394	95,574	106,301
Long Term Liabilities	1773	2494	3750	3916
Deferred Tax Liab's	659	705	1436	1990
Commitments & Contingencies	0	0		
Deferred Tuition Revenue			4592	2375
Shareholder's Equity				
Preferred Stock	0	0		
Class A Common	65	66	101	102
Class B Common	1	1	1	1
Additional Paid-in capital	41201	51521	80677	97828
Retained Earnings	39347	72729	119023	161676
Cum. Transl. Adjustment			6	-12
Treasury Stock			0	-39855
Total Shareholder's Equity	80614	124317	199808	219740
Liab. And Shareholder's Equity	137,850	194,910	305,160	334,322

Source: Company reports.

APOLLO GROUP, INC.
Cash Flow Statement
($ millions)

Fiscal Year ended August 31	1997	1998	Q3:1999
Cash Flows from Operating Activities			
Net Income	$ 33,379	12,436	18,960
Adjustments			
Depreciation & Amortization	8,291	3,359	5,481
Provision for uncollectible	2,523	850	1,252
Deferred Income Taxes	145	(689)	(826)
Tax benefits of stock options exercised	7,508	440	232
Decrease (increase) in assets			
Restricted cash	(8,642)	1,124	(2,785)
Receivables, net	(8,578)	(13,082)	1,566
Other assets	970	110	(2,301)
Increase in liabilities			
A/P & Accrued Liabilities	488	2,082	2,283
Student Deposits, Deferred Rev	11,947	3,850	4,113
Other	927	60	191
Net Cash provided by operating activities (CFO)	**48,958**	**$ 10,540**	**$ 28,166**
Cash Flows from investing activities			
Purchase of marketable securities	(51,634)	(10,801)	(3,175)
Maturities of marketable securities	22,983	21,070	3,310
Purchase of other assets	(3,427)	(2,545)	(665)
Investment in Joint Venture			0
Net additions to Property/Equipment	(12,699)	(12,214)	(12,831)
Cash paid for acquisitions, net of cash acquired		0	0
Net Cash used for investing activities	**(44,777)**	**(15,297)**	**(11,739)**
Cash Flows from financing activities			0
Purchase of common stock		0	(25,383)
Issuance of common stock	2,812	891	1,739
Tax benefits of stock options exercised	-	0	0
Payments on long term debt	(50)	0	0
Net cash provided by financing activities	**2,762**	**891**	**(23,644)**
Effect of currency translation	3	(1)	(15)
Net increase (decrease) in cash & equivalents	**6,946**	**(3,867)**	**(7,232)**
Cash & Equivalents at beginning of period	51,982	56,193	51,336
Cash & Equivalents at end of period	**$ 58,928**	**$ 52,326**	**44,104**

Source: Company reports.

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ASYMETRIX LEARNING SYSTEMS, INC. NOT RATED

NASDAQ: ASYM, $6-7/32

- Asymetrix Learning Systems, Inc., provides a fully integrated solution for companies implementing an e-learning initiative. The company's offerings include: (1) a scaleable, open platform for deploying, managing and assessing enterprisewide online learning; (2) versatile online authoring products; and (3) consulting and custom development services that enable clients to plan, design, develop and implement companywide online learning solutions.
- The company recently launched click2learn.com, a learning content portal on the Internet that targets horizontal (skills) and vertical (industries) markets. The site will aggregate content, enable individuals to author and publish content, and can be set up as a seamless addition to any corporation's internal learning initiative.
- Asymetrix Learning has a fully integrated solution that could provide a competitive advantage as the Fortune 1000 grapples with migrating education, training and knowledge management onto internal intranets and the Internet.
- Asymetrix Learning has a solid blue chip and Fortune 100/1000 customer base that includes AT&T, MCI, Boeing, Lucent Technologies and Fidelity.
- The company markets its online learning products and professional services through its direct sales force, targeting sales and marketing efforts to Fortune 1000 companies, educational organizations and government agencies. Asymetrix also conducts a variety of marketing programs to promote its products and services including direct mail, advertising, seminars and trade shows.

Company Description and Investment Thesis

With the consistent and rapid migration from instructor-led training to computer-delivered training, businesses need a comprehensive solution to build, deploy and manage Internet-based digital training content. Asymetrix provides the products and services that, in combination, are a comprehensive solution for online learning.

Corporations of more than 100 employees **spent more than $60 billion on training in 1998**. Most of this was spent internally on instructor-led training. While we recognize that $60 billion speaks to more than just spending on products and services like those offered by Asymetrix, we believe the $60 billion figure underscores the potential of the market.

Asymetrix is positioned to benefit from several strong secular trends that are driving growth in workplace learning and corporate training:

- **Shortening product cycles.** New products are being introduced and older products are becoming outdated at an increasingly rapid rate. Businesses are stretched to "teach" their customers and employees about the new products.
- **Increasing product complexity.** The computer-centric workplace in which we operate mandates that employees and customers have readily available access to the knowledge needed to use the tools.
- **Intensifying competition.** Intellectual capital is becoming the key differentiator on the increasingly competitive business landscape. Therefore, knowledge is the raw material that, when refined, becomes intellectual capital and workplace learning becomes the vehicle to deliver that knowledge.

We believe the key statistic, however, is that according to International Data Corporation (IDC), the U.S. market for web-based or online training **will exceed $5.5 billion by 2002, representing a compound annual growth rate of nearly 95%** from $197 million in 1997.

Company Background

Asymetrix Learning was founded in 1984 by Paul Allen, a co-founder of Microsoft Corporation, and for its first 10 years the company focused on technology development. In 1995, Asymetrix Learning refocused its efforts on the development and marketing of online authoring products and learning management systems designed to take advantage of the strengths of the Internet. The company decreased, eliminated or spun off research and development and product lines that were not directly related to this effort. Asymetrix Learning continues to invest aggressively in its core technologies and believes its future success depends on continued product development.

The company recently launched click2learn.com, a learning content portal on the Internet that targets horizontal (skills) and vertical (industries) markets. The site will aggregate content, enable individuals to author and publish content, and can be set up as a seamless addition to any corporations internal learning initiative.

Asymetrix's Offerings

Asymetrix offers both products and services:

- Self-authoring products, such as those built by Asymetrix (Toolbook II Assistant and TBII Instructor), are **performance support tools that enable even the most computer-challenged person to build a digital training title**. The Toolbook products require only two ingredients: a computer and some subject matter expertise. Assistant was designed for trainers and educators to create online learning applications, while Instructor was designed for use by professional software developers.

- Librarian is the management tool built to manage an array of content from all content providers. Librarian enables managers to organize, deploy, assign, track performance, collect feedback, monitor effectiveness and generally administer the users and the content in a company's training library. As an open platform, Librarian will accommodate training titles from multiple vendors. **Librarian could also serve as a tool that enables the company to cross-sell its professional services.**

- **Professional services to jump-start or provide comprehensive support to digitize a company's training.** Asymetrix provides customers with needs identification and assessment, learner analysis and training performance evaluation services. In addition, the company provides custom development (which includes planning, design, development, administration and evaluation of learning applications) training classes for its products and customer support services.

Click2Learn.com Leverages the Authoring Tools Onto the Internet

Asymetrix's Click2learn.com is a content portal designed to combine online learning content and a free authoring and publishing system. Users can either buy courses from the online catalog using the e-commerce functions embedded in the site, or author and then publish their own content using Asymetrix's proprietary software and technology. Authors/publishers would then receive a royalty if and when their course content was purchased by customers of click2learn.com

Consumer Goals

The company plans to structure the site around both horizontal and vertical portal models, identifying key industries and key skill sets that will generate traffic through click2learn. The company expects to set up partnerships and agreements with other industry portals and content aggregators to drive viewers looking for learning content to the click2learn.com site. In this way, click2learn.com could become the outsourced learning channel for both horizontal/skill-set and vertical/industry portals.

Much of the content could be structured around our info nugget concept—small, free, bite-size pieces of learning content (even as small as two- to three-minute lessons) that exemplify just-in-time or only-what-you-need learning that we believe will characterize the future of online learning.

Asymetrix/click2learn.com purchased Pixelmedia just for this purpose. Pixelmedia specializes in developing two-minute learning objects and will become click2learn.com's 2MinuteTutor provider. Pixelmedia already has an extensive library of info nuggets, and the content could "pull" learners into the site, where they could be shown additional content for sale.

Corporate Focus

Click2learn.com can also be set up on an Application Service Provider model, whereby larger organizations use click2learn.com as their portal while maintaining their own internal intranet look and feel. The seamless integration of the company and the provider takes the administrative hassle away from the customer, yet provides the customer's learners with a large well of valuable content.

Click2learn.com has a wide variety of content providers already signed up.

The Asymetrix Solution: A Comprehensive Product and Service Offering

Asymetrix Learning attacks the online learning market with a comprehensive, fully integrated solution providing: (1) a scaleable, open, Internet-centric platform for deploying, managing and assessing enterprisewide online learning; (2) versatile online authoring products; and (3) consulting and custom development services that enable clients to plan, design, develop and implement companywide online learning solutions.

Characteristics of the Asymetrix solutions are:

- **Tightly integrated product offerings.** Asymetrix Learning provides authoring products for users with a broad range of skills, and a learning management system that collectively provides a technology platform for the development, deployment and management of online learning applications. The company's online authoring products and learning management system are tightly integrated, ensuring that online learning applications created with ToolBook II Instructor or ToolBook II Assistant authoring products can be modified, reused and managed throughout an organization.

- **Open approach.** The company's solution supports relevant open standards and Internet protocols, including TCP/IP, HTML, Java and ActiveX, enabling organizations to capitalize on the advantages of the Internet, such as "anywhere, anytime" accessibility, cost-effective deployment, ease of updating and enhanced tracking and measurement capabilities. The company's learning management system uses the Open Library Exchange ("OLX"), a published, specified interface that enables organizations to integrate learning applications authored from a variety of sources and facilitates the customer's ability to incorporate emerging technologies rapidly.

  Flexibility. Organizations can purchase a comprehensive online learning solution consisting of both products and services or individual, stand-alone products that may be used by internal application teams, confident in the fact that their initial work can be expanded into an enterprisewide solution at a later date.

  Manageability. Asymetrix's Librarian management system provides for centralized and scalable administration of online learning applications, and allows organizations to track performance, collect feedback and monitor application effectiveness.

  Comprehensive professional services. The company's professional services address a wide range of corporate education and training needs, including needs assessment, creation of online learning applications, assimilation of legacy and third-party content and performance evaluation services. The company's custom development services can also supplement customers' own internal development efforts to enable more rapid development and deployment of learning applications, the creation of larger and more complex learning applications and access to

instructional design or technical, production or project management expertise not available internally.

LEARNING MANAGEMENT SYSTEM

The Asymetrix Learning Librarian:

- Provides a scaleable solution.
- Manages learning activities.
- Tracks learners and courses.
- Measures training effectiveness.
- Is open and standards-based.

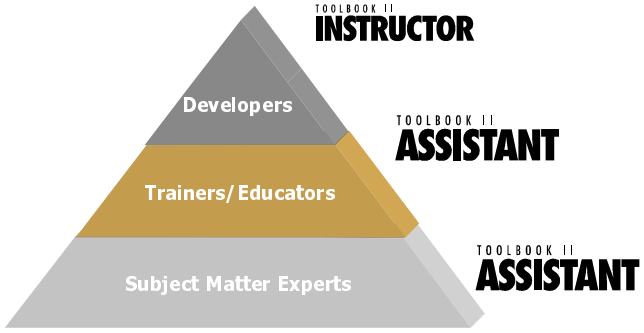
The ToolBook II Librarian is a training technology platform that takes advantage of the interactive, two-way communications offered by the Internet and gives customers extensive course management capabilities.

The company's ToolBook II Assistant and Instructor software products enable content specialists to easily create computer-based training programs. Asymetrix customers can take their training programs beyond computer-based training, to Internet-based learning.

Asymetrix Learning provides a broad range of learning tools for authoring applications and content that can be deployed over the Internet or corporate intranets. Furthermore, the company's products offer a variety of digital media tools that allow content developers, instructional designers and professional trainers to incorporate multimedia into their courses, creating an engaging, captivating online training experience.

THE ASYMETRIX LEARNING SOLUTION

The Best Products and Services to Create Online Learning Content



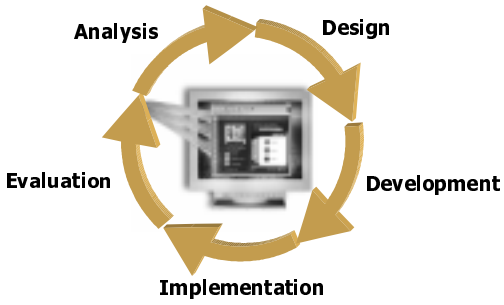
Source: Company documents.

Services

Asymetrix Learning also assists companies in authoring, distributing and managing their online training programs through its consulting and training services. Adopting and deploying an online training system within large corporations and creating sophisticated courses requires strong services support and often large-scale consulting expertise.

We view the sale of the combination of products and services as a smart strategic move, as it positions the company to parlay outsourcing trends into profits, both from consulting fees and by increasing software sales to consulting customers.

ASYMETRIX LEARNING'S PROFESSIONAL LEARNING SERVICES



Source: Company documents.

Driving Sales Momentum

The company sells its products using a direct-sales method, which over the long term should help produce higher margins than telesales or an indirect model. The company expects to continue to build its sales force and to spend significant resources to build brand equity, recognition and customer momentum.

Management

Paul Allen and the other officers and directors as a whole, own 42% and 5%, respectively, of the company's stock. The management team is composed of experienced professionals from the tech industry:

- **Paul Allen** continues to contribute to the company's technological direction as a member of the company's Board and as a technology advisor.
- **James Billmaier**, the CEO since July 1995, previously served as vice president and general manager of the Network Software Products Business of Sun Microsystems in addition to serving as vice president of marketing and business development for SunSoft. Prior to Sun, Mr. Billmaier worked at MIPS Technologies and Digital Equipment in various senior operational and marketing positions.
- **Kevin Oakes**, Asymetrix's president, founded Oakes Interactive, TopShelf Multimedia and Acorn Associates, all three of which were purchased by Asymetrix in 1997.

Asymetrix Learning Systems, Inc., based in Bellevue, Washington, is a leading provider of enterprisewide online learning solutions designed to enable organizations to capture, deploy and manage knowledge and learning more effectively. The Asymetrix total enterprise online learning solution consists of a scaleable, corporatewide technology platform, a versatile set of leading authoring products and a consulting capability that helps clients make effective, pervasive online learning a reality.

CALIBER LEARNING NETWORK, INC. NOT RATED

NASDAQ: CLBR, $3-13/16

- Caliber Learning Centers are state-of-the-art centers primarily used by prominent universities and major corporations to reach broadly dispersed working adult learners.
- We believe the migration from c-learning to e-learning will continue to transform the way people learn, particularly as technology constraints are reduced by innovation. The distance- and online-learning markets present an enormous opportunity for capable, technologically advanced providers who can also repurpose content for digital transmission.
- The Caliber Learning Network could be a model of the campus of the future. We believe the market is eager for an education delivery system that combines the human interaction of c-learning with the scalabilty and reach of e-learning.
- Leading universities such as Johns Hopkins and Wharton and corporations such as Compaq, Microsoft and Intel are already using the Caliber system. Caliber serves a large and rapidly growing market and has a solid management team, prestigious partners and strong unit economics.
- In July 1999, Caliber launched an e-commerce/training site, Caliber.com. The company anticipates that Caliber.com will be a major part of Caliber's future as a distance-learning provider. With Internet access and usage growing by leaps and bounds, Caliber will be able to now service an even wider potential customer base than was possible utilizing just the Learning Center model.

Business Description

Caliber was founded as a joint venture between MCI Communications Corporation and Sylvan Learning Systems in November 1996, bringing together the educational services expertise of Sylvan and the technology and telecommunications expertise of MCI. The two companies have invested approximately $36 million to date in building the Caliber system.

Caliber's president and CEO is Chris Nguyen, who was vice president of Sylvan's Testing Center Operations and vice president of Sylvan Prometric, Sylvan's computer-based testing division, from 1993 until he joined Caliber in November 1996, and was instrumental in the development of that system. Chris Hoehn-Saric and Doug Becker, co-CEOs of Sylvan, have been instrumental in guiding Caliber to this point. They are chairman and vice chairman of Caliber's Board, respectively.

Caliber Learning Network, Inc., distributes executive-level education from top-name universities and training from Fortune 1000 companies to students and employees at its network of high-tech campuses in cities across the U.S. Caliber has more than 40 Learning Centers now in operation in the U.S., Canada and Spain.

CURRENT LOCATIONS

Phoenix, AZ	Washington, DC	Indianapolis, IN	North Carolina	Ohio	Nashville, TN
California	Florida	Kansas City, KS	Charlotte	Cincinnati	Texas
Culver City	Jacksonville	New Orleans, LA	Raleigh	Cleveland	Dallas
Los Angeles	Miami	Boston, MA	Paramus, NJ	Oklahoma City, OK	Austin
Santa Ana	Orlando	Baltimore, MD	New York	Portland, OR	Houston
San Francisco	Tampa	Detroit, MI	Long Island	Pennsylvania	Salt Lake City, UT
San Jose	Atlanta, GA	Minneapolis, MN	New York	Pittsburgh	Richmond, VA
Denver, CO	Chicago, IL	St. Louis, MO	Rochester	Philadelphia	Seattle, WA
Milwaukee, WI	Vancouver, BC	Toronto, ON	Montreal, QU	Barcelona, Spain	

Source: Company documents.

The company believes a wide range of students, corporations and universities will adopt the Caliber distribution model for continuing education, product launches, sales training and other time-sensitive or critical-learning activities. However, the company is limiting its discussions at this time to those programs that carry a strong reputation for quality in order to minimize brand dilution. To date, the company has contracted with top name universities Johns Hopkins, the University of Pennsylvania's Wharton School, and the Marshall School of Business to jointly develop and deliver courses through the Caliber system. Similarly, progressive companies such as Compaq, MCI, and Macmillan Computer Publishing, Deloitte & Touche and Microsoft also have contracts in place with Caliber.

CALIBER CLIENT LIST

University	Corporate	Other Academic Programs
Johns Hopkins Medical School	Compaq	Year 2000 Training (U. Maryland)
Wharton Business School	MCI Systemhouse	IT Insight
Georgetown University	Macmillan Computer Publishing	
(International Relations)	Wave Technologies	
UC Berkeley Extension	Microsoft	
(Engineering Programs)	Salomon Smith Barney	
USC Marshall School of Business	Intel	
Teachers College, Columbia University	Life Underwriters Training Council	

Source: Company documents.

Growth Strategies

Caliber Internet Initiative

In July 1999, Caliber launched an e-commerce/training site, Caliber.com, to take advantage of the following:

- Caliber's strong brand name recognition as a distance-learning provider.
- The power of the Internet as a distribution vehicle for content to which Caliber customers wanted access.
  - The ability to archive content for customer access.
  - The need to reach customers not just at existing Caliber classrooms but at work and at home.

Caliber.com will work with clients to repurpose content from any medium to make it ready for Internet delivery. Caliber's experience with the Learning Center business, where it worked with corporations and academic institutions to convert content to a distance learning-compatible format, should serve the company well as the conversion methodologies for satellite and Internet content share some common functionality.

The company believes Caliber.com will be a major part of Caliber's future as a distance-learning provider. With Internet access and usage growing by leaps and bounds, Caliber will be able to now service an even wider potential customer base than was possible utilizing just the Learning Center model.

Same-Center Growth at Existing Learning Centers

One of the primary advantages of Caliber's network is the ability to "leverage the box," or push more programs through the same center, increasing the operating leverage inherent in the system. Caliber anticipates signing more contracts with academic and corporate clients, which should increase utilization rates at the Caliber centers.

Caliber is structured so that corporations will use the learning centers on weekdays for professional training and corporate communications programs and that working adults will use the centers in the

evenings and on weekends for lifelong learning. In addition, Caliber intends to optimize utilization of the network in the early years by renting its video conferencing services or classrooms on an hourly basis.

Services

In addition to providing facilities, Caliber will consult with universities and corporations to develop customized professional development and training programs, which it can then add to its portfolio of excellent course content. We believe the service component of Caliber's business will also be utilized to repurpose content that customers might not necessarily use at a Caliber center but rather through the institution's own presentation facilities.

Sales and Marketing Strategy

Caliber establishes long-term alliances with prominent universities and corporate customers. In order to do this, Caliber focuses on relationships with senior administrative officers within universities and senior management within Fortune 1000 IT, engineering and professional services corporations.

Caliber works closely with the corporation to see that all training needs are met by the Caliber network. Targeted direct mail, advertisements, marketing to professional organizations and outbound telemarketing are utilized to attract brand name recognition of Caliber academic programs.

With the advent of Caliber.com, the company believes it will be able to present a more attractive suite of products and services to potential customers, which should increase the sales forces' ability to secure new contracts, as the company would have a better ability to meet specific customer needs such as providing employee access to corporate content from home or work.

Business Model

Revenues

Caliber generates revenues by selling contracts to provide: (1) content repurposing services; (2) transmission service; (3) site rental; and (4) by managing some learning centers for Sylvan Learning Systems.

Revenues are classified as Academic, Corporate Communications and Training (CC&T) or Other.

Academic	Top Graduate University Classes, IT Training
Corporate Communications and Training	Professional Development and Training
Other	Internet e-commerce site, Room Rental, Sylvan Center Management

- Academic revenues refer to contracts signed with education institutions to deliver their content, and repurpose if need be.
- CC&T revenues are generated from contracts with corporations to host and transmit corporate sales training meetings, product launches, continuing education requirement or other functions that serve corporate employees, customers and suppliers.

Because of the high fixed-cost structure, incremental tests or courses are added at a very high margin, providing for significant profitability as shown in the following table:

CENTER BUSINESS MODEL	
($ millions)	
Revenue at Maturity	$2-3
Operating Expenses	60% contribution margins
Fixed Costs	$0.325
Campus Operating Income	$0.85-1.450
Initial Investment	$0.5

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CBT GROUP PLC

STRONG BUY
NASDAQ: CBTSY

PRICE:	$25.75
12-MONTH TARGET PRICE:	$40
52-WEEK RANGE:	$60-7
FULLY DILUTED SHARES O/S:	48.0 MM
MARKET CAPITALIZATION:	$1,236.0 MM
AVG. DAILY VOL. (3 MOS.):	719,129
SECULAR EPS GROWTH:	35%
FY 1999E REVENUES:	$193.0 MM
MARKET CAP./REVENUES:	640%
6/99 TOTAL DEBT:	NONE
6/99 LTD/TOTAL CAP.:	NONE
6/99 ROAE:	12.0%
6/99 SHAREHOLDERS' EQ.:	$209.0 MM
6/99 BOOK VALUE/SHARE:	$4.35
DIVIDEND/YIELD:	NONE

FYE 12/31	1998A	1999E	2000E
EPS			
Q1(MAR)	$0.16	$0.03A	$0.11
Q2(JUN)	0.19	0.12A	0.14
Q3(SEP)	0.06	0.12	0.16
Q4(DEC)	0.05	0.19	0.25
FISCAL YR	$0.46	$0.46	$0.66
P/E	56.0	56.0	39.0
P/E/G	160%	160%	111%

- CBT Group stock's recent strength is attributable to: (1) renewed confidence in the management team; (2) expectations for upside surprises against published estimates that do not fully reflect business momentum; (3) expectations for increasing fiscal 1999 and fiscal 2000 estimates to capture the business momentum; (4) resignation by naysayers that the model is far from dead; and, perhaps most importantly, (5) consideration for the Internet quotient in the business model, which we believe has not yet been fully reflected in the stock.
- We believe winning "Internet stocks" will be those that make money and are transaction-driven. We believe this is a fundamental shift away from loss leaders and advertising abysses. The earnings multiple for CBT Group will, in our view, be a primary beneficiary of that impending shift.
- The $25 million Unisys contract and the strong start by Knowledge Well affirms our conviction regarding the advent of Learning Portals and CBT Group's ability to dominate that Internet-centric space.
- The revenue performance in the second quarter of 1999 was the strongest in the company's history. We believe the management team has restarted business momentum as CBT Group rapidly returns to historic profitability levels.

Company Description

CBT Group, based in Menlo Park, California, develops and markets a comprehensive library of training titles and develops enterprise learning solutions for the Fortune 3000. Its products are currently used by more than 2,000 of the world's leading corporations.

The company has alliances with several leading software and hardware companies in order to develop and market vendor-specific training. CBT Group enhances standard training materials, such as instructor-led training scripts by adapting the materials to a computer format and adding graphics and animation. CBT Group provides a similar interface and teaching method across training titles for all of the vendors. Therefore, the company's training library addresses the training needs of end users and information systems professionals who seek one source to deliver the training for multiple software vendors.

The company was founded in Dublin, which is also the location for courseware development. CBT Group's corporate executives are located in California. Approximately 70% of the company's sales are to U.S. customers.

Investment Thesis

The addressable market for CBT Group is primarily defined by its content focus that, at the current time, is predominantly focused on Information Technology training (IT training). According to IDC, customers spend more than $18 billion internationally on IT training, a market expected to exceed $28 billion by 2002. In addition, however, CBT Group owns and will soon greatly expand its offerings in business skill training—a market pegged by many industry experts to exceed $60 billion.

There are multiple, favorable secular trends that should increase the market for technology-mediated instruction. Those drivers include:

- Outsourcing of training by businesses that are increasing their focus on core competencies.
- Businesses struggling to contend with an increasingly complex, technology-centric world.
- Accelerating demand for IT professional certification.
- Compelling reasons to deliver more training via the computer, including efficiency and cost savings. IDC estimates that the online distance learning revenues will grow at a CAGR of 95%, to exceed $5.5 billion in 2002.

We believe **the emergence of CBT Group as a leader in technology-based training (TBT)** was driven, in great part, by the steady and strong migration from legacy mainframe systems to client/server and networking. Client/server architecture and networking distributes software components across multiple geographic areas, requiring more support staff to maintain them. **Software maintenance** is also challenging because of the increasing number of applications and vendors in the market. **Hardware maintenance** is complex in the new environment. Instead of ensuring that one machine (the mainframe) is functioning properly, hardware support staff now must ensure that every machine on the network is able to run applications correctly and that the links between the client machines to all the servers are in working order.

In essence, multiple vendors on multiple platforms at multiple sites increase the need for highly trained IS professionals to ensure that communication and interfacing do not break down. **The development, installation, integration and evaluation of networking software is forcing thousands of IS administrators and support staff worldwide to train.**

We believe CBT Group's alliances with many of the companies driving the changes in the technology industry has enabled CBT Group to build the industry's leading library of training titles. In our view, CBT Group's growing library of more than 900 titles is a moving target for the competition.

We believe the company's long-standing relationships with technology providers such as Cisco, Microsoft, Oracle, SAP and Novell have helped build competitive barriers that will assist CBT Group in maintaining its market leadership for the foreseeable future.

Extension of the Investment Thesis

Our vision is that Learning will become a core module within enterprise applications. Most businesses need a "learning module" to complete their enterprise applications. The expanding presence of the Internet will offer the technological infrastructure for the Learning module, thereby a Learning Portal.

The Learning Portal is a compelling solution for corporate customers, particularly those with a strong commitment to enhancing their intellectual capital—apparently an increasing mandate in our economy. The existence of the Learning Portal, in our view, will be a superb driver for learning. It will be easily accessible (using a browser) and incorporate learning content, learning support via e-mentoring and even efficient administration such as registration for instructor-led classes. The portal will facilitate registration and streamline the entire process, thereby achieving tremendous savings for corporations, which heretofore had acquired training from multiple vendors. The corporations may also be able to achieve cost savings from buying seats in bulk as a united, web buyer.

The Learning Portal, in essence, will be the point through which all learning will be transacted. The race is on to broaden the installed base of portals which are managed, thereby becoming the agent of learning for corporate America.

Learning Solution for Unisys

Most businesses will elect to outsource the design, implementation and management of their Learning Portals to companies like CBT Group, which **recently won a $25 million, five-year guaranteed contract to provide virtually all of Unisys's technical education. The company's new Professional Services Group landed the contract**. This group has the ability to leverage the powerful combination of the breadth of CBT Group's solution and the Internet and, in turn, turn large contracts into mega-deals.

The potential value of the Unisys contract is $100 million. Much of the $75 million differential will emerge from the re-sale of instructor-led training (ILT) events—on behalf of ILT vendors (Executrain and Global Knowledge Network)—to Unisys employees.

We believe the $75 million upside is achievable for the following reason:

- Unisys spent $30 million last year on ILT from multiple vendors. Over the next five years, Unisys may have spent $150 million in ILT. With the CBT Group Learning Portal, however, Unisys employees will focus their ILT enrollments almost solely on Executrain and GKN. This focused ILT purchasing by Unisys will drive more Unisys employees to the CBT Learning Portal to buy their ILT and thereby **increase the likelihood that CBT Group will see the incremental $75 million from Unisys over the next five years**.

The following is the significance of that contract, beyond the $100 million in revenue: CBT Group's greatest competitor has been and will remain instructor-led training (ILT). Therefore, CBT Group essentially had three choices to beat its competitor: (1) wait for ILT users to migrate to technology-mediated training—a shift that is occurring rapidly but nonetheless one that will never be complete; (2) buy an ILT company—an unlikely prospect based on the eroding health of those businesses; or (3) beat them over the head with the Internet.

CBT Group elected the third option. The Learning Portal created by CBT Group at Unisys is the ideal solution. CBT Group will now fold the dominant ILT market share into their own market share while earning margins on the ILT business that will likely surpass the margins earned by the originating ILT vendors.

We have been waiting for this type of deal from CBT Group, and it shatters the stereotype of being "that CD-ROM company."

In effect, CBT Group is providing an entire virtual university for Unisys—everything from registration to course content to mentoring services and administration. The system is designed to enhance access for Unisys employees to all types of technical training and, in particular, to receive certification from the primary software, hardware and networking vendors (Microsoft, Novell, Cisco, Lotus and others).

The contract includes the following items:

- A fully customized front end of cbt.community (see below for details) for Unisys.
- Access to CBT Group's industry-leading content.
- Access to CBT Group's mentoring services (Scholars.com).
- An interface allowing employees to secure industry and vendor certifications through Sylvan testing centers.

This is our first exposure to CBT Group's new "Professional Services Group," and we are very excited. It is its ability to carry large customers to the next level, such as completely outsourcing a virtual corporate university for a Fortune 500 client such as Unisys, that we believe will unshackle CBT Group from the albatross of being "that CD-ROM company."

The contract pays CBT Group for: (1) designing and maintaining the customized front end; (2) use of CBT Group's content titles; (3) access to round-the-clock mentoring services through CBT Group's Scholars.com offering; and (4) a management fee for managing the entire "university" structure.

Learning Solution for Cisco Systems

CBT Group and Cisco announced an expanded agreement for Cisco certification students that we believe illustrates the power and depth of the CBT Group training solution. Cisco students now have access to more than 200 hours of company-developed training titles, access to cbt.community, usage of CBT Group's Internet/online mentoring program and access to Cisco experts 24 hours per day.

In support of the program, CBT Group has recently developed several new titles for networking engineers that simulate the look and feel of actual Cisco software and let students learn without compromising the integrity or safety of their corporate networks.

These agreements showcase why we believe CBT Group will remain the industry leader in technology-mediated training: **Students can utilize multiple forms of training content delivery, access a single source for their training and information needs, get help whenever and however they need to and keep up to date on the latest cutting-edge technology from and industry leader.**

Business Strategy

We believe the company's success and leadership position in the industry was derived from the strength of key elements within CBT Group's business model—channel, content and technology—and the synergies that exist between them.

Channel. The company's basic strategy is to focus on direct selling of its learning solution into large, corporate accounts. We will discuss its mature markets as well as its new markets later in this report. The company's field sales force of more than 260 professionals is, in our view, tops in the industry.

Content. CBT Group grows by building out its library, which provides it with access to more users. As those companies grow, the training needs of their users grow.

Technology. CBT Group can also grow by adding more functionality to its products and delivery. It will continue to close the door on classroom training, in our view, by virtual emulation of the classroom by incorporating technologies like Centra's Symposium product, for example.

Channels

Corporate Buyer

Currently, CBT Group has more than 35 contracts that exceed $1 million each. For example, CBT Group signed a renewed and expanded contract with Deloitte Consulting. Under terms of the agreement, CBT Group will provide courseware titles covering Internet security, telecommunications and Microsoft certification to Deloitte's more than 10,000 employees. This agreement represents the second of two major investments, totaling more than $10 million that Deloitte Consulting has made in CBT Group's products in the last four years. We expect CBT Group to continue to add three to five more significant contracts per quarter. The average corporate contract size exceeded $87,000 in the second quarter of 1999.

CUSTOMER CONTRACTS

	Value of Contract	Contract Signed In
Unisys	$25,000,000	2Q99
Compaq	$5,000,000	1Q99
Deloitte Consulting	$5,000,000	3Q98
Whitman-Hart	$2,600,000	3Q98
American Management Systems	$1,500,000	1Q98
Cambridge Technology Partners	$1,100,000	4Q97
Computer Task Group	$1,100,000	4Q97
UNISYS	$6,000,000	3Q97
MedPartners, Inc.	$1,000,000	3Q97
West Pac	$2,000,000	3Q97
Regents of the Univ. of California	$500,000	3Q97
United States Air Force	$500,000	3Q97
Computer Sciences Corp.	$7,800,000	2Q97
Cisco Systems	$1,000,000	2Q97
Wisconsin Technical College System	$400,000	2Q97
Entex	$2,000,000	1Q97
Andersen Consulting	$6,000,000	4Q96
Tandem	$1,000,000	4Q96
Compaq	$1,000,000	3Q96
EDS	$5,000,000	1Q96
US West	$2,000,000	1Q96

Note: We believe there were some contracts signed in 1997 that were not announced by request of the customer.

Besides marketing to Fortune 3000 companies through a direct sales force, CBT Group targets smaller corporate customers through its telemarketing program. To date, the telemarketing effort has served more than 2,200 customers, and the average contract size is steadily approaching the company's goal of $5,000.

Government

Since the first quarter of 1997, CBT Group has landed 200 contracts with various government agencies. The company recently added the FAA, CalTrans and the Department of Energy to its list of government customers. We believe each addition is significant, not only because of the immediate implications for revenue and earnings but as a large step in building a bigger share with the federal government—**the largest user of information technology in the world**.

Education

The company built an education sales group to address the growing needs in universities, community colleges and primary and secondary schools. **We believe the education market will provide a significant source of revenue for the company as higher education institutions use CBT titles to build IT courses for their students as well as train their own employees.**

International

In the Latin American market, CBT has an agreement with Learning Solutions, a Brazil-based provider of customized IT training and, in our opinion, the first company to bring interactive training solutions to the Brazilian market. Under the terms of the agreement, **Learning Solutions will distribute CBT Group's full library of software titles in Brazil**. Learning Solutions markets its

products and services through a direct sales effort to Brazilian corporate and government customers. CBT also plans to translate specified titles, following the tradition of making content accessible to all learners.

CBT Group currently has international offices or distributors in Australia, the Benelux region (Netherlands, Belgium and Luxembourg), Brazil, Canada, Denmark, Finland, France, Germany, India, Ireland, Israel, Italy, Mexico, New Zealand, Norway, South Africa, Sweden, the United Arab Emirates and the United Kingdom. CBT Group currently provides translated titles in German, French, Portuguese and Japanese.

We believe overseas revenue will remain primarily driven by sale of English-language training to overseas employees for worldwide companies.

Channel Relationships: Retail

CBT Group has a distribution agreement with ExecuTrain, one of the world's largest providers of IT training to business professionals. This agreement allows ExecuTrain to resell single-user versions of CBT's library of IT training software. Because CBT Group does not focus on individual users, ExecuTrain fills a large void and broadens the channel.

CBT Group also has an agreement with Computer Literacy, a leading information resource for computer professionals. Under the agreement, **Computer Literacy (Bookshops+Online, now called FatBrain) became the first online bookstore to distribute CBT System's full library** of training software.

Expanding the Channel Through Acquisitions

CBT Group acquired Forefront Group, a Houston-based provider of computer-based training products and network utilities for technical professionals. Forefront's fiscal 1997 revenues were more than $18.4 million—all from selling only six to eight titles and six diagnostic tools. We estimate that its salespeople will sell more than $25 million of CBT Group products in fiscal 2000 simply based on having more titles to sell.

Forefront salespeople began selling 10–12 CBT titles in the first and second quarters of 1999 and will ramp toward 50 titles over the next 12 months. CBT Group management continues to channel rationalize the company's products to decide what the FFGI salespeople will sell. We believe the beauty of the acquisition is Forefront's telemarketing expertise. Forefront has a database with 1.5 million names of IS professionals or IT users—600,000 of which are active.

The following table illustrates the company's acquisition history and objectives.

CBT GROUP'S ACQUISITION HISTORY AND OBJECTIVES

Date	Name of Company	Location	Objective
November 1995	Personal Training Systems	California	Desktop application training; Helped spark relationship with Netscape.
June 1996	New Technology Training	Canada	Broaden distribution.
June 1996	CLS	Germany	Broaden distribution.
February 1997	ALA	Australia	Broaden distribution in the Pacific Rim.
February 1997	Benelux	Western Europe	Broaden distribution in Europe.
August 1997	Scholars.com	Canada	Expanded delivery services; see previous section.
December 1997	CBT Distributor	Middle East	Broaden distribution in India and the Middle East.
May 1998	Forefront Group	Houston	Expand telemarketing presence.
June 1999	KnowledgeWell	Dallas	Expand non-IT courseware presence

We believe the focus of CBT Group's acquisition strategy will remain on distribution, with a secondary focus on technology and, currently, a tertiary focus on content. We expect CBT to pursue additional small- to modest-strategic acquisitions, which help to expand the company's geographic reach and broaden its distribution channel.

Content

CBT Group has established strategic partnerships with key software and hardware vendors. Technology-based training developers, like CBT Group, want alliances with manufacturers because:

- An alliance prevents long waits between release time by the manufacturer and the development and release of the training title by the training vendor, thus enabling a **first-to-market advantage**.
- Concurrent development—enabled by having access to alpha and beta versions—increases the likelihood that the training product **maps well with the release**.
- The manufacturers will often offer expertise and ultimate **validation of the finished courseware**.

In addition, relationships with multiple vendors give CBT Group a competitive advantage as it is able to offer platform-independent training solutions for customers.

In return for offering exclusive alliances to CBT Group, vendors receive the following benefits:

- Higher royalty payments.
- Easier quality assurance.

CBT GROUP STRATEGIC CONTENT PARTNERS

Company	Description of Partnership/Comments	Curricula
Check Point Software Technologies, Inc.; Network Associates; RSA Data Security; Security Dynamics; VeriSign, Inc.	Co-development agreement to design curricula and content to address the security technology training requirements (see detailed discussion below).	Internet/intranet technologies
Cisco Systems (1)	An exclusive agreement to develop a curriculum focused on Cisco's Internetwork Operating System (IOS) software. An **expanded relationship includes courseware development for Cisco's new career certification programs**. The co-development agreement was **extended into 2001**.	Internet/intranet technologies
Informix (1)	An exclusive agreement to develop courseware for the Informix-OnLine Dynamic Server.	Database technologies
IBM-Netscape-Sun Java consortium (2)	The consortium selected CBT Group's Java courseware as the only authorized interactive training curriculum for its 40-city Java Education World Tour '97. The company signed an agreement to develop a full 14-course, 55-hour suite of Java courseware.	Internet/intranet technologies
Intel	Development agreement calls for CBT Group to deliver a series titles to support Intel Certification. Intel Certification was developed by Intel for its channel resellers to help technology professionals provide the most advanced technology solutions for their customers. **We believe this alliance is a superb addition to CBT Group's already formidable library. CBT Group will customize 22 courses—10 of which have already been released to 50,000 dealers, VARs and agents.**	Internetworking technologies
Lotus (1)	Long-standing cooperative development partnership. Production of curriculum focused primarily on Lotus Notes.	End-user productivity tools, Groupware technologies
Marimba (2)	An agreement to design and develop courseware for Marimba's Castanet content and application deployment tools, and Bongo, a visual tool for authoring Java applications.	
Microsoft Corporation	Partnership began to develop courses on Windows NT, and has extended to cover online distribution of titles covering a full range of Microsoft products.	End-user productivity tools, web-authoring tools, Internet/intranet technologies, Groupware technologies, Desktop and enterprise OS
Netscape Communications Corp.	Partnership to provide training for the JavaScript scripting language, Netscape LiveWare visual development environment and Netscape Enterprise Server.	Web-authoring tools
Novell	Cooperative development partnership focused on Novell's NetWare networking software.	Desktop and enterprise OS
Oracle	Extended alliance to develop courses for the Oracle Universal Server database environment, and Develop/2000 release 2.0, Oracle's enterprise application development environment.	Database technologies
Rational Software Corporation	An exclusive agreement to co-develop education software for Object oriented Analysis and Design (OOAD) using the Unified Modeling Language (UML).	
SAP (2)	Agreement to co-develop training for SAP R/3 business application solution. The curricula is for business managers, power users and project-team members. SAP has agreed to authorize, package and sell the courses. (See detailed discussion below)	Enterprise resource Planning
Sybase (1)	Exclusive partnership to develop curriculum focused on the PowerBuilder family of products.	

(1) Exclusive relationship.
(2) De facto exclusive relationship.

Source: Company reports.

CBT Group is the only interactive education provider to offer a full computer-based curriculum that prepares students for all exams required for Microsoft's new Internet certification program. The new credential is part of the existing Microsoft Certified Product Specialist (MCPS) certification program.

We believe library size is the leverage that empowers CBT salespeople to win big corporate contracts where customers have training needs for multiple technology vendors. Also, in our opinion, corporate buyers prefer the comfort of a single training vendor with a uniform training architecture and a consistent training experience to serve the diverse training needs created by multiple vendors.

We believe one of the most attractive elements of CBT Group's business model is that it **provides a consistent and coordinated set of courses across different programs from different vendors on different computers**. If you are familiar with one CBT Group course, you should be able to use the next.

The company needs to upgrade its courses as frequently as vendors release new software versions. This presents an execution challenge for the company, but it also offers an opportunity for it to revisit existing customers with an expanded product list and the need for an extended contract.

Currently, CBT Group has a content library of more than 900 titles. In our view, **the overall size and breadth of the library is the greatest barrier to entry in this business**. When it comes to winning contracts, training companies that lack a formidable library are no match for those with an impressive library.

SAP Curricula

We believe CBT Group's partnership agreement with SAP (signed in late 1997) provides evidence for possible opportunities with companies like Baan or PeopleSoft because their software is heavily customized—much like SAP's—and thereby suggests an expanding market for training for customized systems and applications.

SAP has quickly moved into CBT Group's top six selling titles. We believe the IS professionals needs for SAP training are directly related to SAP installations. The consultants/integrators need the training and cannot finish the job without having CBT Group's titles.

CBT Group has developed the standardized courseware under a recent co-development agreement with **DA Consulting**, one of the largest companies specializing in SAP installations. Under the agreement, the CBT Group and DA Consulting have developed a series of more than 30 computer-based training courses—12 titles for technical teams, with SAP installations and 23 for SAP end users to be sold through DA Consulting. We believe an integrated curriculum of instructor-led and computer-based training courses represents the optimal end-user education solution for ERP applications like SAP.

The Internet Security Curricula

In the fourth quarter of 1997, CBT Group announced the **formation of the Internet Security Courseware Consortium** (ISCC) to address the security technology training requirements of organizations worldwide.

We believe network security has grown into a multibillion dollar market because of its increasing importance to corporations, individuals and web merchants who need to protect themselves

and their businesses. Businesses purchase network security products from many of the vendors with which CBT Group now has alliances.

The ISCC will define the educational scope of Internet security topics. The ISCC announced that **the first interactive training curriculum for Internet security products is available exclusively from CBT Group**. We believe Internet security is a huge content area with strong market demand. In our view, the formation of the ISCC strengthens CBT Group's leading position in the training industry. Furthermore, we believe CBT Group's leadership role in this initiative speaks to its **evolution from a vendor into a driving force in the industry.**

The ISCC is composed of Cisco Systems, IBM, Intel, Netscape, the Javasoft business of Sun Microsystems, Check Point, Network Associates, Security Dynamics, VeriSign, RSA Data Security and Lotus. Many of these providers were significant relationships for CBT Group even before the formation of ISCC, illustrating another way CBT Group penetrates its customer base for increased sales.

Technology

Eventually, as more offices acquire Internet/intranet access, online delivery of training software may become more prevalent. CBT Group has already begun to deliver its courseware directly via the Internet. Internet delivery could help CBT Group more effectively reach corporations below the Fortune 3000 level.

Web Deployment

CBT Group is positioned well, in our view, to capitalize on the accelerating migration of training to web-based training. CBTWeb delivers training courses via corporate intranets to desktop PCs situated remotely or onto a laptop via a modem. This allows far more flexibility and provides a training solution to suit most working environments, especially where employees are based over a number of sites.

Remote access and just-in-time training are particularly important to systems integrators and consultants who only make money when they bill, not when they sit in training classes. **We believe this helps explain CBT Group's existing multimillion dollar contracts with EDS and Computer Sciences Corporation as well as its $500,000 contract with Vertex, a systems integrator in Europe.**

In our view, **CBT Group's web deployment has established the paradigm for online delivery of IT training**. CBTWeb improves efficiency of administration, maintenance, deployment and evaluation for IT training. The increasing numbers of intranet installations suggests that CBTWeb will fuel CBT Group's market share expansion as more and more companies invest in intranets and look to leverage their investments with training content.

We believe there are multiple advantages to web-based delivery:

- **Easier distribution** to nationwide or worldwide employees. It is easier to deliver—it requires no postage or packaging.
- **Greater accessibility** by using a modem to connect from the home, office or mobile locations.
- **Simpler data management**. The rapid rate with which new products are introduced and older products become outdated creates a management nightmare for individuals charged with

updating training libraries. However, if a single version of each product is kept on the host, users get instantaneous access to updated components.

- **Greater storage capacity** of the Internet host than the user's hard drive allows users access to more products and lets instructors mix and match courseware activities to fit specific needs.
- **"Hot links" to other resources** on the Web enrich the learning experience by enabling access to other relevant information.
- **Monitoring usage** by learners is simpler because the number of downloads can be measured. This helps training managers evaluate cost-effectiveness as well as negotiate licenses with TBT developers that charge based on estimated usage.
- **Individual educational programs** (IEPs) can be generated from a combination of the historical record of a student's prior training (from monitored usage) and the database stored on the server. As students progress through training, information is delivered based on what they have learned and how they have performed on previous training. For example, a student would sign onto a course, enter previous training she has had and what types of information she wants into a user profile, and a customized course would be generated from the content database. This dimension serves to focus the training curriculum only on skills gaps, saving organizations both time and money.

cbt.community

cbt.community is a web-based virtual community where learners can interact with each other and with subject matter experts—a variation on our learning portal concept. The "community" is constantly updated with the latest, most topical content, and allows users to pool collective knowledge together to extend the learning experience for all community members. Customers may use special, password-protected locations within cbt.community as a central location for their students to access company-specific educational resources—cbt.community can serve as an intranet "learning portal" that is fully customizable for individual corporate requirements.

Live! From CBT Group

The ability to offer LivePlay of training courseware from a web server is yet another pioneering dimension to CBT Group deployment—and one that we believe has surprised and impressed the industry.

Through the addition of LivePlay capability to the company's popular CBTWeb intranet-based deployment system, we believe **CBT Group has innovatively circumvented the bandwidth problem**. To use CBTWeb, students use a browser to access the CBTWeb site, choose the course they want, and—using LivePlay—launch it to run the course live.

The company offers a "liveplay" product from a web server that eliminates the need to download a lot of content to the client's hard drive. Users can launch a course interactively. The user's browser continuously retrieves only the content needed at that learning moment.

The LivePlay dimension is cutting edge, in our view, because the trend toward online learning and training is building momentum, and just-in-time training is becoming paramount.

LivePlay is not for everyone, however. Companies with high-speed networks often have a percentage of remote or mobile employees who access the network through slower, less-reliable connections. Unfortunately, however, bandwidth constraints from web servers to client systems often create a problem and one of three outcomes:

- The download is slow, and learning is cumbersome, as learners must wait for large chunks of data.
- The interactive dimension of the content must be sacrificed in order to "fit" the bandwidth. In other words, the product lacks the multimedia (video, audio, graphics) of a CD-ROM-based product. For example, courses built in HTML may travel quickly, but at the sacrifice of attractive multimedia and interactive learning. HTML simulations tend to feel rigid or limited. The graphics, boxes and overlays look awkward. A lot of HTML courseware is like turning the pages of a book.
- Learners might choose to download components with which they need to work. After the tedious and time-consuming download, the modules reside on the learner's PC for future use.

The Human Touch

CBT Group acquired **Scholars.com**, a Canadian company that offers mentoring services over the Internet around Certified Netware Engineer and Microsoft Certified Systems Engineer courses. Scholars.com is a quick-response support network, not a live mentoring service. The company's online instructors will assist students working through training titles. Learning advisors are available to students 12 hours a day, 7 days a week, with personalized assistance in online chats, e-mail and news groups.

Scholars.com is a cost-effective means for corporate buyers to support and facilitate training by their employee/trainees. We believe Scholars.com will benefit CBT Group in that it adds the student-teacher interaction, which the company lacked previously. Scholars.com has mentored more than 1,000 students working on Novell and Microsoft networking certification.

Through its partnership with CBT Group, Scholars.com is expanding individual service to corporate service. Scholars.com is now being marketed to large enterprises that would like to certify multiple people. We believe Scholars.com is one of the first value-added trainers to wrap its services around computer-based training courses to ensure that students pass the increasingly popular certification exams.

Although Scholars.com has focused on Novell and Microsoft networking certification programs, CBT Group expects Scholars.com to broaden its range of offerings to incorporate CBT Group's library of IT training titles, including technical certification training for Cisco and Lotus technologies.

Scholars.com will continue its sales over the Internet ($695 per person) as was the case prior to its acquisition. However, CBT Group has been selling the service as a separate product to its corporate customers and is using corporate pricing, which differs substantially from single-use pricing. **CBT Group has already landed significant deals from Scholars.com.** It is not purchased merely to obtain certification training as much as for the online mentoring function. Customers want a help desk, in effect.

CBTCampus

Scholars.com will also be linked to CBTCampus—the training administration and management system—to provide access to mentors directly through the campus.

CBTCampus is primarily a feature that CBT Group provides its customers without necessarily being viewed as a source of revenue. CBTCampus is a very small percentage of the contract size—perhaps as little as 3% ranging up to a maximum of roughly $50,000 per year for some users.

CBTCampus incorporates the following state-of-the-art features that we believe will broaden the company's competitive lead:

- An **administration package** for registration and tracking.
- A **campus server** for progress reports and test results.
- A **student environment** for creating customized training and downloading courses.
- A **library** with its complete catalog of study materials.
- A **messaging center** for student interaction and **online mentoring**.
- An **assessment center** for taking exams.

To improve deployment of the company's web-based training products over the Internet, CBT Group signed an agreement with **RealNetworks, Inc.**, a leader in streaming media. Under the agreement, CBT Group plans to standardize on RealNetwork's RealSystem G2, the first open, extensible standards-based streaming media system, to create multimedia-rich training courseware for web-based deployment. The first products are scheduled for rollout by early 1999.

In addition, **Centra Software**, a provider of enterprise software and services for web-based learning and collaboration, and CBT Group formed a **strategic development and joint marketing partnership**. Under the agreement, the companies will add the ability to access Centra's product, Symposium, from within CBTCampus.

The Business Model

Revenues

Revenues are primarily derived from rental agreements under which customers license the company's titles for periods of one, two or three years. The agreement generally allows clients to exchange titles on an annual basis from the company's library. Prices vary based on the number of end users, the customer's technology configuration and the number of titles selected.

CBT Group's customers pay an annual fee for access to the rented group of programs. Corporations typically rent a library of 30–50 courses, with contracts ranging from $5,000 to more than $1 million per year. Currently, the average contract is approximately $87,000 per year, and this figure continues to rise.

The company generally recognizes the rental fee at the time of delivery for one-year contracts. For longer contracts, the fee is divided by the number of years and recognized at the beginning of each year. As such, the company builds backlog, which we utilize to gain visibility into forward revenue estimates.

Because revenue recognition is skewed to the quarter of contract signing, there is some seasonality as corporations tend to make more spending decisions in the fourth calendar quarter. In addition, as with any commission-based company, salespeople tend to push a bit harder at year-end.

Research and Development

Development costs for the first product in a series are higher than for subsequent versions. It takes about three months and generally $50,000-100,000 to develop a new course. However, once a course is developed, CBT Group can leverage the development expense by using certain modules from that course to build other courses.

The company strives to maintain a competitive product lead over its competition by building a state-of-the-art library. Therefore, we believe R&D expense will continue to grow in proportion with revenues.

Sales and Marketing

CBT Group enjoys leverage on sales expenses from the expanding library sold by its salespeople as it adds new products and upgrades to existing products. The increasing library size means that each salesperson now has more to sell.

Multiyear contracts also provide leverage from initial sales calls. Nonetheless, in our view, it is the company's superior sales team that gives it a competitive advantage in building a strong channel in which to sell its library. Therefore, we expect that the sales team and marketing will continue to demand 35-40% of revenue for the next few years.

Re-Cap of the Business Model

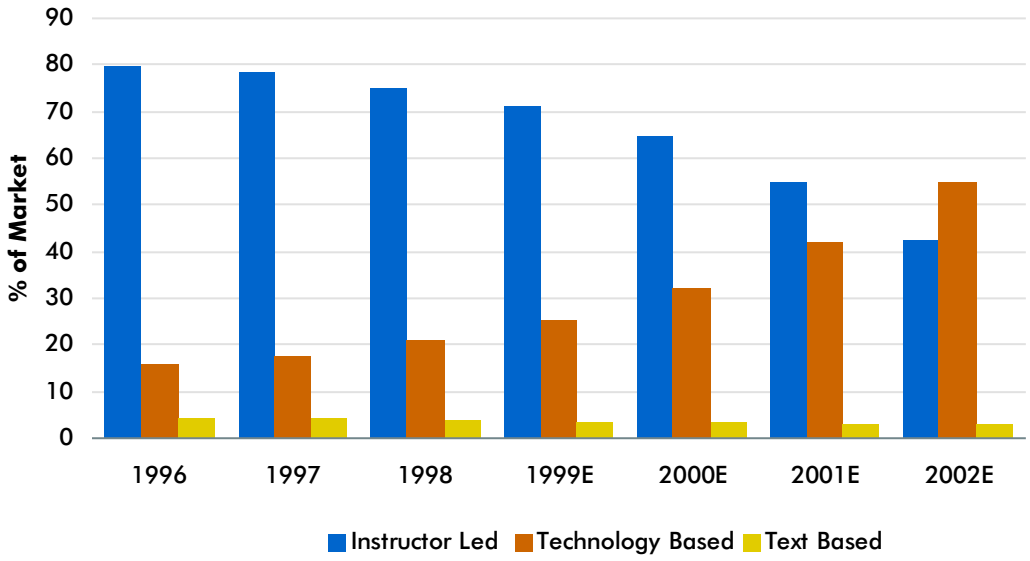
The business has several features, which have translated into a strong stock.

- **Visibility** from long-term contracts and client relationships built on recurring needs. CBT Group generates revenue from multiyear contracts signed with Fortune 3000 companies, which will regularly deploy the content to train their employees. The multiyear contract offers substantial visibility in the form of backlog that accumulates with an increasing critical mass of contracts.
- **Operating leverage** from the ability to sell the company's intellectual content to customers in a variety of forms. The company is enjoying leverage on its sales and marketing expense line because its library of titles is growing at a faster rate than its sales force.
- **Barriers to entry** that are erected, such as switching costs, which discourage customers to elect a new distance learning vendor because they have grown accustomed to the content and presentation of the old. CBT Group's products (from its growing library of more than 750 titles) are currently used by more than 1,700 of the world's leading corporations.
- **Scarcity.** There remain few public equities that reside in this industry group.
- **Compelling secular trends.** Reiterating all of the data outlined herein that underscores the growth in the market, foremost of which is IDC's report that estimates that the online distance learning revenues will grow at a CAGR of 95%, to exceed $5.5 billion in 2002.

Competition

CBT Group faces the most competition from instructor-led training, which we believe will continue to be the primary source of education.

IT TRAINING DELIVERY METHODS



Source: IDC, May 1998.

We believe CBT Group holds a strong competitive position as a pioneer in computer-based educational software. The company's primary competitor in the computer-based training space is:

- **NETG**, a subsidiary of National Education Corp., which recently merged with Gartner Learning. NETG's new management team has been working on a new library of computer-based training products for some key applications.

VENDOR COMPARISON

Criteria	CBT Group	NETG
Assessment		
Before the course is started?	Pre-test	Pre-test
During the course?	Yes	Yes
End of course?	Yes	Yes
Knowledge or performance-based?	Both	Performance-based
Step, task or process level?	Task	Step, task and process
Simulation Strategy		
Include simulations within the skills transfer segment?	Yes	Yes
Support active menus within the simulation?	Yes	No
Show tool tips within the simulation?	Yes	Yes
Use simulations in the skills testing segment?	N/A	Yes
How much of the screen is active in this segment?	N/A	All of the relevant menus and buttons
Scenario-based V Feature/Function		
What is your position on scenario-based training?	Presentation, demonstration, guiding, independent practice.	Uses scenarios occasionally.
To what extent are any scenarios that are introduced carried through the course?		Scenarios will be carried through the course where relevant.
Support Provided		
Users who wish to facilitate the courseware?	Online mentoring and advice on facilitation.	Provide advice and guidance on facilitation methods.
Users who wish to integrate the courseware with their live training material?	Help customers to integrate CBT and class room training.	NETg's ILT-provider partners integrate live training with NETg course materials.
Users who have Learning Centers?	Advice and recommendations on all aspects of learning centers.	Provide support to clients with Learning Centers.
Student Administration and Tracking		
Do you provide this facility?	Yes	Yes
Can it support all of the courses that you provide?	Yes	Yes
What features do you provide to link students to curricula, courses and competencies?	Extensive scheduling, tracking and management facilities.	Links students to curricula, courses and competencies, by student, or department, etc.
Content		
Basic level?	Yes	Yes
Intermediate level?	Yes	Yes
Advanced level?	Yes	Yes
Cover both short cuts and pull-down menus?	Yes	Yes
All Office 97 components included and covered?	Yes	Yes
Do you produce an Office 97 product as a whole?	No	Yes
Networkability		
Internet delivery supported?	Yes	Yes
Intranet delivery supported?	Yes	Yes
Which operating systems does it run under?	Windows 3.x, 95, NT, Macintosh	Windows 3.1 or higher
Which networking environments are supported?	Any LAN	NetWare, Windows 3.xx and above, Windows NT Server
What is the server occupancy for a typical course?	29-22 Mb, but with CBT Web (Liveplay) 12-15 Mb	Average 15 Mb
Sound and Video Support		
To what extent is sound and video supported?	No audio support.	Sound and video full supported.
What is your download strategy form the server to the workstation?	Download complete courses in compressed format.	Course download, Learning Object download, Internet and Intranet delivery.
How many concurrent users are supported?	Unlimited	Limited by operating environment only.
Technical Support		
What is your policy on providing technical support?	Free technical support.	Technical support is by telephone and on-site visit if necessary.
Certification		
Courseware geared to Microsoft end user certification?	Yes	Yes
Support both proficient and expert level?	Yes	Both
How do you relate the course contents to the different levels?	Word 97, Excel 97- both Access 97, Outlook 97, PowerPoint 97, Front page 97- expert level	The course content relates to the two levels as separate courses.
Performance Support		
Do you adapt your courseware to provide performance support?	They are regularly used for ongoing reference and support.	The "learning objects" may be used alone or as an item for review.
What is the compatibility between the training environment and the performance support environment?	N/A	There is complete compatibility as the look and feel of the courseware is consistent.
Pricing		
Single-user license	BP 104	BP 125
10-user license	BP 911	O/A
100-user license	BP 1,115	O/A
1,000-user license	BP 2,564	O/A
Multiple course options	Discounts available for bundling.	Depends on the number of courses and delivery.

Source: *IT Training*, October 1997 issue.

IT Training Magazine's review of both CBT Group's and NETG's training courseware for Office '97 revealed CBT Group's superiority, in our view, in the following key areas:

- CBT Group's courseware is both knowledge- and performance-based. NETG's is only performance-based.
- CBT Group's courseware supports active menus within the training simulation, while NETG does not.
- CBT Group's courseware will run on any local-area network. NETG will only run on NetWare, Windows 3.0 and above, and Windows NT server.

In addition, we believe CBT Group's task-driven simulations imbue its titles with a more effective learning experience than the competition's (Gartner's and NETG's) step-driven, linear instruction.

CBT Group's simulations more closely mimic real-life activities as trainees are granted the freedom to roam and err as they build proficiency with real-life tasks. The company's simulations appear conceptually to be similar to the simulations used to train airplane pilots.

For example, in our view, NETG's step-based simulations appear to be constraining because trainees are strictly guided down a path to success rather than allowed to stumble—as they will in real life—toward success.

Finally, we believe one of CBT Group's **primary competitive advantages** is its installed base of users. This advantage is building as CBT Group expands its library, gains deeper account penetration, and creates an implicit switching cost for customers. We also doubt whether any of these companies can easily catch up with CBT Group's broad library. However, we believe competitors can grow in this fragmented market.

Investment Risks

Among the risks are: (1) pressures to constantly align the product mix with changes in technology and software revisions; (2) the possibility of failing to renew existing contracts; and (3) the potential loss of the significant tax advantage the company enjoys by virtue of the nature of its business activities in Ireland. While we believe it is highly unlikely that this tax advantage will be challenged, the company has built reserves to cover such challenges.

Investment Conclusion

Our vision is that learning will become a core module within the enterprise. Most businesses need a "learning module" to complete their enterprise applications. The expanding presence of the Internet will offer the technological infrastructure for the Learning module, thereby a Learning Portal.

CBT Group may become the leading Internet-enabled education company. The stock's recent upward move is, in our view, only partial consideration for the Internet quotient in CBT Group's business model.

CBT Group PLC (CBT Systems) is a leading provider of interactive software designed to meet businesses' information technology (IT) training needs. CBT Systems, incorporated in Ireland, with U.S. headquarters in Menlo Park, California, possesses one of the leading CBT libraries in the industry with more than 900 titles. Courses cover the range of IT topics, from client/server to the Internet and corporate intranets.

CBT GROUP PLC

Quarterly Sales and Earnings Model
($ millions)

	1Q98A	2Q98A	3Q98A	4Q98A	Dec-98 1998A	1Q99A	2Q99A	3Q99E	4Q99E	Dec-99 1999E	1Q00E	2Q00E	3Q00E	4Q00E	Dec-00 2000E
Revenue	$ 39.93	$ 44.85	$ 35.18	$ 42.27	$ 162.23	$ 40.20	$ 47.25	$ 47.27	$ 57.06	$ 191.77	$ 51.25	$ 58.96	$ 60.50	$ 73.33	$ 244.04
Cost of Revenue	5.94	6.70	6.00	6.50	25.14	6.33	7.53	7.33	8.84	30.03	8.18	9.55	9.66	11.51	38.91
Gross Profit	33.98	38.16	29.18	35.77	137.09	33.87	39.72	39.94	48.22	161.74	43.07	49.41	50.84	61.81	205.13
Research and Development	6.39	6.60	5.76	7.08	25.83	7.39	7.55	7.56	8.84	31.35	8.45	9.41	9.60	11.52	38.98
Sales and Marketing	16.87	18.62	17.68	22.22	75.40	20.97	21.64	20.80	23.11	86.52	24.05	26.59	26.86	29.10	106.61
General and Administrative	3.21	3.59	4.18	4.91	15.89	4.48	4.46	4.49	5.02	18.45	4.61	5.34	5.11	6.20	21.26
Operating Income before Amortization	7.51	9.34	1.56	1.57	19.97	1.03	6.06	7.09	11.24	25.42	5.96	8.07	9.26	14.99	38.29
Amortization							0.16	1.50	1.50	3.16	1.50	1.50	1.50	1.50	6.00
Operating Income (EBIT)	7.51	9.34	1.56	1.57	19.97	1.03	5.91	5.59	9.74	22.27	4.46	6.57	7.76	13.49	32.29
Other Income (Expense)	0.97	0.94	1.79	1.05	4.73	0.53	0.63	0.80	1.00	2.97	1.15	1.20	1.25	1.30	4.90
Pretax Income	8.48	10.27	3.35	2.61	24.71	1.56	6.54	6.39	10.74	25.23	5.61	7.77	9.01	14.79	37.19
Income Taxes	1.14	0.67	0.47	0.39	2.67	0.23	0.98	0.96	1.62	3.79	0.84	1.17	1.35	2.22	5.58
Net Income	$ 7.34	$ 9.60	$ 2.88	$ 2.22	22.04	$ 1.33	$ 5.56	$ 5.43	$ 9.13	21.44	$ 4.77	$ 6.60	$ 7.66	$ 12.58	31.61
EPS before amortization	**$ 0.16**	**$ 0.19**	**$ 0.06**	**$ 0.05**	**$ 0.46**	**$ 0.03**	**$ 0.12**	**$ 0.12**	**$ 0.19**	**$ 0.46**	**$ 0.11**	**$ 0.14**	**$ 0.16**	**$ 0.25**	**$ 0.66**
EPS, fully taxed and recurring	$ 0.16	$ 0.19	$ 0.06	$ 0.05	$ 0.46	$ 0.03	$ 0.12	$ 0.09	$ 0.16	$ 0.40	$ 0.08	$ 0.11	$ 0.13	$ 0.22	$ 0.55
Weighted avg. shares outstanding	46.04	46.36	46.50	44.47	45.84	44.48	47.96	55.00	55.25	50.67	55.50	55.75	56.00	56.25	55.88
MARGIN ANALYSIS															
Gross Profit Margin	85.1%	85.1%	83.0%	84.6%	84.5%	84.3%	84.1%	84.5%	84.5%	84.3%	84.0%	83.8%	84.0%	84.3%	84.1%
Research and Development	16.0%	14.7%	16.4%	16.7%	15.9%	18.4%	16.0%	16.0%	15.5%	16.3%	16.5%	16.0%	15.9%	15.7%	16.0%
Sales and Marketing Expense	42.2%	41.5%	50.3%	52.6%	46.5%	52.2%	45.8%	44.0%	40.5%	45.1%	46.9%	45.1%	44.4%	39.7%	43.7%
General and Administrative Expense	8.0%	8.0%	11.9%	11.6%	9.8%	11.1%	9.4%	9.5%	8.8%	9.6%	9.0%	9.1%	8.5%	8.5%	8.7%
Total Expenses	66.3%	64.3%	78.5%	80.9%	72.2%	81.7%	71.2%	69.5%	64.8%	71.1%	72.4%	70.1%	68.7%	63.9%	68.4%
Operating income - (recurring and before amortization)	18.8%	20.8%	4.4%	3.7%	12.3%	2.6%	12.8%	15.0%	19.7%	13.3%	11.6%	13.7%	15.3%	20.4%	15.7%
Pretax Income	21.2%	22.9%	9.5%	6.2%	15.2%	3.9%	13.8%	13.5%	18.8%	13.2%	10.9%	13.2%	14.9%	20.2%	15.2%
Tax rate	13.4%	6.5%	14.0%	15.0%	10.8%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Net Margin	18.4%	21.4%	8.2%	5.3%	13.6%	3.3%	11.8%	11.5%	16.0%	11.2%	9.3%	11.2%	12.7%	17.1%	13.0%
PERCENT CHANGE (YR/YR)															
Revenues	49.4%	50.7%	0.1%	-7.0%	18.4%	0.7%	5.3%	34.4%	35.0%	18.2%	27.5%	24.8%	28.0%	28.5%	27.3%
Gross Profit	54.2%	55.2%	-1.0%	-6.9%	19.7%	-0.3%	4.1%	36.9%	34.8%	18.0%	27.2%	24.4%	27.3%	28.2%	26.8%
Cost of Revenue	27.0%	29.5%	6.0%	-7.0%	11.7%	6.5%	12.4%	22.1%	36.1%	19.5%	29.3%	26.9%	31.9%	30.2%	29.6%
Research and Development	44.2%	39.6%	12.9%	7.0%	23.7%	15.6%	14.4%	31.3%	25.0%	21.4%	14.3%	24.6%	27.0%	30.2%	24.3%
Sales and Marketing	31.5%	38.8%	20.5%	21.8%	27.4%	24.3%	16.2%	17.6%	4.0%	14.8%	14.7%	22.9%	29.2%	25.9%	23.2%
General and Administrative	36.9%	-0.6%	59.3%	62.8%	37.0%	39.4%	24.1%	7.5%	2.4%	16.1%	3.0%	19.7%	13.9%	23.4%	15.2%
Total Expenses	35.0%	32.4%	23.3%	22.8%	27.8%	24.0%	16.8%	18.9%	8.1%	16.4%	13.0%	22.8%	26.6%	26.6%	22.4%
Operating Income - recurring	207.9%	231.0%	-77.9%	-85.2%	-12.8%	-86.3%	-35.1%	354.8%	616.9%	27.3%	479.3%	33.1%	30.6%	33.4%	50.6%
Other Income	73.9%	40.1%	-31.3%	17.2%	0.4%	-44.9%	-32.4%	-55.2%	-4.3%	-37.3%	115.8%	89.6%	56.3%	30.0%	65.2%
Pretax Income - recurring	183.0%	194.5%	-65.4%	-77.2%	-10.5%	-81.6%	-36.3%	91.0%	311.1%	2.1%	259.2%	18.8%	41.0%	37.7%	47.4%
Income Taxes	119.7%	-18.4%	-55.1%	-74.5%	-31.9%	-79.4%	47.0%	104.8%	311.1%	42.1%	259.6%	18.8%	41.0%	37.4%	47.2%
Net Income	373.1%	331.8%	-39.2%	-76.8%	22.0%	-81.9%	-42.1%	88.8%	311.1%	-2.7%	259.1%	18.8%	41.0%	37.8%	47.4%
EPS - before amortization	**211.2%**	**232.0%**	**-64.7%**	**-77.0%**	**-8.0%**	**-81.3%**	**-37.0%**	**97.1%**	**277.1%**	**-0.2%**	**264.7%**	**19.1%**	**30.9%**	**30.8%**	**43.0%**
EPS - recurring and fully taxed	211.2%	232.0%	-64.7%	-77.0%	-8.0%	-81.3%	-38.7%	53.0%	222.7%	-12.7%	174.2%	-0.8%	40.3%	36.3%	36.8%
Sequential Revenue Growth	-12.1%	12.3%	-21.6%	20.1%		-4.9%	17.5%	0.0%	20.7%		-10.2%	15.0%	2.6%	21.2%	

Source: Company reports, Banc of America Securities LLC estimates.

CBT GROUP PLC
Balance Sheet
($ millions)

	12mo ended Dec-97 (1)	12mo ended Dec-98	6 mo ended Jun-99
ASSETS			
Current assets			
Cash	35.51	65.65	57.95
ST Investments	36.04	36.39	38.88
Accts receivable, net	40.03	43.51	48.67
Inventories	0.62	0.25	0.18
Deferred tax assets, net	0.14	0.25	0.16
Prepaid expenses	4.20	5.78	8.29
Total current assets	**116.53**	**151.82**	**154.12**
Intangible assets	5.60	4.24	52.49
Property and equipment, net	10.21	17.64	19.18
Investments	0.20	0.55	0.70
Deferred tax assets, net	0.34	-	
Other assets	8.45	16.00	18.47
TOTAL ASSETS	**141.33**	**190.24**	**244.97**
LIABILITIES AND SHRHOLDERS' EQUITY			
Current liabilities			
Borrowings under bank overdraft facility	0.01	-	
Accts payable	4.82	5.16	
Accrued payroll and rel expenses	6.41	6.79	
Other accrued liabilities	16.72	20.02	
Deferred revenues	4.55	3.00	
Total current liabilities	**32.51**	**34.98**	**35.46**
Non current liabilities			
Borrowings under bank overdraft facility	-		
Minority equity interest	0.62	0.38	
Other liabilities	0.52	0.08	
Total non-current liabilities	**1.14**	**0.47**	**0.51**
Shareholders equity			
Ordinary shares	6.37	6.73	
Additional paid-in capital	97.87	127.87	
Accumulated profit (deficit)	2.98	19.29	
Cummulative transaction adjustment	0.57	0.91	
Other	(0.11)		
Total Shareholders' equity	**107.68**	**154.80**	**209.00**
TOTAL LIABILITIES AND SHRHOLDERS' EQUITY	**141.33**	**190.24**	**244.97**

(1) Restated for acquisition of Forefront

Source: Company reports.

CBT GROUP PLC
Cash Flow Statement
($ millions)

Cash Flow Statements $ millions	Q4:96	Q4:97	Q4:98	Q2:99
rovided by operating activity				
Net Income	5.3	8.4	2.2	-0.4
Adjustments:				
Depreciation, Amortization and other	0.8	1.2	2.4	2.2
Accrued interest on ST investments	0.1	-0.7	-0.1	-0.2
Other		0.0		5.9
Changes in Op Assets and Liabilities	0.0			
Accts Receivable	-5.4	-11.2	-0.2	-7.0
Inventories	-0.3	0.0	0.4	0.0
Deferred tax assets	0.2	0.0	0.0	0.0
Prepaid expenses and other assets	0.0	-1.7	-2.4	-0.3
Accts payable	0.3	-0.4	-0.8	0.0
Accrued liabilities	0.6	4.1	1.5	-0.4
Deferred revenues	2.2	-1.0	1.1	0.1
Net Cash Prov (Used) by Op Activities	3.9	-1.2	4.1	-0.2
CF provided by investing activity				
Payments of property and equipment	-1.9	-6.6	-2.8	-3.0
Proceeds from sale of investments	-1.3		14.6	12.8
Payments to acquire ST investments	6.3	2.6	-14.7	-12.9
Payment to acquire investment	-5.0	5.0	0.0	-0.2
				0.8
Net Cash Prov (Used) by Investing	-1.9	1.0	-2.9	-2.5
CF provided by financing activity				
Payments of notes payable	0.0	0.0	0.0	0.0
Proceeds (Repayments) under overdraft facil	0.0	0.0	-0.1	0.0
Proceeds receivable from shareholders	0.2	0.0	0.0	0.0
Proceeds frm issuance of preferred shrs in s	0.0	0.0	0.0	0.0
Proceeds frm issuance of ordinary shares, n	1.7	5.8	1.3	3.4
Other	0.0	0.8	0.0	0.0
Net Cash Prov (Used) by Financing Activ	1.9	6.6	1.2	3.4
Effect of Exchg Rate On Cash	0.0	1.0	-0.1	-0.3
Net Change in Cash or Equivalents	3.8	7.4	2.3	0.4
Cash and Equivalents at Period Start	6.2	20.5	55.5	57.6
Cash and Equivalents at Period End	10.0	27.9	57.8	58.0

Source: Company reports.

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DEVRY, INC.

BUY

NYSE: DV

PRICE:	$20.81	FYE 6/30	1999A	2000E	2001E
12-MONTH TARGET PRICE:	$30	EPS			
52-WEEK RANGE:	$32-16	Q1(SEP)	$0.11	$0.14	
FULLY DILUTED SHARES O/S:	70.4 MM	Q2(DEC)	0.15	0.18	
MARKET CAPITALIZATION:	$1,465.2 MM	Q3(MAR)	0.15	0.18	
AVG. DAILY VOL. (3 MOS.):	177,462	Q4(JUN)	0.14	0.18	
SECULAR EPS GROWTH:	20%	FISCAL YR	$0.55	$0.68	$0.84
FY 1999E REVENUES:	$515.2 MM	P/E	37.8	30.6	24.8
MARKET CAP./REVENUES:	284%	P/E/G	189%	153%	124%
6/99 TOTAL DEBT:	NONE	CALENDAR YR	$0.59	$0.72	
6/99 LTD/TOTAL CAP.:	NONE	P/E	35.3	28.9	
6/99 ROAE:	26.0%	P/E/G	176%	145%	
6/99 SHAREHOLDERS' EQ.:	$144.0 MM				
6/99 BOOK VALUE/SHARE:	$2.06				
DIVIDEND/YIELD:	NONE				

Quality and Consistency Have Their Own Rewards

- DeVry, Inc., is one of the largest providers of postsecondary education in North America providing associate, bachelor's, master's and nondegree programs to more than 38,000 students. DeVry has developed effective programs that provide entry-level employment skills in the areas of electronics, information systems, telecommunications and business.
- DeVry has a 68-year track record and a strong brand name providing significant barriers to entry against other proprietary providers. The largest competitive advantage accrues from the company's sales and marketing effort—unlike any campaign launched by traditional providers.
- We believe continuing acceleration in three key metrics—enrollments, revenues and operating margin—illustrate the strength of DeVry's business model, its strong brand recognition and management's attention to quality and profitability.
- We believe tougher, new admissions standards have led to some deceleration in new-student enrollments at mature schools. This metric is obviously alarming, but may portend higher operating margins if student retention continues to improve from the tightened entry restrictions.
- New locations in key metropolitan areas (New York, San Francisco, Los Angeles, Chicago) along with a promising acquisition in Denver are more reasons for investors to be enamored with this leading brand in education, in our opinion.
- The DeVry story is one of stable, consistent growth. The company has met or exceeded consensus earnings estimates every quarter since going public in 1991.

Business Description

DeVry, Inc., was founded in 1931 by Dr. Herman DeVry and now enrolls more than 38,000 full- and part-time students at 16 DeVry Institutes (the "Institutes") around the country and in Canada. The Institutes, DeVry's primary operating subsidiary, generate roughly 85% of the company's total tuition revenues and 78% of overall revenues. The Institutes target learners that are under 24 years of age, and are primarily in technically oriented career courses.

The Institutes are accredited by the North Central Association, one of the six regional accrediting bodies responsible for assessing curricular, operational and financial quality at higher education institutions. At 16 locations in the U.S. and Canada, students can earn associate's and bachelor's degrees in a variety of fields, including accounting, business administration, computer information systems, electronics engineering, technical management and telecommunications management.

The Keller Graduate School of Management (KGSM), which awards master's degrees in business administration, contributes approximately 7% of tuition revenues. Keller Graduate School (KGSM) enrolls approximately 6,000 students at 32 locations across the country, seven of them located within DeVry Institutes. KGSM also offers a MBA degree totally online. Keller students are generally employed full time, are 25-45 years old and possess a college degree.

The remainder of revenue is primarily contributed by Becker Conviser CPA review, the leading provider of CPA preparation services, offered at more than 400 locations across the U.S. and in 45 international sites. Becker offers a variety of course options, ranging from four-week "cram" sessions to 20-week comprehensive review courses.

Investment Thesis

Industry growth is primarily driven by: (1) **demographic trends**, such as consistent growth in the school-age population; (2) **consumer preferences**, such as more adults electing to pursue higher education; (3) **workplace dynamics**, such as the increasing presence of technology, thereby driving the demand for skilled workers; and (4) **competitive changes**, as the country's military continues to downsize, graduating seniors are less likely to be approached by military recruiters.

Although we believe DeVry is well positioned to capitalize on each of the above growth drivers, perhaps the most compelling growth driver is the company's **unparalleled job-placement rates** that appeal greatly to aspiring students and are effectively touted by the company in its aggressive marketing campaign.

Furthermore, DeVry's business model luxuriates in the attractive features listed below:

- **Recurring revenue** from extended enrollment enhances predictability.
- **Strong free cash flow** from steady tuition payments and broad operating margins, which supports debt-free growth and scalability through opening new campuses or learning centers.
- A centralized cost structure and crossutilization of curricula creating **opportunities for operating leverage**.
- **Competitive protection** from strict state licensing and accreditation requirements, which stifle opportunities for new providers.

- **Pricing protection** behind the aegis of annual hikes by traditional schools in excess of 7%.
- **An acyclical business**, as people will go to school in good times to enhance their skills and in bad times to improve their standing in the lengthening queue of labor.

Discussion of Growth Strategies

New Institute Locations

New Institutes constitute the primary growth driver for DeVry. DeVry has opened one to three new campus locations per year since going public in 1991. New institutes are generally located in convenient locations, near freeways in relatively dense population areas.

DeVry opened a new 100,000-square-foot campus in the Silicon Valley in July 1998. The campus already enrolls roughly 1,200 students, and we believe it will eventually enroll more than 3,000 students. DeVry is seeing strong demand from both students and employers in the area. We believe the campus's technically oriented programs resonate within the Silicon Valley workplace.

Beyond the Fremont campus, we see the potential for several additional Institutes in the Bay Area, similar to the strategy DeVry has pursued in Chicago (two schools) and Los Angeles (two schools).

The opening of the New York campus in fall 1998 was, in our view, a landmark event for the company. We believe this is a significant opening for the sustainability of growth and the continued evolution of brand equity for DeVry.

New York recently granted DeVry approval to offer baccalaureate degree programs in accounting, business administration, computer information systems and electronics technology and an associates degree in electronics. We believe enrollments are off to a fast start at the Institute.

We expect management to **open Institutes in West Hills, California, in fall 1999 and in Tinley, Illinois, in summer 2000**. Given the strong demand at the existing Los Angeles and Chicago locations, we expect these two new campuses to make strong contributions to enrollment growth estimates for calendar 2000.

Implementation of Tougher New Admissions Exams

We believe another element of DeVry's growth strategy is the implementation of tougher new admissions tests. By implementing new admission examinations that make it more difficult to gain entrance into an institute, DeVry is increasing student retention by attracting a more committed student. This should allow DeVry to reallocate resources (admissions counselors) in a more productive and profitable way. Counselors will have more time to focus on finding committed new students and will not be bogged down servicing existing students. There is evidence that the retention rates are improving as overall summer enrollment growth of 15.9% exceeded new student growth of 7.5%. The drop-off in new student enrollments is not unanticipated, as we are expecting this short-term effect for the long-term gain of increased retention rates.

TOTAL ENROLLMENT GROWTH VERSUS NEW STUDENT ENROLLMENT GROWTH

	Total Enrollment (Yr/Yr)	New Student Enrollment (Yr/Yr)
Summer Quarter 2000	15.9%	7.5%
Spring Quarter 1999	12.2%	8.3%
Fall Quarter 1999	13.9%	13.5%
Summer Quarter 1999	12.1%	9.5%
Spring Quarter 1998	12.0%	10.5%
Fall Quarter 1998	9.0%	12.5%

Source: Company documents.

DeVry has also expanded its focus and improved the services it offers to its younger students. By providing assistance with financial aid packages, locating housing and helping with administrative matters such as course selection and scheduling, it is believed that these efforts will lead to improved student retention and higher graduation rates.

It is much less expensive for DeVry to retain an existing student than to have to recruit new ones. The capture costs for a new student—including marketing and admissions—can exceed the first semester's tuition. The incremental costs for retaining a student—beyond the cost of instruction—are close to nil, which means retained students generate high-margin revenue. We believe DeVry's focus on retention could pay off handsomely in the long run, potentially leading to significant margin expansion. Anecdotally, we have heard from several managers that if a higher education provider could retain all of its students, it would be two or three or more times as profitable as it is today.

We believe DeVry's focus on retention could provide substantial upside to operating margins within two years. We believe the business model could someday enjoy operating margins in excess of 20%—well in excess of the company's stated objectives.

New KGSM Locations

We expect management to open six to eight or nine KGSM locations per year for the next several years. We believe KGSM has reached a critical mass whereby an accelerated rollout schedule can be achieved while still maintaining academic and operational quality. We believe student demand exists for the KGSM curricula and believe the KGSM programs offer much of the same appeal to education consumers as the Apollo Group's University of Phoenix programs: job-centric courses, offered at convenient times, taught by practice-based faculty, in a collaborative learning environment with other working adults.

Acquisitions

As evidenced by the acquisitions of Conviser and Denver Technical College, DeVry has been active buying small and large providers that have significant brand equity to fill in geographic holes.

- The acquisition of Conviser gives Becker CPA Review a global base of nearly 400 locations. We believe, however, that the company will be able to consolidate many of these 400 locations and reduce operating expenses—Conviser was the only other national provider of CPA review courses, and many of their locations were in the same area as Becker.

- DeVry recently purchased Denver Technical College (DTC), an accredited technically oriented college in Denver, Colorado. We believe the acquisition makes sense and offers significant synergies for both companies:
  - DTC (which has very few, if any, high school-age students and no high school marketing or recruiting force) can now enroll high school students, recruited by DeVry reps. These reps have already achieved the difficult task of establishing high school relationships. New high school graduates should help fill classrooms left unoccupied during the day by DTC's primarily older student body.
  - DeVry reps in Denver will be in a much stronger position to recruit local high school students to a local campus rather than sending them to the nearest DeVry campus in Phoenix or Kansas City.

New Programs

One of the attractive components of the DeVry system is the ability to leverage new programs into the existing campus network. In response to strong employer and student demand, DeVry recently introduced a one-year IT program, targeted at working adults who already have a bachelor's degree (in fact, a college degree is a requirement) but need to bolster their skill sets in order to continue their career advancement. The IT program, initiated in 1998, is doing well at the campuses that offer it. We believe the rollout schedule will be constrained not by student demand, which we believe is very strong, but by space at existing Institutes.

New programs are generally piloted at one or two institutes until sufficient feedback from faculty and students is received. The program is rolled out to the rest of the Institutes (if the demand warrants) over a two- to three-year period, or into roughly two Institutes per academic term. We expect management to roll out the IT program into one or two campuses per term.

Canadian Schools

DeVry has been reinstated as an eligible institution under the Ontario Student Assistance Program. The two DeVry campuses in the Toronto area can now, without special disclosure and signed student affidavits, offer, process and submit applications for financial aid. (Except for a temporary suspension from October 1995 to February 1996, the schools had processed all applications with a special disclosure that students were required to sign.)

We believe both Ontario campuses together can enroll close to 3,000 students, as compared to combined current enrollments of approximately 1,500 based on our estimates. We believe DeVry lost $3-5 million per year (at the operating income level) at these schools in 1996-1998, and the reinstatement, and likely enrollment increases, in our view, will provide a positive financial impact on future earnings. Currently, both locations' enrollments are far below capacity.

We believe the Canadian opportunity should almost be viewed as two new campuses because: (1) they are losing money now, but have an opportunity for strong growth; and (2) we expect them to achieve attractive, sustainable profit margins in excess of 25%.

Co-Locating Institutes and KGSM

KGSM schools are co-located with a DeVry Institute when the company believes the demographics of the area can support a Keller school. The primary impetus is not cost efficiencies but student demand

and convenience. The company currently has seven KGSM schools located with existing DeVry Institutes, and while some Institute locations will probably get KGSM schools, the majority of new KGSM schools (six to eight per year for the next several years) are expected to be stand-alone.

We believe co-location provides DeVry with additional opportunities to promote the "bachelor's-to-master's" track that would keep a student at DeVry for additional time. We believe the company will continue this strategy and gain further synergies as the number and breadth of programs expands at both the Institutes and KGSM, providing the company with the ability to retain students for several years.

Obviously, co-locating DeVry with Keller—and possibly Becker centers—provides DeVry with a strong opportunity for operating leverage and improving margins on the revenue from the retained students.

The Business Model

Revenue

DeVry revenue growth is a combination of enrollment growth and tuition price increases. We expect DeVry to continue to raise tuition 5-7% per year at all three operating divisions.

Institutes

We believe summer's enrollment growth is a very strong predictor for the NTM (next 12 months) revenue. Enrollment patterns are consistent—particularly for a mature business like DeVry with a lengthy operating history. Mid-year enrollment growth from new campuses like Fremont and New York—which may add 2,000-2,200 students during the year, in total, to their enrollment logs—is masked by seasonal declines in the spring and summer that are experienced in the mature schools.

We derive our fiscal 2000 revenue estimate of $406 million for the Institutes as follows:

- We believe DeVry Institutes will account for 85% (historically consistent), or $406 million, of total fiscal 2000 tuition revenues.
- Two part-time students equate to one FTE (full-time equivalent), and we believe roughly one-third of the students are part-time students. Therefore, estimated enrollments of 42,000 for fiscal 2000 are, on average, constituted by roughly 28,000 full-time students and 14,000 part-time students, which equates to 35,000 FTEs (28,000 + (14,000/2) = 35,000).
- An FTE takes 43 units per calendar year (a full load).
- An FTE is charged approximately $270 per unit.

Therefore, 35,000 FTEs, taking 43 units per year at $270 per unit generates approximately $406 million in revenue, or 85% of our fiscal 2000 total tuition revenue estimate.

Keller Graduate School of Management (KGSM)

Keller students can enroll in one of six masters programs. Keller operates five 10-week "quarters" during the year, so students could conceivably take one term off per year and still finish the degree in four years (averaging one course per term).

In line with historical trends, our fiscal 2000 KGSM revenue estimates are 7% of total tuition revenues. For fiscal 2000, we derive our KGSM revenue estimate of $32-34 million as follows:

- We estimate average fiscal 2000 enrollments of 5,270, up 20% from 4,819 in fiscal 1999. Our enrollment projections assume that the company will open four to five locations (at 200 students per location) in fiscal 2000. Otherwise, we assume relatively stable enrollments at the mature campuses (roughly 200-400 depending on the location).
- Average tuition per course of $1,275, to $1,305.
- Equates to average tuition per calendar year of $6,375-6,525.
- In summary, 5,270 enrollments **x** $1,290 per course **x** five courses per year = $34 million, or 7% of our total tuition revenues.

We believe our projections could be conservative based on management's intention, in our view, to open six to nine new KGSM locations in each of next two years. The additional enrollments, perhaps 400-1,000 per year, could add upside of $2-5 million to our KGSM revenue projections.

Becker Conviser CPA Review

In July 1999, Becker acquired Conviser Duffy (CD) CPA Review from publishing giant Harcourt General. Conviser Duffy (to be renamed Becker Conviser) provides CPA review courses to more than 12,000 students at 200 locations across the United States. No financial details for Conviser were disclosed. But given that: (1) CD "enrolls" more than 12,000 students; and (2) we believe Conviser charges much less for their courses than Becker, we estimate that Conviser will contribute roughly $8-10 million in annual revenues.

Becker Conviser ("Becker") courses range in length from four-week "crash courses" to 20-week comprehensive courses. We estimate that for fiscal 2000, Becker Conviser will enroll 30,000 students who will pay an average almost $1,500 per course, yielding revenues of $45 million, up 43% from 1999's.

Operating Expenses

Operating expenses are divided into two categories: cost of instruction and costs of service.

Costs of instruction include such items as teacher salaries and related staff, which generally makes up 60% of total costs of instruction. This category also includes facilities costs, supplies, general student education-related expenses and the cost of tuition refunds and uncollectible accounts.

DeVry gains some leverage from clustering multiple campuses in larger metropolitan areas, such as Chicago. We believe the company can reduce, on a percentage-of-sales basis, expenditures for marketing, promotion and corporate overhead by clustering several centers in such a way as to maximize convenience for existing and potential students, making it easier for them to enroll and attend an Institute. For example, the Los Angeles area currently has two locations in operation, approximately 45 minutes to one hour apart, with a third location planned to open within the next few months. This third location will be located roughly one hour from the other two locations, forming a triangle of Institutes that will blanket the Los Angeles basin.

DeVry centrally generates its national advertising and high school promotional campaigns and then adjusts them for specific target markets. We believe the company gains some G&A leverage by utilizing this strategy, particularly when the campaigns are utilized by several campuses in a single area.

Costs of service expenses include the costs of new student recruiting, general and administrative costs and curriculum development costs. This line item will periodically show increases in advance of new center openings as the company ramps up marketing and advertising to recruit new students.

Under normal conditions, we expect costs of service to grow in line with revenue growth. However, as the company builds out new campuses they incur significant front-end expenses with little revenue, which drives up costs of service as a percentage of sales. We believe there is some leverage opportunities in specific line items such as corporate overhead, curriculum development (particularly when adding a new course to an existing program) and student recruiting costs (as the quality of DeVry's enrollees rises, we believe student recruiting and retention costs will decline slightly).

Profitability

We do not expect DeVry to gain significant leverage from opening new campus locations, as each campus is served by a management structure that can not be leveraged across other campuses. Resources cannot be shared by two or more Institutes because the volume of students, programs, courses and physical location and size are not conducive to a shared staff structure.

However, we do recognize that DeVry's focus on student retention could have a significant impact on the company's profitability. Thus, we believe over the long term, DeVry's operating margins should continue to expand.

DeVry has met or beat consensus estimates every quarter since going public in 1991, and we expect this consistency to continue.

Strong Management Team Leads the Way

DeVry is led by a management team that we believe is among the best in the industry. CEO Dennis Keller has been with DeVry since 1973, co-founding KGSM that year. President Ron Taylor, the other co-founder of KGSM, has also been with DeVry since 1973.

Management owns approximately 18% of the common stock of DeVry, and we believe its commitment to education is deep on a personal and professional level. We are confident that DeVry management can continue to execute the business strategy and build shareholder wealth over the long run.

Investment Conclusion and Recommendation

DeVry has:

- A long history of consistent growth.
- Opened an average of one to three Institutes and three to six KGSM locations per year.
- Grown enrollments at 10-12% per year since 1995.
- Exceeded consensus estimates every quarter since it went public in 1991.

We believe the combination of favorable secular trends, an attractive business model and a talented management team should enable the company to succeed for the foreseeable future.

Accelerating Trends

The fourth quarter of 1999 revealed continuing strong performance in three critical metrics: enrollments, revenues and operating margins. For the last two to three years, DeVry has shown acceleration in all of these metrics, unique in the industry at this time. We have highlighted in the table below those quarters that have seen increases in growth rates from the prior year.

YEAR-OVER-YEAR GROWTH

	F1997	F1998	F1999E	F2000E
Enrollments				
Summer	4.6%	6.9%	12.1%	15.9%
Fall	4.3%	9.0%	13.9%	
Spring	4.7%	12.0%	12.2%	
Revenue Growth				
Q1	16.1%	15.9%	16.9%	
Q2	21.6%	11.1%	19.5%	
Q3	18.6%	14.3%	19.0%	
Q4	18.2%	17.1%	21.1%	
Operating Margins				
Q1	12.8%	12.9%	13.6%	
Q2	14.5%	15.1%	15.5%	
Q3	13.7%	14.8%	15.4%	
Q4	13.2%	13.6%	14.6%	

Source: Company documents.

We believe DeVry should trade at a premium to its growth rate because we continue to believe DeVry is one of the strongest, most consistent growth stories in the education services sector:

- The company offers investors a solid opportunity to participate in the attractive higher education industry. There could be acceleration in the top- and bottom-line growth rates going forward because of expansion in major markets (Chicago, Los Angeles, New York and San Francisco).
- The management team is strong, and we expect it to continue to grow the business successfully. DeVry has an excellent track record of meeting or exceeding consensus estimates.

Same-Store Enrollment Growth

DeVry's enrollment growth has been accelerating in recent terms, as indicated by the chart below. Historically, DeVry has posted year-over-year enrollment increases of 10-15%, and we expect this consistency to continue and possibly accelerate as new locations in metropolitan areas, recent acquisitions and an expected turnaround at DeVry's Canadian campuses should contribute significantly to enrollment growth over the coming terms.

Furthermore, we believe the addition of the IT classes at some of the institutes will contribute to enrollment growth. This 12-month program is a derivative of core technology programs and it should be more attractive to recent college graduates and adult students. The different orientation of this program as compared with core DeVry programs is that it is intended to serve adults with managerial and

administrative backgrounds. The IT programs should be a natural addition to the weekend and evening programs which currently enroll many adults. A similar program is already being offered in Canada and has been highly successful.

DEVRY INSTITUTES SUMMER ENROLLMENT GROWTH

Fiscal Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Summer Enrollment	21,836	22,531	23,788	23,873	26,374	27,600	29,510	33,088	**38,336**
Yr/Yr Growth	6%	3%	6%	0%	10%	5%	7%	12%	**16%**

Source: Company documents.

We believe summer enrollment figures are a strong indicator of fall enrollment growth, and therefore, expect fall 1999 numbers to be strong.

We will continue to monitor new student enrollments and retention to ascertain whether the admissions test or other factors are keeping mature campus, new student growth flat.

Investment Considerations

Among the risks we believe investors should consider when analyzing higher education providers are the following:

- For-profit higher education providers generally derive a substantial percentage of their revenues from federally sponsored tuition loan programs, and thus are subject to extensive regulation by the Department of Education and the Office of the Inspector General. In general, these regulations govern the amount of revenue that can be derived from federal financial aid programs (90%), the financial strength of the company, student recordkeeping and course program quality. The Higher Education Act (HEA) of 1965 and its amendments govern the roles and responsibilities of both providers and regulators.
- Federal financial aid programs are legislated by Congress, with government programs reviewed yearly as part of the budget process.
- Most states require higher education providers to be accredited by either a national or regional body in order to operate as an educational institution in the state. Accreditation is a rigorous and ongoing process designed to monitor program educational quality, student outcomes, graduation and placement rates and the introduction of new curricula.
- Students have many choices available when considering higher education, counting other two- and four-year universities, immediate employment and military service, although the last alternative is not as prevalent as it used to be.
- Student enrollments generally show significant seasonality during the year, in line with the traditional beginning and ending periods for traditional colleges. Summer (June) and winter (December) quarters generally show lower enrollments and thus reduced profitability relative to the other two terms.

DeVry, Inc., is one of the largest providers of proprietary postsecondary education in the North America providing associate, bachelor's, master's and non-degree programs to nearly 50,000 students at 210 locations. Through its three subsidiaries, DeVry Institutes of Technology, Keller Graduate School of Management and Becker CPA Review, the company offers instruction in electronics, information systems, telecommunications, business and CPA review.

DEVRY, INC.

Quarterly Sales and Earnings Model
($ 000s)

Fiscal Year End June 30,	Jun-98					Jun-99					Jun-00	Jun-01
	1998A	1Q99A	2Q99A	3Q99A	4Q99A	1999A	1Q00E	2Q00E	3Q00E	4Q00E	2000E	2001E
Revenues:												
Tuition	$321,029	$84,753	$96,479	$98,669	$102,900	$382,801	$105,436	$122,020	$122,298	$123,047	$472,801	$565,735
Other Educational	30,877	8,868	11,074	11,347	5,323	36,612	9,680	12,750	12,644	7,302	42,377	49,967
Total Revenues	**351,906**	**93,621**	**107,553**	**110,016**	**108,223**	**419,413**	**115,116**	**134,770**	**134,942**	**130,349**	**515,177**	**615,702**
Costs and Expenses:												
Cost of Educational Services	198,273	56,586	58,372	63,932	57,280	236,170	69,415	73,045	74,623	68,955	286,038	340,351
Student Services and Admin.	103,802	24,307	32,491	29,124	35,133	121,055	29,815	40,566	39,538	41,190	151,109	179,027
Total Costs and Expenses	**302,075**	**80,893**	**90,863**	**93,028**	**92,413**	**357,225**	**99,230**	**113,611**	**114,161**	**110,145**	**437,147**	**519,378**
Operating Income	49,831	12,728	16,690	16,988	15,810	62,188	15,886	21,159	20,781	20,204	78,030	96,324
Interest Income (Expense)	652	67	216	175	462	920	200	300	301	399	1,200	1,615
Income Before Income Taxes	50,483	12,795	16,906	17,415	16,272	63,108	16,086	21,459	21,082	20,603	79,230	97,939
Income Tax Provision	19,759	4,977	6,607	6,512	6,184	24,280	6,354	8,476	8,327	8,138	31,296	38,686
Net Income	**$30,724**	**$7,818**	**$10,299**	**$10,623**	**$10,088**	**$38,828**	**$9,732**	**$12,983**	**$12,754**	**$12,465**	**$47,934**	**$59,253**
EPS	**$0.44**	**$0.11**	**$0.15**	**$0.15**	**$0.14**	**$0.55**	**$0.14**	**$0.18**	**$0.18**	**$0.18**	**$0.68**	**$0.84**
Shares Outstanding												
Fully Diluted Shares Outstanding	69.9	70.3	70.4	70.5	70.4	70.4	70.5	70.6	70.6	70.7	70.6	70.9
Total Institute Enrollments		33,088	37,970	37,021			38,336					
Yr/Yr Growth		12.1%	13.9%	12.2%			15.9%					
Margins												
Cost of Educational Services	56.3%	60.4%	54.3%	58.1%	52.9%	56.3%	60.3%	54.2%	55.3%	52.9%	55.5%	55.3%
Student Services and Admin.	29.5%	26.0%	30.2%	26.5%	32.5%	28.9%	25.9%	30.1%	29.3%	31.6%	29.3%	29.1%
Operating Income	14.2%	13.6%	15.5%	15.4%	14.6%	14.8%	13.8%	15.7%	15.4%	15.5%	15.1%	15.6%
Income Before Income Taxes	14.3%	13.7%	15.7%	15.8%	15.0%	15.0%	14.0%	15.9%	15.6%	15.8%	15.4%	15.9%
Effective Tax Rate	39.1%	38.9%	39.1%	37.4%	38.0%	38.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%
Net Income	8.7%	8.4%	9.6%	9.7%	9.3%	9.3%	8.5%	9.6%	9.5%	9.6%	9.3%	9.6%
Percent Change												
Revenues:												
Tuition	14.3%	16.1%	19.6%	18.4%	22.5%	19.2%	24.4%	26.5%	23.9%	19.6%	23.5%	19.7%
Other Educational	16.3%	24.9%	19.2%	24.2%	-0.5%	18.6%	9.2%	15.1%	11.4%	37.2%	15.7%	17.9%
Total Revenues	14.5%	16.9%	19.5%	19.0%	21.1%	19.2%	23.0%	25.3%	22.7%	20.4%	22.8%	19.5%
Cost of Educational Services	11.3%	16.2%	18.0%	24.6%	17.4%	19.1%	22.7%	25.1%	16.7%	20.4%	21.1%	19.0%
Student Services and Admin.	18.7%	15.7%	20.6%	6.1%	23.8%	16.6%	22.7%	24.9%	35.8%	17.2%	24.8%	18.5%
Operating Income	19.5%	23.0%	23.0%	23.8%	29.7%	24.8%	24.8%	26.8%	22.3%	27.8%	25.5%	23.4%
Income Before Income Taxes	26.7%	24.3%	23.6%	25.0%	29.4%	25.0%	25.7%	26.9%	21.1%	26.6%	25.5%	23.6%
Net Income	27.0%	24.5%	23.4%	25.9%	31.7%	26.4%	24.5%	26.1%	20.1%	23.6%	23.5%	23.6%
EPS	25.7%	22.2%	25.0%	25.7%	31.4%	25.9%	25.5%	22.7%	19.7%	23.1%	22.5%	23.1%

Source: Company reports and Banc America Securities LLC estimates.

DEVRY, INC.
Balance Sheet
($ millions)

	Jun-96 1996A	Jun-97 1997A	Jun-98 1998A	Mar-99 3Q99A
Cash & Equivalents	$29,948	$38,865	$31,881	57465
Restricted Cash	16,590	12,104	16,875	30442
A/R, Net	9,684	12,322	11,878	62816
Inventories	3,290	4,549	5,218	3821
Prepaid Expenses, Other	2,055	2,676	3,868	3338
Total Current Assets	**61,567**	**70,516**	**69,720**	**157882**
Land, Buildings, Equipment	120,724	148,954	173,093	202210
Accumulated Depreciation	-49,283	-58,266	-64,988	-76245
PPE, Net	71,441	90,688	108,105	125965
Other Assets				
Intangibles	37,709	37,770	37,908	38181
Perkins Program Fund, Net	5,483	6,075	6,660	7131
Other	1,889	1,654	1,499	3909
Total Other Assets	**45,081**	**45,499**	**46,067**	**49221**
Total Assets	**$178,089**	**$206,703**	**$223,892**	**333068**
Liabilities				
Accounts Payable	18,859	22,301	24,116	25,455
Accrued Compensation	14,735	16,077	18,422	22,593
Accrued Expenses	7,640	7,620	8,504	5,831
Advance Tuition Pmts	7,617	6,594	9,202	6,500
Deferred Tuition Revenue	3,609	5,701	5,735	94,564
Total Current Liabilities	**$52,460**	**$58,293**	**$65,979**	**154943**
Revolving Loan	61,500	33,000	10,000	0
Deferred Inc. Tax Liability	2,207	3,060	3,612	3660
Deferred Rent, Other	4,635	7,080	8,045	9087
Total Liabilities	**$120,802**	**$101,433**	**$87,636**	**167690**
Shareholder's Equity				
Common Stock	166	345	693	694
Additional P.I.C.	36,694	60,482	60,608	60885
Retained Earnings	19,987	44,006	74,385	103125
Cumulative Translation Adj.	440	437	570	674
Total Shareholder's Equity	$57,287	$105,270	$136,256	165378
Total Liab + S.E	**$178,089**	**$206,703**	**$223,892**	**$333,068**

Source: Company reports.

DEVRY, INC.
Cash Flow Statement
($ 000s)

	Jun-96 1996A	Jun-97 1997A	Jun-98 1998A	Mar-99 3Q99A
Net Income	$19,245	$24,186	$30,724	$28,740
Adjustments				
Depreciation	7,516	9,676	12,397	11,457
Amortization	63	1,586	1,590	1,248
Provision: Refunds, Uncollectible Accts	16,130	16,786	15,984	15,094
Deferred Income Tax (Provision) Benefit	-456	1,978	-1,007	-45
Loss (Gain) on Disposals	19	-116	331	139
Changes in Assets & Liabilities				
Restricted Cash	3,589	4,486	-4,771	13,567
AR	-18,645	-19,257	-15,375	-65,988
Inventories	263	-1,259	-669	1,397
Prepaid Expenses	-118	-1,746	-1,299	-2,266
Perkins Program	-1,188	274	342	-515
AP	3,210	3,442	1,815	1,339
Accured Salaries, Wages, Other	6,239	1,322	4,895	1,498
Advance Tuition Pmts.	-7,340	-1,023	2,608	-2,702
Deferred Tuition Rev.	-159	2,092	34	88,829
Net Cash Provided by Op. Activ.	**$28,368**	**$42,427**	**$47,599**	**$64,658**
Cash Flows from Investing				
CapEx	-18,352	-28,807	-31,845	-29,456
Acquisitions	-16,930			
Intellectual Property Pmts.	-17,935			
Cash Used in Investing	**-$53,217**	**-$28,807**	**-$31,845**	**-$29,456**
Cash Flows From Financing				
Proceeds from Stock Options	84	217	129	278
Proceeds from Credit Fac'y	46,500	15,000	6,000	
Repayments under Credit Fac'y	-18,029	-43,500	-29,000	-10,000
Repayments of Debt				
Proceeds from Common		23,583		
Net Cash Used in Financing	**$28,555**	**-$4,700**	**-$22,871**	**-$9,722**
Effects of Exchange Rates	-10	-3	133	
Net Increase in cash	3,696	8,917	-6,984	25,584
Cash @ Beginning	26,252	29,948	38,865	31,881
Cash @ End	29,948	38,865	31,881	57,465

Source: Company reports.

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PROVANT, INC.

BUY

NASDAQ: POVT

PRICE:	$13.50	FYE 6/30	1999A	2000E	2001E
12-MONTH TARGET PRICE:	$25	EPS			
52-WEEK RANGE:	$25-10	Q1(SEP)	$0.13	$0.16	
FULLY DILUTED SHARES O/S:	18.4 MM	Q2(DEC)	0.15	0.19	
MARKET CAPITALIZATION:	$248.4 MM	Q3(MAR)	0.18	0.22	
AVG. DAILY VOL. (3 MOS.):	70,983	Q4(JUN)	0.21	0.24	
SECULAR EPS GROWTH:	25%	FISCAL YR	$0.68	$0.80	
FY 1999E REVENUES:	$188.0 MM	P/E	19.9	16.9	
MARKET CAP./REVENUES:	132%	P/E/G	79%	68%	
6/99 TOTAL DEBT:	$52.0 MM	CALENDAR YR	$0.72	$0.85	
6/99 LTD/TOTAL CAP.:	21.9%	P/E	18.8	15.9	
6/99 ROAE:	6.0%	P/E/G	75%	64%	
6/99 SHAREHOLDERS' EQ.:	$185.0 MM				
6/99 BOOK VALUE/SHARE:	$10.08				
DIVIDEND/YIELD:	NONE				

- PROVANT, Inc., is a leading provider of performance-improvement products and services. The company was formed in 1997 with the merger of seven of the industry's leading providers and has grown to a revenue run rate of more than $150 million.
- We believe favorable secular trends, a well-capitalized structure, talented management and acquisition momentum are assisting **PROVANT's rapid emergence as a leading brand** in performance-improvement services. Brand could be an important driver for PROVANT as it moves to consolidate this fragmented industry.
- The $60 billion training market is inhabited by thousands of mom and pop providers, few, if any, with the financial, managerial or operational resources to compete on a national level or to provide one-stop shopping for today's global corporations. We believe PROVANT is well positioned to fill this void.
- The tremendous growth in the $14-billion outsourced training functions is driven by: (1) a desire to outsource non-core operations; (2) the realization that a skilled workforce is vital to maintaining a competitive advantage; and (3) the ability of training providers to deliver better, cheaper and faster than internal training departments can.
- PROVANT's J. Howard & Associates won a $10 million, one-and-a-half-year contract with Home Depot to deliver diversity training. **This may be the first non-acquisition-related positive surprise in the stock's 13-month history and it demonstrates the strong potential of the base business.** We believe the win is evidence that the PROVANT brand is emerging as a force in large corporate accounts that are interested in working with vendors who offer a broad array of services. We believe this may be the single largest contract in the history of soft-skill training.

Business Description and Investment Thesis

PROVANT, Inc., based in Boston, provides a broad range of **performance-improvement services and products** to Fortune 1000 companies, other large and medium-sized corporations and government entities. PROVANT's services and products are designed to increase the productivity of organizations by improving employee selection, recruitment and retention; enhancing employee work skills; developing employee management and leadership skills; and facilitating organizational direction and change. The company offers both customized and "off-the-shelf" services and products. Delivery methods include instructor-led classroom training and seminars, multimedia software and distance-based media.

We believe one way of providing customers with additional value is to offer a full array of performance-improvement products and services in a convenient package. We believe this "one-stop shopping" will prove to be profitable for well-managed companies that exist in a niche and consolidating industry such as training in which differentiable product and service offerings can be important factors in long-term success.

According to *Training Magazine*, domestic corporations with more than 100 employees budgeted approximately $58 billion on training in 1997 compared to approximately $45 billion in 1992. We believe long-term growth opportunities exist for well-positioned, well-managed training companies, driven by a number of factors:

- A **trend toward corporate outsourcing** of training in order to capitalize on the expertise of outside vendors and to focus on core competencies.
- Increasing recognition that education, training and effective human resource management are competitive necessities rather than optional expenses as we evolve **from a manufacturing-based to a service-based economy**.
- The **expanding use of technology** has increased the amount of training required and the number of employees participating in such training.

We believe all of the above should create substantial long-term growth and return potential while enhancing the investment appeal of PROVANT.

The Company: One-Stop Shopping for Performance Improvement

Founding Companies

We believe the seven founding companies are recognized leaders in their respective fields.

Behavioral Technology, Inc. (BTI), specializes in "train-the-trainer" services, helping clients improve employee selection and provides managers with a methodology for assessing strengths and weaknesses of current employees. BTI's training services are delivered through instructor-led training and train-the-trainer programs. The company's lead product, Behavioral Interviewing®, accounted for approximately 90% of the company's revenue in fiscal 1997. BTI's founder, Dr. Paul Green, is credited with developing the concepts behind behavioral-based interviewing and is widely acknowledged as a leader in the field. BTI's clients include Hewlett-Packard Company, Federal Express and Royal Bank of Canada.

Decker Communications, Inc., provides training to improve employees' business communication skills and communications between management and employees. Decker's training services are delivered primarily through instructor-led workshops. Decker's flagship program, Effective Communicating™, and its custom versions of the same product, accounted for approximately 84% of the company's revenue in fiscal 1997. Decker's clients include Bank of America, Coopers & Lybrand L.L.P. and Hewlett-Packard Company.

J. Howard & Associates, Inc., uses instructor-led classes that incorporate self-assessment and skills-building exercises to help clients identify and deal with diversity issues in the workplace, including those associated with race, age and gender. The company's lead product, Managing Inclusion, which accounted for approximately 57% of the company's revenue in its fiscal year-ended December 31, 1996, is a two-day program designed to help individual managers and client companies understand the ways in which diversity in the work force contributes to the productivity of an organization. J. Howard's clients include Abbott Laboratories, Bank of America and Northwest Airlines, Inc.

Learning Systems Sciences (LSS) designs custom training products primarily for retailers using multimedia, computer-based formats. LSS's products are designed to facilitate faster learning of customer interface devices and higher productivity of retail associates. LSS's training products are delivered primarily through interactive multimedia software and distance-based media. LSS's clients include Federated Department Stores, Inc., J.C. Penney Company, Inc., and The Kroger Co.

MOHR Retail Learning Systems, Inc., provides "train-the-trainer" services and products to the retail industry that are designed to create a more customer-oriented focus at the sales associates and managers. MOHR offers its services and products through seminars and by licensing its text-based and video-based materials to its clients. The company's Bottom-Line Buying Plus program provides negotiation skills training for buyers at retail organizations. MOHR's clients include Eckerd Corporation, Victoria's Secret Stores, and The Sports Authority, Inc.

Novations Group, Inc. assists clients in clarifying and communicating their business strategies and redesigning their organizations and business processes. Novations also provides its clients with a variety of organizational assessment tools that are designed to gather and analyze feedback on either an organizational or individual basis and to initiate change in response to such feedback. In its most recent fiscal year, approximately 60% of Novations' revenue was derived from strategic consulting services provided to organizations in industries such as the petrochemical, financial services, consumer products, transportation and telecommunications industries.

Star Mountain, Inc.'s core business consists of providing customized training services and products to individuals within federal, state and local government entities and corporations. In addition, Star Mountain provides a limited amount of computer network design, sales, installation and support, and computer network security research and development. Star Mountain delivers its training courseware to clients in a variety of formats (including written materials and interactive multimedia software) but typically does not directly train its clients. Approximately 32% of Star Mountain's revenue in its fiscal year ended December 31, 1996 was derived from the United States Department of Defense, 43% from other federal entities, 1% from state and local government entities and the remainder from corporations. In addition to the Department of Defense, Star Mountain's largest government clients include the Internal Revenue Service and the Immigration and Naturalization Service.

Acquired Companies

KC Resources primarily comprises professional trainers and instructional designers based in the mid-Atlantic region. The company performs custom development of CBT training primarily in the telecommunications market. We believe KC Resources' strength in telecommunications is a strong complement to LSS's core competency in retail.

American Media (AMI) is a leading producer and distributor of "how to" corporate training products and tools. These products address workplace concerns including sexual harassment, discrimination, diversity management, conflict resolution, interviewing skills and performance appraisals. We believe the acquisition provides PROVANT with access to a large customer base and expanded distribution capabilities. AMI's products are currently distributed to medium and small corporations in 65 countries and 22 languages and are sold through direct mail, telemarketing and an extensive network of international distributors. In addition, AMI has an extensive catalog circulation list and a high-volume call center operation.

Strategic Interactive (SI) designs web-based training and human resource systems that can be accessed through the Internet and/or corporate intranets. SI is not primarily a content developer. The company appears to build, install and maintain learning systems that, in our view, are becoming more critical to all businesses. Learning systems strive to improve employee performance via a number of strategies, including assessing competencies, delivering training, tracking usage and measuring results. We believe SI strengthens PROVANT's presence in the Midwest as well as in the manufacturing core of corporate America because of SI's existing business with General Motors and Ford.

Gulliver Ritchie Associates (GRA) produces interactive multimedia training programs and electronic performance support systems (EPSS). GRA provides training and performance support on CD-ROM and Internet/intranet platforms. GRA's training programs are designed for use as training tools in the classroom, for individual self-paced training, and as performance support systems in the field. GRA's EPSS delivers just-in-time, critical trouble-shooting information to users in the field.

Executive Perspectives (EP) is a business education company that develops customized computer-based simulations that demonstrate the impact of decisions on business results. EP merges management consulting and education with technology to provide clients with powerful and unique learning experiences aimed at increasing employee effectiveness. Essentially, EP consultants understand and apply adult learning theory to business education, while EP technologists develop software for classroom, intranet or Internet learning delivery. EP's sophisticated business simulation models allow management to translate strategy into tactical decisions, and then measure the outcomes.

Project Management Services (PMSI) provides project management and integration services for large-scale technology and operational implementation. **We believe this acquisition filled an important gap in PROVANT's goal of becoming a full-service, one-stop-shop provider of training and performance improvement services.** We believe PMSI brings expertise in several important industries including telecom, information technology and transportation.

Mission-critical services such as project management, IT implementation and deployment, and business systems training and consulting, in our view, are less vulnerable to economic cycles than other types of training, which to this point had been PROVANT's focus. We believe "mission-critical" means just that companies cannot afford to cut back training expenditures in these areas because the financial penalties for doing so are real, measurable and substantial.

Training that is essential to **producing or selling the product** is less likely to suffer budget cutbacks. We believe two-thirds of training expenditures comes from business unit managers and one-third from the human resources budgets. Mission-critical training like sales training would be paid out of the budget of the sales department, not the human resources department. Training for scientists, engineers and salespeople cannot wait for headier times whereas human resources-related training like leadership, innovation and sexual harassment can wait. **What is more important: training your floor people to be OSHA-compliant or teaching your admin people about "communicating in a multiethnic work force"?**

Multimedia division of OC Incorporated (OCI). OCI's multimedia division provides training system engineering and training technology services for government and commercial markets in the aviation sector. OCI specializes in the resolution of complex technical training and human performance issues. Products include 3-D, moving model aircraft recognition training, electronic warfare information systems training and aircraft maintenance training.

Educational Discoveries (EDI) facilitates change within client organizations through the matching of corporate cultures and values. EDI has developed the concepts of "accelerative learning" and emotional literacy, and uses them to create customized and off-the-shelf workshops and services that are emotionally engaging and intellectually stimulating.

Solution Selling (SS) is a provider of unique selling methods and an organization of independent affiliates. It helps clients define, automate and implement the entire sales process from market awareness to customer satisfaction. All PROVANT sales forces will be trained in the Solution Selling methodology.

Sales Performance International (SPI) is the world's largest provider of Selling Solution's sales methodology to clients.

Training Types

We believe "soft skills" and IT training are no longer sufficiently broad or appropriate for capturing the dimensions of the training industry. Therefore, we break training into two more appropriate groups, in our opinion: PWT training (people-with-tools) and PTP training (people-to-people).**At the current time, PROVANT focuses on PTP training.**

People-to-People Training	People-With-Tools Training
Group management	Heavy machinery operation
Selling and marketing	Truck driving
Communications	Automobile repair
Diversity	Typing
Interviewing techniques	Software skills
Team building	Culinary
Conducting meetings	Art/design
Negotiation skills	Dental equipment
Public speaking skills	Surgical equipment
Personal improvement	Musical instruments

Source: Company reports, Banc of America Securities LLC estimates.

Growth Strategies

We believe PROVANT will utilize several strategies to fuel future growth. These strategies can be classified into internal and external strategies, although many aspects of each strategy can be applied in both arenas.

Internal

Implement Aggressive Sales and Marketing

We believe PROVANT will pursue an aggressive sales and marketing strategy designed to establish new client relationships and expand existing relationships by:

- Supplementing the sales efforts of the founding companies.
- Establishing a nationwide telemarketing program focused primarily on medium-sized corporations.
- Participating in a greater number of conferences and trade shows.
- Building a national advertising and promotion campaign.

Expand Service and Product Offerings

The increasing "productization" of training content offers the potential for **recurring revenue and improves the possibility for customer loyalty that is one of the most important factors governing long-term market share expansion and margin stability.** For example, the company is currently introducing a new employee recruitment product, based on its Behavioral Interviewing® process, which teaches clients how to recruit in a tight labor market, certainly a relevant topic in today's world.

In addition, we believe the company intends to capitalize on its expertise in certain industries, such as the retail industry, by customizing services and products for other industries, such as the hospitality, transportation and health care industries.

Leverage Investments in Technology

We believe accelerating migration from instructor-led training to technology-delivered training offers a compelling opportunity for PROVANT to digitize its content and broaden distribution. We believe customers are electing technology-delivered training (TDT) because it:

- Lowers opportunity costs of time spent away from the job by employees.
- Expands access to training and development services.
- Lowers overall training and development costs, including travel expenses of employees.
- Offers the ability to measure and track employees' progress.

PROVANT expects to deploy leading technologies in the delivery of many of its services and products, including delivery through distance-based media, such as video conferencing, intranets and the Internet. For example, **the technical expertise of LSS, Star Mountain and American Media** can leverage core content to provide training through interactive multimedia software.

Capitalize on Cross-Selling Opportunities

The company provides training and development services to thousands of corporations and government entities across the country. Each of the founding companies has established strong relationships with its clients but historically has offered its clients only a limited selection of training and development services and products. We believe opportunities exist for each founding company to cross-sell its services and products to clients of the other founding companies.

- BTI is likely helping its co-founders select new employees.
- Decker is surely helping its co-founders improve their sales and marketing campaigns.
- LSS is undoubtedly digitizing some of the core intellectual content (like Novations' 360 degree training) of its co-founders.
- STAR is opening the government channel to its partners.

PROVANT is employing a "corporate" sales force that focuses on selling the PROVANT solution, not just an individual product or service. We believe the model will eventually come to dominate the sales model at PROVANT, particularly as the company moves forward with its branding strategy. Anecdotal evidence suggests that the focus on cross-selling is paying off, with many salesmen reporting positive reactions to PROVANT's ability to deliver a more complete portfolio of products.

External

Continue Acquisitions in a Highly Fragmented Industry

The training industry remains highly fragmented, dominated by "mom and pop" competitors. In addition, we believe the demographics of the training industry are conducive to more consolidation. Many of the leading entrepreneurs in training are in their 50s and are exploring exit and liquidity options. In some cases, the most attractive alternative is sale to a public company for either cash, stock or a combination.

A high degree of fragmentation and inconsistent delivery of products and services often characterize consolidating industries. While these factors create a conducive environment for a first-to-market consolidator, they also present significant challenges, in our view.

We believe PROVANT has the management strength and the operating platform to make consolidation work in this industry. Acquisition integration of the companies acquired since the IPO has gone smoothly, and many of the acquired companies are already working together to provide the type of one-stop-shop experience that, in our opinion, will characterize the industry landscape in decades to come.

The Acquisition Trail

PROVANT is comfortably ahead of our acquisition revenue assumptions. We estimate companies acquired since the IPO contributed $40-45 million to fiscal 1999 revenue, well ahead of our original assumption of $28-30 million from acquired companies.

ACQUIRED REVENUE ASSUMPTIONS
Fiscal Year-End June 30, 1999

	1Q99	2Q99E	3Q99E	4Q99E	FY99E
#1	1.20	2.00	2.00	2.00	7.2
#2	1.00	4.00	4.00	4.00	13.0
#3			2.50	2.50	5.0
#4				3.00	3.0
Total					28.2

ESTIMATED ACQUIRED REVENUES, FISCAL 1999
($ millions)

	Closing Date	LTM Revenues (1)	1Q99	2Q99E	3Q99E	4Q99E	FY99E (2)
KC Res.	7/21/98	6.0	1.0	1.67	1.67	2.1	6.4
Amer. Media	9/15/98	17.1	1.0	4.7	4.7	5.4	15.8
Strategic. Int.	10/27/98	4.7		.9	1.3	1.5	3.7
Gulliver Ritchie	11/16/98	4.7		.6	1.3	1.5	3.4
Executive Perspectives	12/1/98	5.4		.5	1.5	1.7	3.8
OCI	1/31/99	7.0			1.2	2.3	3.6
Educational Discoveries	2/16/99	6.4			1.0	2.3	3.3
Project Management.	4/27/99	14.0				2.7	2.7
Solution Selling	6/8/99	6.0				.5	.5
Sales Performance International	6/8/99	6.0				.5	.5
Total		65.3	2.0	8.34	12.75	20.4	43.6

(1) Estimated at closing.
(2) Estimated contribution to fiscal 1999 revenues based on actual closing date and published revenue information.

We believe the 8.0 million share increase from the fourth quarter of 1998 through the fourth quarter of 1999 is a combination of the following:

Secondary Offering	3,000,000
Stock Issued for Acquisitions (1)	2,814,000
Contingent Payouts	
Founding Companies (Q1)	900,000
Companies Acquired Since the IPO	1,300,000
Option Exercise	Negligible
Total	8,014,000

(1) American Media, KC Resources, Executive Perspectives, Gulliver Ritchie, Strategic Interactive, OCI, Educational Discoveries, PMS Inc.

While we estimate the average weighted shares outstanding at the end of the fiscal year will be 17.9 million, we believe the actual, ending share count will be slightly higher, at 18.2 million.

We believe the 2.6 million increase in the weighted average share count from 15.3 million at the third quarter of 1999 to 17.9 million at the fourth quarter of 1999 will be driven primarily by a combination of: 930,000 shares issued for the acquisition of PMS Inc., 300,000 shares issued as part of contingent considerations for past acquisitions, and the full quarter's impact from the secondary offering during the second quarter of 1999.

Acquisition Prices

Public documents indicate that PROVANT is likely paying 8-9x trailing EBITDA or 0.70-2.5x trailing revenue for the acquired companies. We believe the EBITDA multiples are probably more attractive for PROVANT than is apparent from the public filings because of adjustments to expenses—such as owner's compensation—that will be made prospectively. For example, Gulliver Ritchie (GR), a PROVANT acquisition, posted an EBITDA margin of 28.3% for the fiscal year ended June 30, 1998. If PROVANT could reduce operating expenses including salaries by $200,000-300,000 per year, we believe GR's EBITDA margin would be closer to 32-34%. This adjustment to EBITDA would, theoretically, reduce the acquisition multiple from the 7.5x trailing EBITDA as calculated using the published financial information for GR to approximately 6.5x trailing EBITDA.

Many of the owners of private, performance support companies are accustomed to reaping substantial annual cash income. As part of their agreement to join PROVANT, however, we believe most of these owners are willing to **sacrifice the cash cow on the altar of public currency**. Therefore, PROVANT's claims of paying 5-7x trailing EBITDA are more than likely accurate once the adjustments to cash (less owner's compensation) have been made.

We believe PROVANT's objective is to pay 35-40% in cash and 60-65% in stock. The trailing acquisitions, on average, have veered from that objective because of two acquisitions in which nonactive owners received heavier doses of cash in lieu of two-year restricted stock.

We believe all acquisitions have been at least $0.02 accretive. Nonetheless, the review of the public documents may pose some question as to whether that accretion would be compromised by apparently lucrative earn-outs. As the list below illustrates, several of PROVANT's acquisitions have substantial earn-out clauses payable over the next three years or less.

- Gulliver Ritchie—up to $15 million payable by June 30, 2001 based on EBITDA growth.
- PMS Inc.—up to $20 million payable by June 30, 2001 based on EBITDA growth.
- Contingent considerations payable for other acquisitions include $5.7 million in common stock (roughly 300,000-380,000 shares), payable for fiscal year ended June 30, 1999.

We believe the earn-outs are contingent on some rather hefty growth assumptions for EBITDA. And, even if the lofty goals are achieved, we are not concerned that the earn-outs will dilute whatever earnings accretion was achieved during the first year following the close of the acquisition.

Although we have no visibility into the explicit terms of the contracts, we believe the earn-outs paid in stock would be priced at EBITDA multiples (on the incremental EBITDA) below the EBITDA multiple at the time of acquisition, thereby heightening the overall accretion level of the acquisition.

Establishing a Brand and Building Brand Equity

Establishing a dominant brand can be an important driver for PROVANT in consolidating the training industry. Branding can be an effective strategy to create an industry-leading presence. A successful brand suggests consistent, superior service and a differentiable offering. A strong brand has the potential to establish and reinforce customer relationships, thereby creating an element of recurring revenue as well as more consistent and visible returns.

We believe as a publicly traded company, PROVANT enjoys an advantage over other industry players that are also trying to build a brand by being able to offer a more fungible acquisition currency and by

enjoying the implicit level of quality and management strength that come with being a successful public company.

PROVANT's total sales force is now up to 185 people from 150 several months ago. The company announced the formation of a PROVANT sales force, a small group of high level sales people, based at corporate headquarters, which will focus on selling the entire PROVANT branded package to existing and new clients. The corporate level sales force will benefit from a full product line and the company's focus on building the brand.

PROVANT will be hosting bimonthly seminars for human resources professionals starting in June. The seminars are geared toward showing the training gatekeepers all the products and services that PROVANT can offer with a unified and consistent look and feel.

An e-commerce initiative is part of this branding strategy, particularly as the strategy is focused on creating the "one-stop" concept in the minds of the human resources professionals and product buyers. As technology and time allow PROVANT to digitize more and more content, we believe the Web will provide a new and potentially very profitable distribution channel that would complement and expand the company's current direct marketing strategy.

The initiative will focus on businesses with fewer than 500 employees initially and will complement PROVANT's existing catalog/direct mail business by migrating those customers to a lower-cost purchasing method. We believe at some point the site could become ground zero for a fully interactive, multimedia-based training effort but bandwidth constraints will limit content for some time.

Income Statement Derivation

Revenue

PROVANT's companies generate revenue from five main areas:

- Instructor-led and train-the-trainer seminars—revenue is recognized on a participant basis when the training is delivered.
- License fees—the company recognizes license fees on a per-participant basis when a certified client trainer delivers PROVANT courses and materials to other employees of the client.
- Custom services and products—revenue is recognized on the percentage-of-completion method.
- Consulting services—PROVANT charges an hourly or per-diem rate, and revenue is recognized when the consulting is provided.
- Off-the-shelf products—revenues are recognized when the products are delivered.

Expenses

Cost of revenue primarily consists of:

- Salaries and benefits for instructors, consultants and course designers and costs of independent contractors.
- The cost of developing, designing and producing training courses and materials, including materials costs.

As a result, PROVANT's gross margins are affected by the number of instructors, consultants and course designers and the utilization of such employees during any given period.

Selling, general and administrative expenses consist primarily of:

- Salaries, benefits and bonuses for PROVANT's corporate sales, marketing and administrative personnel.
- Marketing and advertising expenses for PROVANT's services and products.
- Incentive and discretionary bonuses paid to executives and other key employees.

Margins

In many service businesses, significant operational and purchasing economies of scale can be achieved after a company reaches "critical mass." Increasing order sizes can translate into increased purchasing power as the company gains purchasing leverage on items such as advertisement, shipping, and insurance. As revenues grow, the ability to leverage relatively fixed cost structures can result in decreasing SG&A as a percentage of revenues.

However, at this time, we are not modeling much margin expansion. We believe much of the margin expansion will occur in later years, as the company achieves a greater mass and shifts the management focus from growing the top line to wringing savings out of the corporate network.

OPERATING INCOME AND MARGIN
($ millions)

	1Q98	2Q98	3Q98	4Q98	1Q99	2Q99	3Q99	4Q99
Operating Income	$2.12	$2.09	$2.90	$3.54	$3.0	$4.3	$5.6	$7.9
Operating Margin	12%	11%	15%	16%	12.5	13.4	15.5	16.8

Source: Company reports.

Management

We believe PROVANT's management is capable of recognizing and capitalizing on this changing market.

Paul M. Verrochi, chairman and chief executive officer, was president of PROVANT prior to its initial public offering. Mr. Verrochi is also chairman, co-founder and a principal of American Business Partners LLC ("ABP"). Verrochi co-founded American Medical Response, Inc., a consolidator in ambulance services. *Inc. Magazine* selected Verrochi as the 1995 National Entrepreneur of the Year for Emerging Growth Companies.

John H. Zenger, president and director, has been a consultant to the company since May 1997. Prior to joining PROVANT, Dr. Zenger was employed in various capacities, including vice president and chairman by the Times Mirror Training Group. Dr. Zenger received his Doctorate degree in Business Administration from the University of Southern California.

Rajiv Bhatt, senior vice president, treasurer and chief accounting officer, has been a consultant to PROVANT since August 1997. Prior to joining the company, Mr. Bhatt held the position of CFO at a variety of companies, including Summit Technology, Inc., Carlisle Plastics, Inc., and Carlisle Capital

Corporation. Mr. Bhatt, a Certified Public Accountant, received his Masters in Business Administration from the University of Michigan.

Phil Gardner has been vice president of PROVANT since May 1998. Prior to the IPO, from February 1997 until May 1998, Mr. Gardner was a consultant to PROVANT. From August 1994 to December 1996, Mr. Gardner was a consultant for McKinsey & Company, a management consulting firm. Prior to joining McKinsey, Mr. Gardner was an officer and a highly decorated strike fighter pilot in the United States Navy. Mr. Gardner received his Masters in Business Administration and Bachelor degrees from Harvard University.

Investment Risks

Among other risks that the company faces are uncertainty surrounding the integration of the acquired companies, lower-priced competition in a highly fragmented market, difficulty in attracting and retaining qualified instructors and the reliance on federal government contracting. Furthermore, it is unclear how an economic slowdown might affect the demand for the company's products.

Another risk is the possibility that no suitable acquisitions opportunities exist. Also, PROVANT may not be able to fully implement its growth strategy if it cannot secure additional financing in the future.

Valuation and Investment Conclusion

As the training and performance-improvement industry continues to grow, we believe companies of scale will find an easier road to long-term success than smaller players increasingly marginalized by corporate demands for a one-stop shop. The focus on the turn-key solution and single-vendor relationships places PROVANT squarely in the sweet spot of the industry. We like the long-term growth potential for PROVANT's business and believe the company can grow annual earnings in excess of 25% over the long term.

PROVANT has made 10 acquisitions since the IPO, adding run-rate revenues of more than $80 million. **PROVANT has acquired revenues equivalent to the original size of the seven founding companies.**

PROVANT's acquisitions have added expertise in content conversion (from traditional media to technology-driven delivery), mission-critical project management services, sales training and direct marketing, among others. Through its acquisitions, PROVANT has evolved into a one-stop shop for performance improvement services.

The singular point of contact should serve PROVANT well as the economy enters an era in which businesses attempt to downsize the number of vendors with which they interact. In addition, PROVANT is one of the very few performance-support companies with diverse content on a national scale.

If we were to find fault with management it would be the failure to articulate how healthy organic growth is for the combined (17) entities. We believe organic growth exceeds 20%. Management may soon release metrics (such as organic growth and expansion of cross-selling relationships) that could spark interest in the stock as well as allay concerns that PROVANT is nothing more than the pejorative roll-up.

In our view, enhanced visibility would help investors become more comfortable with the overall business model and its long-term prospects.

Banc of America Securities

PROVANT, Inc., based in Boston, Massachusetts, is the premier provider of total corporate education and training solutions to the Fortune 1000, other large companies and government entities. The company provides industry-leading expertise in the areas of employee selection and development, employee work skills, management and leadership, diversity awareness, communication and presentation skills, and organizational assessment, direction and change. PROVANT is the largest "pure play" in the estimated $85 billion corporate education and training market.

PROVANT, INC.

Quarterly Sales and Earnings Model
($ 000s)

	1Q99A	2Q99A	3Q99A	4Q99A	Jun-99 1999E	1Q00E	2Q00E	3Q00E	4Q00E	Jun-00 2000E	CY 1999E	CY 2000E
Revenues												
Core Companies (1)	$21,671	$23,394	$23,466	$26,591	$95,122	$24,922	$26,903	$26,986	$30,580	$109,390	$101,882	$117,164
F1999 Acquisitions	2,039	8,346	12,747	20,422	43,554	19,128	19,908	20,584	24,369	83,988	$72,205	$91,015
F2000 Acquisitions						1,250	1,250	2,000	2,000	6,500	$2,500	$10,275
Total Revenues	23,710	31,740	36,213	47,013	138,675	45,300	48,061	49,570	56,948	199,879	$176,587	$218,454
Cost of Sales	10,148	13,314	15,022	19,298	57,782	19,026	19,561	20,026	23,292	81,905	72,907	88,479
Gross Profit	13,562	18,426	21,191	27,715	80,893	26,274	28,500	29,544	33,656	117,974	103,680	129,975
SG&A Expenses	10,593	14,166	15,574	19,839	60,172	19,705	20,955	20,819	23,804	85,284	76,073	92,417
Operating Income before acquisition amort.	2,969	4,260	5,617	7,876	20,721	6,568	7,546	8,724	9,852	32,690	27,607	37,557
Goodwill amortization	380	593	699	950	2,622	1,000	1,000	1,050	1,200	4,250	3,649	4,500
Operating income after amort.	2,589	3,667	4,918	6,926 #	18,099	5,568	6,546	7,674	8,652	28,440	23,958	30,259
Net interest income (expense)	(3)	(205)	30	13	(165)	(25)	(25)	(38)	(63)	(151)	(7)	(227)
Pretax income	2,586	3,462	4,948	6,939	17,934	5,543	6,521	7,636	8,589	28,289	23,951	30,032
Tax provision	1,187	1,622	2,259	3,156	8,223	2,617	3,008	3,475	3,916	13,016	11,040	13,813
Net income	$1,399	$1,840	$2,689	$3,783	$9,712	$2,926	$3,512	$4,162	$4,673	$15,274	$12,911	$16,219
Net income	$1,399	$1,840	$2,689	$3,783	$9,712	$2,926	$3,512	$4,162	$4,673	$15,274	$12,911	$16,219
Shares outstanding	11,124	12,310	15,307	18,391	14,283	18,831	18,931	19,031	19,131	18,981	17,865	19,181
Fully-Diluted EPS	$0.13	$0.15	$0.18	$0.21	$0.66	$0.16	$0.19	$0.22	$0.24	$0.80	$0.72	$0.85
% of Revenues												
Founding Companies	91%	74%	65%	57%	69%	55%	56%	54%	54%	55%		
Fiscal 1999 Acquisitions	9%	26%	35%	43%	31%	42%	41%	42%	43%	42%		
Fiscal 2000 Acquisitions	0%	0%	0%	0%	0%	3%	3%	4%	4%	3%		
Margins												
Total gross profit	57.2%	58.1%	58.5%	59.0%	58.3%	58.0%	59.3%	59.6%	59.1%	59.0%	58.7%	59.5%
SG&A Expenses	44.7%	44.6%	43.0%	42.2%	43.4%	43.5%	43.6%	42.0%	41.8%	42.7%	43.1%	42.3%
Operating income before acquisition amort.	12.5%	13.4%	15.5%	16.8%	14.9%	14.5%	15.7%	17.6%	17.3%	16.4%	15.6%	17.2%
Acquisition Amortization	1.6%	1.9%	1.9%	2.0%	1.9%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
Unit Operating Expenses	44.7%	42.0%	41.5%	38.5%	43.4%	41.4%	40.4%	39.0%	38.0%	42.7%	43.9%	43.1%
Corporate O/H		2.5%	2.5%	2.5%	0.0%	2.5%	2.5%	2.5%	2.5%	0.0%	0.0%	1.3%
Operating income after acquisition amort.	10.9%	11.6%	13.6%	14.7%	13.1%	12.3%	13.6%	13.5%	15.2%	14.2%	13.6%	13.9%
Pretax income	10.9%	10.9%	13.7%	14.8%	12.9%	12.2%	13.6%	15.4%	15.1%	14.2%	13.6%	13.7%
Net Margin	5.9%	5.8%	7.4%	8.0%	7.0%	6.5%	7.3%	8.4%	8.2%	7.6%	7.3%	7.4%
Growth Rates												
Core Companies (1)	22.2%	28.4%	17.7%	20.0%	21.9%	15.0%	15.0%	15.0%	15.0%	15.0%	16.9%	15.0%
Total revenues	33.7%	74.2%	81.6%	112.2%	77.6%	91.1%	51.4%	36.9%	21.1%	44.1%	81.0%	23.7%
Total gross profit	40.1%	78.4%	84.8%	113.1%	81.8%	93.7%	54.7%	39.4%	21.4%	45.8%	83.6%	25.4%
Operating income before acquisition amort.	39.8%	103.9%	93.6%	122.6%	94.5%	121.2%	77.1%	55.3%	25.1%	57.8%	102.0%	36.0%
Operating income after acquisition amort.	44.6%	108.9%	91.6%	116.1%	94.3%	115.1%	78.5%	56.0%	24.9%	57.1%	99.2%	26.3%
Pretax income	44.7%	97.0%	92.5%	116.3%	92.4%	114.4%	88.4%	54.3%	23.8%	57.7%	102.5%	25.4%
Net income	49.0%	99.8%	91.0%	111.0%	91.9%	109.2%	90.9%	54.8%	23.5%	57.3%	100.5%	25.6%
Fully-Diluted EPS	36.2%	65.1%	26.9%	16.7%	32.0%	23.6%	24.1%	24.5%	18.7%	22.4%	22.8%	17.0%

(1) Core represents pre-1999 PROVANT partners

Source: Company reports and Banc of America Securities LLC estimates.

PROVANT, INC.
Balance Sheet
($ millions)

FY JUNE	June 1997	June 1998	June 1999
Current Assets:			
Cash and equivalents:	1.00	6.39	2.22
Accounts Recievable, net	0.00	12.20	34.56
Inventory	0.00	0.18	4.47
Deferred Taxes		0.70	2.79
Costs in excess of billings		1.36	
Prepaid expenses and Other current assets	0.00	1.18	6.85
Total current assets	1.00	30.09	50.89
Property and equipment, net	0.15	2.55	7.24
Other assets	0.00	0.78	3.03
Goodwill, net	0.00	52.94	223.48
Total non-current assets	0.15	56.27	233.75
TOTAL ASSETS	1.15	86.36	284.64
Current liabilities:			
Accounts Payable	0.00	3.35	
Accrued expenses	0.00	7.36	
Accrued Compensation	0.00	2.93	
Billings in excess of costs	0.00	2.90	
Deferred Revenue	0.00	0.67	
Income taxes payable	0.00	1.25	
Notes Payable to Stockholders	0.30	0.00	
Current portion of Long-Term debt	0.00	0.53	
Other current liabilities	0.00	0.00	
Total current liabilities	0.30	18.99	38.33
Long-Term Debt, net of current portion	0.00	0.87	
Cash Contingent Considerations Payable			32.86
Stock Contingent Considerations Payable			18.88
Other LTL			9.24
TOTAL LIABILITIES	0.30	19.86	60.99
Shareholders' equity			
Perfered stock (none issued)	0.00	0.00	
Common stock	0.02	0.10	
Additional paid-in capital	0.00	69.47	
Translation adjustment	0.00	(0.01)	
Accumulated Deficit	(0.17)	(3.06)	
Total shareholders' equity	(0.15)	66.50	185.33
TOTAL LIABILITIES AND S. EQUITY	0.15	86.36	284.64

Source: Company reports.

PROVANT, INC.
Cash Flow Statement
($ millions)

FY JUNE	June 1997	June 1998	9 mo ended 3/99
Cash Flows from Operating Activities			
Net Income	(149.00)	$ (2,894)	5.93
Adjustments to Reconcile Net Loss to Net Cash Used in Operating Activities			
Depreciation and Amortization		467	2.89
Allowance for Doubtful Accounts		135	(0.04)
Charges related to issuance of common stock, warrants and stock options		908	
Accounts Receivable		(1731)	2.62
Inventory			(0.74)
Contracts Receivable		(581)	
Deferred Taxes		(1191)	(1.53)
Due from Stockholders		600	
Cost is excess of billings		(244)	(0.16)
Prepaid Expenses		(154)	(1.62)
Other Assets		110	(0.25)
Accounts Payable and Accrued Expenses		1636	(2.13)
Accrued Compensation		(91)	1.14
Billings in excess of Costs		1119	0.02
Deferred Revenue		228	0.96
Income Taxes Payable		970	(2.70)
Total Adjustments		2181	(5.74)
Net Cash Used from Operating Activities	(149.00)	(713)	0.19
Cash Flows from Investing Activities			
Acquisitions of businesses, net of acquired cash		(19302)	(30.54)
Additions to property & equipment	(150.00)	(177)	(1.37)
Other			0.21
Net Cash used in Investing Activities	(150.00)	(19479)	(31.70)
Cash Flows from Financing Activities			
Issuance of Common Stock	2.00	32667	54.83
Increase (decrease) in notes payable to stockholders	298.00	(298)	26.20
Repayment of Long-term debt		(5772)	(27.75)
Net Cash used by financing activiteis	300.00	26597	53.29
Effects of exchange rates on cash		(12)	
Net Decrease in cash and equivalents			21.78
Net Increase in cash & equivalents	1.00	6393	
Cash & equivalents, beginning of period	0.00	1	6.39
Cash & equivalents, end of period	1.00	$ 6,394	28.17

Source: Company reports.

RWD TECHNOLOGIES, INC.

MARKET PERFORMER

NASDAQ: RWDT

PRICE:	$9.50
12-MONTH TARGET PRICE:	$10
52-WEEK RANGE:	$24-9
FULLY DILUTED SHARES O/S:	16.0 MM
MARKET CAPITALIZATION:	$152.0 MM
AVG. DAILY VOL. (3 MOS.):	84,568
SECULAR EPS GROWTH:	30%
FY 1999E REVENUES:	$132.9 MM
MARKET CAP./REVENUES:	114%
12/97 TOTAL DEBT:	NONE
12/97 LTD/TOTAL CAP.:	NONE
12/97 ROAE:	21.0%
12/97 SHAREHOLDERS' EQ.:	$77.0 MM
12/97 BOOK VALUE/SHARE:	$4.78
DIVIDEND/YIELD:	NONE

FYE 12/31	1998E	1999E	2000E
EPS			
Q1(MAR)	$0.19	$0.24	$0.17
Q2(JUN)	0.20	0.14	0.20
Q3(SEP)	0.22	0.13	0.26
Q4(DEC)	0.22	0.14	0.27
FISCAL YR	$0.82	$0.65	$0.90
P/E	11.6	14.6	10.6
P/E/G	39%	49%	35%

- RWD Technologies, Inc.,—through its training and support—shrinks the skill gap by empowering workers and simplifying tools.
- RWD is led by a technically skilled management team with significant experience in the engineering, technology and design fields.
- We believe RWD's customer-centric approach to mission-critical performance improvement and its impressive depth of human capital create significant competitive advantages for the company.
- RWD counts some of the world's best companies among its blue-chip customer list.
- We gain confidence in our estimates from RWD's high customer retention rates, same-customer contract value growth and continued strength in new-customer additions..
- RWD's motto sits at the core of our investment thesis for the workplace learning Industry: **Bringing People and Technology Together.**

Company Description and Investment Thesis

We believe many companies make substantial investments in automation and other advanced operating systems without any assurance of improving their operating performance. Established in 1988, RWD offers customized services designed to make companies and individuals more productive, efficient and competitive.

RWD provides performance support services, such as training and documentation to plant personnel in industrial companies that employ complex manufacturing systems and technologies. The company also provides customized IT solutions, including enhanced user interface (EUI) systems, electronic performance support systems (EPSS), electronic document management systems (EDMS) and sales force automation.

RWD employs approximately 1,100 people in 14 offices worldwide. The primary vertical markets served by RWD include automotive, chemical, financial, petroleum, pharmaceutical and telecommunications. The company's four key lines of business (Performance Support, Lean Manufacturing Training, Enterprise Software Training, IT Solutions) are complementary, yet distinct lines of business geared toward helping companies operate more productively and, ultimately, more profitably. It is this laser-like focus on the client's bottom line that, in our view, strengthens RWD's relationships with its clients and, at the same time, insulates the company from economic vicissitudes.

We believe in companies that actually offer a service—or in some cases a product—not available from competitors, that can establish real customer loyalty and enhance recurring revenue levels. In addition, we believe successful businesses are those that employ **customer-centric thinking** to identify customer priorities and construct business designs to match them. Other vendors, particularly those in the training space, offer training that is not built to suit the needs of a client's workforce as much as it is built to offer mass market appeal. RWD provides its clients with a broad range of performance-centric solutions designed to improve the productivity and effectiveness of workers in complex operating environments.

The success of RWD's approach is manifested in the long-term, deeply embedded, multidimensional relationships that it has with blue-chip customers such as Chrysler, Ford and Deere. **The company's success is reflected in the statistic that more than 80% of fiscal 1998 revenues were generated by existing customers—a compelling level of recurring revenue.**

We believe vendors or consultancies that focus on mission-critical functions will enjoy strong, consistent growth because their businesses are less vulnerable to economic cycles or corporate budget cuts than some other training functions. Mission-critical areas, such as: (1) training on a new metal stamper for Chrysler; (2) end-user support for the latest SAP inventory management software; or (3) lean manufacturing consulting that helps corporations eliminate waste, are worker support functions that corporations cannot do without. The financial costs for poor performance in these functional areas are quantifiable, making it simple for line mangers to justify the expenditures.

The value-added proposition offered by RWD Technologies to its clients is what, in our view, cements the relationship. Evidence supporting our thesis of client loyalty is easily identified: RWD enjoys customer retention rates above 80%, generally booking 30% more new business from existing customers each year.

The RWD Solution

RWD Technologies is focused on improving human performance so that every solution RWD develops begins with an understanding of the tools, knowledge and information needs of the people who perform the work. **RWD, through its training and support, shrinks the skills gap by empowering the workers and simplifying the tools.** RWD includes the client during the construction of the training content or the learning modules: RWD begins with the people, identifies the performance target and decides how best to get there. This provides an "internal" perspective and promotes ownership and acceptance of the process and tools.

Client services are process-driven. Each project is run by project managers who are trained, including oral boards and more than 250 hours of training. Disciplined project management includes focusing on cost control, quality control, and client satisfaction. RWD's focus on process is a result of the process-oriented background of its employees, many of whom have military backgrounds:

- COO John Beakes was a navy nuclear officer.
- There are 65 navy nuclear officers on staff.
- Ten percent of people were formerly with the navy or military, which suggests that they are used to adhering tightly to systems.

Performance Support

RWD provides performance support services primarily to plant personnel in large industrial companies relying on new manufacturing systems and technologies. Performance support may include, for example, training factory floor workers how to work with new, complex machines by providing instruction-led training, web-based information systems, documentation and more.

The Performance Support division utilizes RWD's **Performance Vision**—a process that evaluates performance requirements and then specifically ties the job and task analysis to the overall business process. What information do people need? RWD integrates those answers with the hard systems analysis (the design, the engineering). For example, **electronic document management systems** are designed to give the end user easy access to information critical to operating productively within increasingly complex systems.

Consider the plight of a factory floor manager at a small or medium-sized company who is charged with modernizing the floor with new tools and technology. After the purchase and installation of equipment—particularly computerized equipment—customers need ongoing, value-added customer service and technical support. RWD will design and implement an employee performance support system (EPSS) to enable a manufacturer to transfer expert-level knowledge from its experienced operators to its newer workers.

The EPSS should reduce plant downtime and improve product quality by providing job-related practical knowledge and structured training information to all operators. The just-in-time information system includes operating procedures, equipment information, problem-solving guidance and training. IT uses text, photos, graphics, animation and video to explain concepts and provide information.

This business line often relies on the company's trademark system InfoVision: a structured repeatable process to plan, analyze, design, prototype, develop and deliver training and documentation.

Lean Manufacturing

Lean manufacturing consulting **is based on the perpetual goal to eliminate waste and improve performance.** In addition to inventory control, the next step in lean training is production scheduling—tweaking the factories to perform within pre-established cost controls using techniques, such as mistake-proofing, equipment reliability systems, just-in-time material control and more.

RWD is one of few companies that deliver lean training and we believe this area represents a substantial growth opportunity for the company. RWD's largest lean client—Ford—is in the midst of a worldwide implementation of lean manufacturing. We believe automobile manufacturers and other inventory-intensive businesses will slowly adopt lean methodologies as they try to operate more efficiently.

ERP End-User Training

The Enterprise Resource Planning (ERP) division advanced information technology solutions that enable businesses to redesign their business processes in areas including product development, service, manufacturing, human resources, finance and accounting.

ERP end users frequently encounter situations in which they require assistance. In order to limit workers' downtime and provide workers with easy access to assistance, RWD will customize paper-based and online references containing relevant policies, processes and procedures.

IT Services

RWD's most sophisticated performance support solution is an electronic performance support system ("EPSS") that provides comprehensive end-user support on demand at the desktop so that end users can minimize interruptions in seeking help or information relating to a job task. End users can access the EPSS from their own desktop and find the answers to the questions they have about a particular task.

An example of IT services is a customer-service system that RWD built for a telecom company's call center which used to suffer high turnover from its low-wage workers who manned the call center. RWD built a new graphical user interface that simplified the work of the call center employees. The newly designed GUI is more intuitive, has sped up training and has reduced turnover.

Technology-Mediated Training

RWD recently purchased Merrimac Interactive Media, a provider of customized Internet-based training and certification programs for high-tech companies. We believe the acquisition provides an important piece for RWD's total solution. Merrimac will allow RWD to offer its customers the ability to train their employees via the Internet, reducing downtime, travel costs and training costs associated with ILT modalities. And, importantly, Merrimac will design certification programs around this training, offering clients a way to measure, assess and monitor their employees skills.

Growth Strategies

We believe the company can fuel revenue and earnings growth in excess of 30% for the next three to five years.

Same-Customer Growth

RWD's business grows, in great part, by lengthening and expanding relationships with existing customers. There are multiple examples of clients with whom RWD has become an embedded performance-support partner as evidenced by several years of recurring business. Heavyweight clients such as Ford, Chrysler, Deere and GM have been RWD clients for up to 10 years—a testament to the value that RWD solutions bring to the table. Furthermore, we believe roughly 90% of 1997 revenues and 80% of 1998 revenues were generated by existing customers—a strong level of recurring revenue that again speaks to the quality of the RWD solution.

New Contracts With New Customers

Irrespective of RWD's primary reliance on existing customers for revenue generation (more than 80%) we project RWD to add 50 new clients in 1999—following 57 new clients in 1998. We expect fewer new clients in 1999 than in 1998 because RWD's ERP business attracted many of these new clients and we do not expect to see the same growth from this sector in 1999.

New clients are the result of referrals, conferences, trade shows, networking and relationships with partners such as SAP. RWD is one of a select few SAP InfoDB Lab partners. The "Lab" provides RWD with the forum in which to invite SAP clients who wish to work with the training module of the SAP enterprise application. This association as one of SAP's trusted partners, in our view, serves as a source of business for RWD.

Other partners include PriceWaterhouseCoopers which refers ERP end-user support business, Lotus, Netscape , Microsoft, Siebel, POINT, Dataware, DLB, Baan, PeopleSoft and Asymetrix.

Develop Industry Specialties (ICOE)

One shortcoming of RWD, in our view, is its failure to build an aggressive salesforce. We believe the company's growth would accelerate if it employed a sales force. Nonetheless, the company has successfully implemented a new business development initiative with its Industry Center of Excellence (ICOE) program.

ICOEs build an industry group around the skills, reputation and contacts of a successful industry veteran. A prime example is the Automobile ICOE, headed by Bob O'Connell, former GM CFO and now senior vice president of strategic business planning for RWD. By leveraging Mr. O'Connell's reputation in the industry, contacts at GM and with GM suppliers and RWD's experiences with Chrysler and Ford, we expect RWD to further penetrate the auto industry, including suppliers to the Big Three manufacturers, dealer networks and transportation companies focused on the industry.

Acquisitions

The training market is characterized by significant fragmentation, the lack of dominant players and the prevalence of regional or local vendors that lack the financial resources or even the inclination to market or advertise. We believe this atmosphere makes acquisitions very attractive, and that RWD, with

the scale and financial resources of a public entity, is well positioned to capitalize on the acquisition opportunities we believe exist.

Income Statement Derivation

Client services are process-driven. Each project is run by project managers who are extensively trained, including oral boards and more than 250 hours of training. Disciplined project management includes focusing on cost control, quality control and client satisfaction.

We remain particularly impressed by the diligence with which the company's project managers, engineers and consultants manage the multiple contracts and projects. It is this diligence, in our view, which increases the level of visibility in the revenue and expenses for the next two to three quarters.

The company manages the parameters by establishing and monitoring project budgets and timetables and by closely tracking staffing requirements for projects in progress. The status of all projects in progress and personnel utilization are reviewed twice per month by project managers and senior consultants.

The key metric for understanding the business is the utilization of RWD professionals. Approximately 80% (800 of 1000) of the company's head count at fiscal year-end 1998 was billable.

The fully loaded number for RWD billable professionals is 40 hours per week. The target utilization is 70–75%—utilization in excess of 90% is not possible because of vacations. Therefore, 30 billable hours per week is a reasonable estimate.

Gross margins reveal utilization and cost per hour of the labor/consultants. Therefore, gross profit margins per project and professional staff utilization rates are critical to RWD's financial performance. The company manages the parameters by establishing and monitoring project budgets and timetables and by closely tracking staffing requirements for projects in progress. The status of all projects in progress and personnel utilization are reviewed twice per month.

Billable rates vary depending on the scarcity and quality of the intellectual capital employed:

- **IT services professionals** are billed out at approximately $1000 per day (ranging from $800–1500).
- **Performance support professionals** are billed out at approximately $650 per day (ranging from $500–1,000).
- **ERP end user professionals** are billed out at approximately $800 per day.
- **Lean manufacturing professionals** are billed out at approximately $1,200 per day, yet they could go as high as $2,500 per day, although because of their high cost to the company deliver no higher profitability as a percentage of billing rates.

Therefore, assuming an average billable rate of $100 per hour over 800 billable heads for 30 hours per week and 50 weeks per year, we arrive at $120 million in revenue, which is very close to fiscal 1998 revenue of $115 million.

These facts enable us—using a back-of-the-envelope approach—to roughly support our 1999 and 2000 revenue estimates.

DERIVING 1999 AND 2000 REVENUES

	1999	2000
Head count	1,250	1,500
Billable heads = 80%	1,000	1,200
Avg. billing rate = $100 per hour	$100,000	$120,000
Weeks per year	48	48
Hours per week (Avg. utilization rate = 70-75%)	30	30
Annual revenue	$133 million	$157 million
Growth (Yr/Yr)	16%	38%

Source: Company reports and Banc of America Securities LLC estimates.

We believe the company is on plan to reach more than 1,250 bodies by the end of 1999. Turnover remains at less than 20% per year, which means to reach 1,250 people by year-end 1999, the company will likely need to hire 450 people (1000 less 200 losses plus 450 new hires).

To facilitate the growth, RWD has expanded its recruiting staff from five to 15. Growth can be constrained if the company is unable to hire talented individuals. Right now, we believe the most difficult area for growth is lean manufacturing because there are so few individuals with the appropriate skill set.

Based on 1998 revenues for each business unit, and assuming 70-75% utilization, we believe the following professionals generate, on average the corresponding amount of revenue:

IT Services Professionals	$195,000 revenue per year, per professional
Performance Support Professionals	$127,000
ERP Professionals	$156,000
Lean Manufacturing	$237,000

We believe RWD's internal revenue budgets are generated by a combination of "Booked" and "To be contracted" revenues. Booked revenues are, we believe, revenues for which the company has either a signed purchase order, a letter of intent or a verbal commitment from an existing customer.

We believe management's definition of "booked" is quite stringent, and few if any "booked" contracts have fallen through in the past, although contracts at times can be deferred into future quarters and still be considered "booked." We believe the company's systems in monitoring business (booked, to be contracted, identified by client, etc.) are strong and increase our confidence with estimates.

To-be-contracted revenues are less certain—more in the prospecting phase than in late-stage discussions. These amounts are, in general, viewed more on a service area by service area basis than ascribed to actual clients. The company, we believe, assigns a conservatively low probability of success to these types of potential revenues.

We believe 75-85% of a succeeding quarter's revenues are already "booked" when the quarter begins. As would be expected, this percentage drops to 40-60% looking two quarters out, and beyond that we believe visibility drops off markedly.

Approximately 85% of contracts are based on time and materials while the remainder—almost all of which are in the IT services division—are fixed-price contracts. Some of RWD's time and materials contracts contain "not to exceed" clauses, but we believe the company does not incur more than $25,000-50,000 in total cost overruns that are not reimbursed by the customer. Holidays and vacations manifest

in seasonal utilization rates where the first (March) and second (June) quarter's utilization rates tends to exceed the utilization rates in the third (September) and fourth (December) quarters.

Investment Considerations

Among the items investors should consider when examining RWD are the following:

- The agreements with SAP and PriceWaterhouseCoopers. A significant amount of RWD's ERP business is generated through these nonbinding partnerships. If one or both of these agreements were terminated, it could have an adverse impact on RWD's revenues and profitability.
- Employee recruitment and retention. The domestic labor market for technically skilled workers is very strong, which could make recruiting and retaining employees more difficult. Consultant utilization and knowledge are key to RWD's success, and high turnover would affect RWD's ability to fully service existing customers and to generate new business.
- Geographic expansion. The company continues to develop overseas markets in anticipation of generating sufficient revenues to make the division profitable. If these initiatives do not pan out, RWD's profitability would most likely be adversely affected.
- Fluctuations in revenues and operating results attributable to the timing, number and scope of customer engagements.

In addition, we believe investors have also been concerned in the past with RWD's revenue concentration, particularly because Chrysler, the automotive industry and RWD's top 10 clients make up a significant percentage of revenues.

While we acknowledge the issues that can arise from unhealthy revenue concentration, the downward trends for all of these components should provide investors with a measure of reassurance: We expect Chrysler to account for 15% of revenues in 2000, down from 22% in 1998, for the automotive industry to account for 30% in 2000, down from 38% in 1998, and for RWD's top 10 clients to account for 54% of 2000 revenues, down from 62% in 1998.

While we do acknowledge revenue concentration as a consideration when the customer relationships are newly formed, we believe some degree of concentration can be beneficial. High-quality customers and relationships that have been built over many years of interaction are a testament to both the providers' quality and the critical nature of the services provided. For instance, RWD's 10-year relationship with Chrysler has been consistently increased because, in our view, RWD provides a quality product that adds value to the company.

For example, even with a single client (Chrysler), RWD provides diverse, long-term services.

CHRYSLER SERVICES/CONTRACTS

Training Line	Year of Launch
Plant Floor Training	1990
Supplier Training	1990
Material Handling Training	1990
Electronics Manufacturing Training	1991
Failure Mode Effects Analysis	1993
Process Engineering Training	1994
MDSII—Custom Software Development	1995
Lean Manufacturing Consulting	1995
Jeep Truck Engineering Training	1995
Manufacturing System IS Training	1996
Chrysler Development System	1998

Source: Company reports.

Conclusion

We believe most buyers of training and customized workplace solutions are demanding results ("real business value") from the investment: higher revenue or lower costs.

We believe RWD has a unique approach that should serve an increasing demand for value-based buying. Every solution RWD develops begins with an understanding of the tools, knowledge and information needs of the people who perform the work. During every step of the construction of a solution, for example, the client end users are involved. This provides an "internal" perspective and promotes ownership and acceptance of the training and tools by the client.

In other words, RWD begins with the people, identifies the performance target from that perspective, and decides how best to get there. This "buy-in" by the client is critical because it increases the likelihood that the "change agents" have ownership in the solution (product or service), thereby heightening the likelihood of successful implementation and, in turn, ensuring the value sought by the customer.

We currently rate RWD shares Market Performer because of severely diminished visibility into the business for fiscal 1999-2000. The disappointing prerelease for the second quarter of 1999 suggested that RWD is much more vulnerable to software cycles (ERP and more) than had been originally believed.

We believe the quarter's revenue and earnings shortfall was caused by customers deferring ERP-related contracts. Visibility is much more limited than earlier perception. We would likely revisit our rating should we acquire some visibility into either rejuvenation in the ERP-support business or strong acceleration into other performance-support areas, such as lean manufacturing.

The second quarter of 1999 was the first earnings disappointment in the company's history as a public equity. Our respect for the company's intellectual capital as well as the operating systems and project management methodology will serve as primary reasons for maintaining interest in the stock. We would likely revisit our rating should we acquire some visibility into either rejuvenation in the ERP-support business or strong acceleration into other performance-support areas, such as lean manufacturing.

Banc of America Securities

Established in 1988, RWD Technologies is a leading provider of mission-critical performance improvement services to corporations around the world. Staffed by more than 800 experienced technical managers and consultants, RWD provides products and services through four distinct business units: Performance Improvement, IT Services, Enterprise Resource Planning and Lean Manufacturing.

RWD TECHNOLOGIES, INC.

Quarterly Sales and Earnings Model
($ millions)

FY December	Q1	Q2	Q3	Q4	1998	Q1	Q2	Q3E	Q4E	1999E	Q1E	Q2E	Q3E	Q4E	2000E
REVENUE															
Performance Support	8.12	7.79	7.90	7.43	31.23	8.16	7.95	8.06	8.10	32.26	8.64	8.98	9.11	9.15	35.88
IT Services	6.24	6.55	7.09	7.18	27.06	8.17	9.21	9.01	9.51	35.90	10.21	11.42	11.80	12.46	45.89
Enterprise software implementation	7.28	8.69	10.79	11.67	38.43	12.11	9.77	9.50	9.57	40.95	10.29	11.24	11.21	11.58	44.32
Lean Manufacturing	4.56	4.39	4.37	4.67	17.99	4.81	5.51	6.89	6.98	24.19	7.12	7.33	8.61	8.73	31.78
Total Revenue	26.20	27.41	30.15	30.95	**114.71**	**33.24**	**32.44**	**33.45**	**34.16**	**133.29**	**36.27**	**38.97**	**40.72**	**41.92**	**157.87**
Cost of Services	18.41	19.25	20.95	22.15	80.76	23.59	24.83	25.82	26.34	100.59	27.38	28.88	29.06	29.83	115.14
Gross profit	7.79	8.16	9.20	8.80	33.95	9.65	7.61	7.63	7.82	32.71	8.89	10.09	11.66	12.09	42.73
General and administrative	3.45	3.50	3.80	3.72	14.47	4.02	4.31	4.62	4.61	17.56	4.73	5.12	5.31	5.43	20.60
Operating Income	4.34	4.66	5.40	5.08	19.48	5.63	3.30	3.01	3.21	15.15	4.15	4.97	6.35	6.66	22.13
Other income (expense), net	0.44	0.45	0.29	0.58	1.77	0.46	0.40	0.10	0.10	1.05	0.10	0.12	0.14	0.16	0.50
Income before income taxes	4.78	5.11	5.69	5.66	21.24	6.09	3.70	3.11	3.31	16.19	4.25	5.08	6.48	6.82	22.63
Provision for income taxes	1.82	1.94	2.19	2.18	8.13	2.28	1.38	1.16	1.24	6.07	1.61	1.93	2.46	2.59	8.60
Net Income	2.96	3.17	3.50	3.48	13.11	3.80	2.31	1.94	2.07	10.12	2.63	3.15	4.02	4.23	14.03
EPS	**0.19**	**0.20**	**0.22**	**0.22**	**0.82**	**0.24**	**0.15**	**0.13**	**0.14**	**0.65**	**0.17**	**0.20**	**0.26**	**0.27**	**0.90**
Weighted avg shares out	15.95	16.09	16.01	16.02	16.02	15.92	15.78	15.20	15.30	15.55	15.40	15.55	15.70	15.85	15.63
Revenue Mix															
Performance Support	31.0%	28.4%	26.2%	24.0%	**27.2%**	24.5%	24.5%	24.1%	23.7%	**24.2%**	23.8%	23.1%	22.4%	21.8%	**22.7%**
IT Services	23.8%	23.9%	23.5%	23.2%	**23.6%**	24.6%	28.4%	26.9%	27.9%	**26.9%**	28.1%	29.3%	29.0%	29.7%	**29.1%**
Enterprise software implementation	27.8%	31.7%	35.8%	37.7%	**33.5%**	36.4%	30.1%	28.4%	28.0%	**30.7%**	28.4%	28.8%	27.5%	27.6%	**28.1%**
Lean Manufacturing	17.4%	16.0%	14.5%	15.1%	**15.7%**	14.5%	17.0%	20.6%	20.4%	**18.1%**	19.6%	18.8%	21.1%	20.8%	**20.1%**
Margin Analysis															
Gross margin	29.7%	29.8%	30.5%	28.4%	29.6%	29.0%	23.5%	22.8%	22.9%	24.5%	24.5%	25.9%	28.6%	28.8%	27.1%
G&A Margin	13.2%	12.8%	12.6%	12.0%	12.6%	12.1%	13.3%	13.8%	13.5%	13.2%	13.1%	13.2%	13.1%	13.0%	13.0%
Operating Margin	16.6%	17.0%	17.9%	16.4%	17.0%	16.9%	10.2%	9.0%	9.4%	**11.4%**	11.5%	12.8%	15.6%	15.9%	**14.0%**
Income before Income taxes	18.3%	18.7%	18.9%	18.3%	18.5%	18.3%	11.4%	9.3%	9.7%	12.1%	11.7%	13.0%	15.9%	16.3%	14.3%
Tax rate	38.0%	38.0%	39.0%	38.5%	38.3%	37.5%	37.4%	37.5%	37.5%	37.5%	38.0%	38.0%	38.0%	38.0%	38.0%
Net Margin	11.3%	11.6%	11.6%	11.2%	11.4%	11.4%	7.1%	5.8%	6.0%	7.6%	7.3%	8.1%	9.9%	10.1%	8.9%
Year/Year % Growth															
Performance Support Revenues	*6.0%*	*-0.8%*	*-5.6%*	*-6.5%*	***-1.8%***	*0.4%*	*2.1%*	*2.0%*	*9.0%*	***3.3%***	*6.0%*	*13.0%*	*13.0%*	*13.0%*	***11.2%***
IT Services Revenues	*23.8%*	*17.2%*	*26.2%*	*17.2%*	***20.9%***	*30.9%*	*40.6%*	*27.1%*	*32.5%*	***32.7%***	*25.0%*	*24.0%*	*31.0%*	*31.0%*	***27.8%***
Enterprise software implementation Revenu	*98.5%*	*106.7%*	*148.9%*	*107.3%*	***115.5%***	*66.3%*	*12.5%*	*-12.0%*	*-18.0%*	***6.5%***	*-15.0%*	*15.0%*	*18.0%*	*21.0%*	***8.2%***
Lean Manufacturing	65.8%	43.1%	17.5%	12.6%	**31.5%**	5.5%	25.6%	57.5%	49.4%	**34.5%**	48.0%	33.0%	25.0%	25.0%	**31.4%**
Total Revenues	37.2%	32.4%	37.0%	29.8%	33.9%	26.9%	18.3%	10.9%	10.4%	16.2%	9.1%	20.1%	21.7%	22.7%	18.4%
Cost of Services	37.3%	34.9%	32.9%	27.8%	32.9%	28.1%	29.0%	23.2%	18.9%	24.5%	16.1%	16.3%	12.5%	13.3%	14.5%
Gross Profit	37.0%	26.9%	47.2%	35.0%	36.4%	23.9%	-6.8%	-17.1%	-11.1%	-3.7%	-7.9%	32.7%	52.9%	54.5%	30.6%
General & Administrative	28.3%	25.9%	38.9%	26.8%	29.9%	16.8%	23.1%	21.3%	23.9%	21.3%	17.6%	18.9%	15.1%	17.7%	17.3%
Operating Income	44.7%	27.7%	53.7%	41.8%	41.7%	29.5%	-29.2%	-44.2%	-36.8%	-22.2%	-26.2%	50.6%	110.9%	107.4%	46.1%
Income Before Taxes	58.2%	40.9%	42.5%	38.7%	44.3%	27.2%	-27.7%	-45.4%	-41.6%	-23.8%	-30.2%	37.5%	108.8%	106.2%	39.8%
Net Income	63.3%	45.5%	41.1%	37.6%	45.7%	28.3%	-27.1%	-44.5%	-40.6%	-22.8%	-30.8%	36.3%	107.1%	104.5%	38.6%
EPS	32.8%	21.0%	38.7%	35.8%	31.6%	28.6%	-25.6%	-41.6%	-37.8%	-20.8%	-28.4%	38.4%	100.5%	97.4%	38.3%
Sequential % Growth															
Performance Support Revenues	2.2%	-4.1%	1.5%	-6.0%		9.8%	-2.5%	1.4%	0.5%		6.8%	3.9%	1.4%	0.5%	
IT Services Revenues	1.8%	5.0%	8.1%	1.3%		13.7%	12.8%	-2.2%	5.6%		7.3%	11.9%	3.3%	5.6%	
Enterprise software implementation Revenu	29.3%	19.4%	24.2%	8.1%		3.8%	-19.3%	-2.8%	0.7%		7.6%	9.2%	-0.3%	3.3%	
Lean Manufacturing Revenues	9.9%	-3.8%	-0.3%	6.9%		3.0%	14.5%	25.0%	1.4%		2.0%	2.9%	17.5%	1.4%	
Total Revenues	9.9%	4.6%	10.0%	2.6%		7.4%	-2.4%	3.1%	2.1%		6.2%	7.5%	4.5%	2.9%	
Operating Income	21.3%	7.3%	15.7%	-5.9%		10.8%	-41.4%	-8.8%	6.7%		29.3%	19.7%	27.8%	4.9%	

Source: Company reports and Banc of America Securities LLC estimates.

RWD TECHNOLOGIES, INC.
Balance Sheet
($ millions)

Year Ended December 31	1997	1998	June 30, 1999
Current Assets			
Cash & Equivalents	$ 3,620	$ 13,328	$ 30,490
Investments, available for sale	36,426	37,896	
Investments, held to maturity			
Contract A/R, net	13,328	20,338	23,305.0
Costs & Est. Earnings in excess of billings on contracts	4,779	7,889	8,966
Prepaid Expenses, other	1,012	1,199	1,539
Total Current Assets	59,165	80,650	64,300
Fixed Assets			
Furniture & Fixtures	5,609	6,710	
Office Equipment	1,673	1,767	
Computer Equipment	8,056	10,370	
Leasehold Improvements	924	1,130	
Total Fixed Assets	16,261	19,977	
Less: Accumulated Depreciation	(7,785)	(10,583)	
Net Fixed Assets	8,476	9,063	10,815
Other Assets	246	300	14,032
Total Assets	67,887	90,013	89,147
Current Liabilities			
Accounts Payable	1,292	2,538	10,654
Accrued Payroll	2,500	5,279	
Accrued Vacation payable	1,103	1,428	
Billings in excess of costs and est. earnings on contracts	3,646	4,554	3,994
Deferred Tax Liability	1,191	471	67
Current portion, capital leases	52	31	
Related party debt			
Total Current Liabilities	9,784	14,301	14,715
Non-current Liabilities			
Capital Lease Obligation, net	31	-	
Deferred Tax Liability	2,090	1,298	579
Other	1,018	834	661
Total Liabilities	12,923	16,433	15,955
Commitments & Contingencies			
Stockholders' Equity			
Common Stock	1,442	1,502	1,447
Unrealized Gain	25		
Add'l Comprehensive income		81	18
Additional Paid-in Capital	46,627	52,461	45,979
Retained Earnings	6,870	19,917	25,748
Total Stockholders' Equity	54,963	73,961	73,192
Total Liabilities & Equity	$ 67,887	$ 90,394	$ 89,147

Source: Company reports.

RWD TECHNOLOGIES, INC.
Cash Flow Statement
($ millions)

Year Ended December 31	12/31/96	12/31/97	12/31/98	6 mos ended 6/30/99
Cash Flows From Operating Activities				
Net Income	$ 8,249	$ 6,673	$ 13,116	6110
Adjustments to net cash provided by operating activities				
Depreciation/Amortization	2232	3104	3542	2005
Gain on Sale	32	-19	274	7
Deferred Income Taxes		3281	-1411	-600
(Inc) Dec in AR	-533	-1347	-7060	-2918
(Inc) Dec in Costs & Est. earnings in excess of billings	508	-1448	-3110	-1078
(Inc) Dec in prepaid expenses	7	-153	-227	-184
Inc (Dec) in AP	572	3552	8172	3266
Inc (Dec) in billings In excess of costs & Est. Earnings	829	957	908	-759
Inc (Dec) in other liabilities		1018	-184	-242
Net Cash Provided by Operating Activities	$ 11,896	$ 15,617	$ 14,020	$ 5,607
Cash Flows from Investing Activities				
Net (purchases) sale of Investments	0	-34398	-1414	9426
Purchase of Fixed Assets	-4961	-3719	-4315	-15342
(Inc) Dec in other assets	-50	-123	-54	-3056
Proceeds from sale of fixed assets	8	36	26	-56
				18
Net Cash used in Investing Activities	$ (5,003)	$ (38,205)	$ (5,757)	$ (9,010)
Cash Flows from Financing Activities				
Principal portion on capital lease	-18	-42	-52	-31
Borrowings (payments) under line of credit, net	-2700			
Payments of shareholder loan		-3800		
Distributions to shareholders	-691	-16364		
Public Offering Costs	-162	-4041		
Issuance of Common Stock	31	47744	1571	966
Repurchase of Common Stock	-214	-820	-73	-8776
Net cash provided by (used in) Financing Activities	$ (3,754)	$ 22,676	$ 1,446	$ (7,841)
Net Increase in Cash & Equivalents	$ 3,140	$ 89	$ 9,709	$ (11,244)
Cash & Equivalents, beginning of period	$ 391	$ 3,531	$ 3,619	13328
Cash & Equivalents, end of period	$ 3,531	$ 3,619	$ 13,329	$ 2,084

Source: Company reports.

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SYLVAN LEARNING SYSTEMS, INC.

BUY

NASDAQ: SLVN

PRICE:	$23.06
12-MONTH TARGET PRICE:	$38
52-WEEK RANGE:	$35-17
FULLY DILUTED SHARES O/S:	53.6 MM
MARKET CAPITALIZATION:	$1,236.0 MM
AVG. DAILY VOL. (3 MOS.):	607,734
SECULAR EPS GROWTH:	30%
FY 1999E REVENUES:	$547.0 MM
MARKET CAP./REVENUES:	226%
6/99 TOTAL DEBT:	$137.8 MM
6/99 LTD/TOTAL CAP.:	NONE
6/99 ROAE:	11.0%
6/99 SHAREHOLDERS' EQ.:	$510.3 MM
6/99 BOOK VALUE/SHARE:	$9.52
DIVIDEND/YIELD:	NONE

FYE 12/31	1998A	1999E	2000E
EPS			
Q1(MAR)	$0.09	$0.13A	$0.18
Q2(JUN)	0.15	0.21A	0.28
Q3(SEP)	0.26	0.30	0.41
Q4(DEC)	0.37	0.53	0.68
FISCAL YR	$0.85	$1.17	$1.55
P/E	27.1	19.7	14.9
P/E/G	90%	66%	50%

An In-Depth Look at an Education Titan

- Sylvan Learning Systems, Inc., is helping to transform the traditional definitions of "education" in the U.S. and abroad. We believe the company has a smart strategic business strategy and the business acumen to execute that strategy.
- Sylvan Learning Systems is a leader in providing lifelong learning services to learners across the world. The company provides computer-based testing for professional organizations and certifications, tutoring services, language instruction and contract education services in the K-12 market. The future Sylvan Learning Center may become a magnet for an entire family of eager learners.
- Sylvan has many moving parts, but the overall strategy is well integrated. We believe Sylvan has constructed a business model that could put the company in a position to touch the learning activities of individuals from their childhood well into their working years. It is this breadth and depth of education offerings that simultaneously have excited and frustrated investors. We believe this frustration has been borne out in the stock's relatively weak performance in 1999.

The Sylvan Vision

We believe Sylvan is transforming the delivery of education and training products and services. Computer-based testing is exploding, outsourced instructional services by public schools is growing rapidly and tutoring is encompassing all learners, not just those who are academically challenged. The future Sylvan Learning Center may become a magnet for an entire family of eager learners:

- A gifted elementary school student prepping for upper school courses.
- The IT professional mother completing yet another certification exam.
- The immigrant father refining his English with either computer-based or teacher-led instruction.

The multiple lines of Sylvan's business empower the company to create long-term customer relationships. These relationships will coalesce, in our view, to a significant brand in the brand-starved world of education. The cycle accelerates as a strong brand has the potential to establish and reinforce customer relationships which, in turn, will lead to recurring revenue, consistency in earnings and visible returns.

Company Description and Investment Thesis

Sylvan Learning Systems provides lifelong educational services through three lines of business. The **Adult Learning division** (a.k.a. Testing/Prometric) primarily delivers computer-based testing for academic and professional certification and licensure. The division includes the operations of Wall Street Institute, a European-based franchiser and operator of learning centers for English language instruction and Aspect which also delivers English language training via immersion programs. The **Learning Centers division** provides personalized instructional services to students of all ages and skill levels through a network of more than 650 franchised and company-owned learning centers. The **Contract Educational Services division** (CES) provides educational services and professional development through contracts with school systems and other organizations. Sylvan's services are delivered through its network of more than 3,000 educational and testing centers worldwide.

We believe the core business of tutorial services delivered by the Learning Centers division can sustain annual growth of more than 15%. The growth will be delivered through a combination of same-store growth from the franchisees of 10-15%, same-store growth from the company-owned centers of 10-15%, the opportunity to sell more franchises and the possibility of buying back mature franchises. We estimate annual growth in the Adult Learning division can exceed 30%, primarily driven by the rapid migration of paper-and-pencil testing to computer-based testing. As the benefits of computerized testing become more evident (i.e., greater security, daily administration, instant feedback), we believe the rate of migration will accelerate. We believe the CES division can grow in excess of 20% per year as more public schools outsource instructional services to business enterprises. Sylvan, in our view, is well positioned to be a primary beneficiary of that trend, particularly if staffing issues are left to the school administrators.

The European higher education market is yet another education market that Sylvan plans to dominate. Beginning in 1991, Sylvan acquired the tutoring business, which is now Sylvan Learning Centers, and it is currently the dominant player with market share of 15-20% in a $2 billion market. The testing business was launched in 1992 and Sylvan currently has 5% overall market share and 90% share

in computer-based testing. Sylvan entered the Contract Services business in 1993 and the English language instruction business in 1996 and we believe it holds the number one or number two position in both of these markets today. This track record speaks for itself. Sylvan has done a remarkable job of identifying the higher-margin, niche markets in education and then moving swiftly to dominate the space. With the recent purchase of Madrid-based Universidad Europa de Madrid (UEM), we believe Sylvan is on the way to creating another profitable business segment.

It is no secret that Sylvan's business model is complicated, with many moving parts, acquisitions and global operations. We do believe, however, that the overall strategy of placing Sylvan squarely in the path of nearly every aspect of the lifelong learning process does have its merits. In our view, investors have become frustrated with the time it has taken Sylvan to communicate an integrated strategy and then execute on that strategy to show tangible market share gains.

However, either by vigilance in sorting through the changing details of the business or in fear of persistent naysayers, investors may be suffering one of life's oldest adages: missing the forest for the trees: With a revenue CAGR of 300% since the 1993 IPO, Sylvan has evolved to become a titan in education.

Therefore, we recommend that investors both applaud Sylvan's acquisitive nature as well as embrace its dynamic business model. In evaluating the long-term investment potential of Sylvan, we will continue to focus on the company's ability to create a dominant market share while striving to improve shareholder returns.

The Adult Learning Division—Testing and Language Training

Sylvan's testing centers (2,900 worldwide) deliver more than 400,000 tests monthly in one of more than 140 countries and in one of more than 20 languages. Sylvan's Prometric Division—by a significantly large margin—is the largest testing vendor in a worldwide market estimated to exceed $3 billion. The business offers a full array of services that includes: test publishing and packaging; registration and scheduling; payment processing; candidate security and proctoring; client reporting and data archiving.

Some testing centers (238) are located within Sylvan Learning Centers whereas the other centers are Authorized Prometric Testing Centers (APTCs). The APTCs are located within facilities, such as third-party computer training centers and on campuses of colleges and universities.

Currently the composition of tests delivered by Sylvan Prometric is roughly 43% information technology (such as Microsoft Certified Systems Engineers), 24% professional licensure (such as National Association of Securities Dealers), 26% academic testing (such as the Graduate Management Aptitude Test) and 7% miscellaneous exams.

Customers pay the test fee to Sylvan Prometric, which then shares the revenue with its test partners—such as Microsoft. Sylvan Prometric holds contracts (on average two to three years in length) with vendors that negotiate with Sylvan based primarily on the volume of tests to be delivered. As volumes increase, Sylvan likely receives a smaller share of the test fee, which are usually in excess of $100 per test.

On average, we believe Sylvan Prometric receives 50% of the test fee as revenue from which Sylvan Prometric, in turn, must pay its expenses including channel fees to its partners like New Horizons Worldwide Centers. When tests are delivered at Sylvan Learning Centers, the franchisee or Center owners receive a fee from Sylvan Prometric.

Testing for IT Certification

IT professionals seek certification in the use of various hardware and software technologies in order to differentiate themselves from the IT labor queue. Companies rely on certification to validate skill sets of prospective hires, for example, or perhaps to secure higher billing rates from a client by offering to deploy a more talented team of consultants.

In addition, IT vendors are highly motivated to promote certification on their own products in order to expand the "installed base" of skilled, early adopters of their products. We believe IT Certification is growing in excess of 65% per year, driven both by more vendors offering certification and same-vendor growth because of popularity of certain technologies. The original certifiers (Novell and Microsoft) continue to dominate IT testing with more than 70% of annual IT tests.

Sylvan's main competitor in the market for IT certification testing is Virtual University Enterprises (VUE). VUE, a division of National Computer Systems, is an electronic testing, course registration and training administration services company headquartered in Bloomington, Minnesota. The company has very low IT testing volume, in our opinion, perhaps 3000 Microsoft and Novell tests per month. It remains a very distant second to Sylvan's dominating lead position.

We are **likely to see more competition in the IT area** because restrictions and barriers to entry are much less formidable than they are in the academic area. **In our view, the overall market will grow fast enough—with the increasing number of hardware and software vendors offering certification—to outdistance any catch-up being played by Sylvan's distantly trailing competitors.**

Professional Licensing and Certification

We remain confident in the prospects for 20%+ growth in professional testing, particularly with contributions from the **U.S. Medical Licensing Exam** (USMLE), a contract that we believe may deliver more than $12 million in annual revenue during fiscal 2000. The exam's "Step One" is already being delivered by Sylvan Testing Centers.

Other professional licensure exams include: Federal Aviation Administration, American Society of Clinical Pathologists (ASCP); Armed Services Vocational Aptitude Battery (ASVAB); National Association of Securities Dealers (NASD); NCLEX: for the licensing of registered and practical nurses; National Council of Architectural Registration Boards (NCARB); National Board of Medical Examiners. In 1999, Sylvan won a very large contract in Britain that should generate more than $20 million annually for the next five years to administer driving tests. Sylvan is building out more than 140 testing sites from which it can deliver not only driving tests but other tests.

As in IT certification, we believe Sylvan will see increased competition in professional licensing and certification as well. For example, NCS, beginning in 2002, will be the exclusive testing provider for the National Council of State Boards of Nursing's National Council Licensure Examination (NCLEX). This contract marks NCS's entry into the professional certification sector, and could be worth up to $100 million over seven years. NCS will deliver the NCLEX through a yet-to-be built network of 200 professional testing sites across the U.S. and its territories. This network, along with the ability to offer Internet-based testing and registration, will enhance NCS's move into the professional certification market.

We believe the professional certification market will be large enough for multiple players to be successful over the long term, particularly as employers continue to emphasize tangible proof of skills and knowledge.

State-based licensing (real estate, insurance, construction, food handling, etc.) is a competitive bid business with different processes in each state. We believe Sylvan's alliance with Chauncey—under the name Experior—will be a significant driver for its state-based licensing exams.

Sylvan's joint venture with Chauncey is essentially a combination of Sylvan's NAI/Block testing business and Chauncey's state-based testing business. Sylvan's strength is that it helps with generation of leads and infrastructure whereas Chauncey is primarily strong with testing methods and development. The joint venture, which is accounted for under "Equity in Affiliated" on Sylvan's income statement, will probably contribute roughly $3 million for fiscal 1999.

The business is often won in the state legislature where contracts for exams are doled out. The state-centric nature of the business has engendered the fragmented state of the current market where regional vendors still control a significant share of state-based tests. Sylvan needs to win its battles one at a time. However, the strongest growth driver, by far, is the migration of exams from paper and pencil to computer-based. We expect more exams to move toward computer-based delivery, including CPA exams.

Academic Tests

Since 1991, Sylvan has been the exclusive commercial testing partner of the Educational Testing Service. The contract that was signed in 1993 now runs through 2005. Sylvan also has a separate, 10-year contract with ETS for the international delivery of computer-based tests outside of North America, which was signed in 1994.

The sheer volume of academic tests is staggering: for example, more than 300,000 GMAT exams are delivered via computer in a total of 100 countries. The TOEFL (Test of English as a Foreign Language) exam is delivered 700,000 times per year to foreign speaking students interested in attending U.S. universities. The TOEFL will, in our view, provide a profitable toehold in foreign markets for development of indigenous testing businesses (i.e., the local version of our SAT), such as the Vista Bular in Brazil.

The aptitude test for high school students and military entry (ASVA) should generate significant revenue in 2000, when we estimate Sylvan will administer approximately 1.5 million exams per year. Overall, the domestic, academic testing pie consists of: 36% GRE, 27% GMAT, 27% TOEFL and 10% Praxis and other.

Language Instruction

Wall Street Institute (WSI) and Aspect are Sylvan subsidiaries that provide English language instruction. WSI and Aspect run a combined total of more than 275 locations in 14 countries, generating $165 million in revenue. WSI operates more than 200 centers in Spain, France, Germany, Italy, Portugal, Switzerland, Mexico, Chile and Venezuela. Wall Street Institutes opened its first center in Miami. (The centers will teach English to non-English speaking people living in Miami, of which there are more than 1,000,000.)

WSI provides English language instruction on a part-time basis to working adult professionals. WSI has a strong presence in Europe. We believe WSI teaches more English in Spain, for example, than Berlitz teaches in all of Europe. WSI will serve as a platform for introduction of other American

educational services such as delivery of the TOEFL test for foreign students anxious to enroll in U.S. universities.

We believe WSI generally enjoys year-over-year same-store growth of 15-20%. The average center generates approximately $500,000 in revenue.

	# of Centers (Company-owned)	# of Co-Owned Centers (Total Co-owned enter revenue)
1996	163	—
1997	203 (1)	$80 million
1998	246 (14)	$115 million
1999	326 (19)	$150 million

Source: Company reports, Banc of America Securities LLC estimates.

Aspect is a leading provider of immersion programs for training in English for college-age students. Founded in 1992, ASPECT delivers intensive English language programs at 27 schools in five countries. International markets also present significant opportunity for Aspect. For example, we believe the market for English language training in Japan is in excess of $1 billion.

We believe there is significant opportunity for cross-selling Aspect's services into other Sylvan division. For example, Aspect's core competency may become part of the Contract Education Services division as it addresses ESL students (English as a Second Language) in public schools.

Estimates for the Adult Learning Division

We believe Sylvan's domination of the testing industry will continue. The breadth of product and geographic coverage that the network can offer a potential partner is unparalleled anywhere in the world, and we believe the strong growth in fiscal 1999 and 2000 reflects the division's enormous potential.

We project revenue growth of 35% and 27% in fiscal 1999 and 2000, respectively, driven by strong growth in every testing sector. We believe there is a strong possibility, particularly in 2000, for significant revenue upside from large contract awards. And, of course, the golden eggs, the SAT (Scholastic Aptitude Test—high school seniors take the SAT as the primary standardized admissions test) and PSAT (Pre-SAT, sort of a practice for the real SAT), loom on the horizon, although we believe computerized versions of these tests are at least 18 months away.

We also expect the testing division to show continued margin improvements, as increased testing volume is driven through the Sylvan/Prometric network. We estimate overall testing operating margins to grow from 17.4% in fiscal 1998 to 19.7% in 1999 and 20.9% in fiscal 2000. The strong revenue growth and significant margin expansion should drive operating income, in our view, up 55% in fiscal 1999 and 33% in fiscal 2000.

ESTIMATED TEST VOLUME AND MARGIN ANALYSIS
($ millions)

	# of Tests	Price	Revenues	Op. Margin	Op. Income
1998	3,000,000	$45	$198.7	23.6%	$46.9
1999					
Academic	770,000	44	33.9	25%	
IT Certification	2,300,000	60	138.0	24%	
Professional/WSI	1,900,000	50	95.0	26%	
ETS International	775,000	45	34.9	10%	
Total	5,770,627		$301.6	23.7%	$71.4
1999					
Testing Revenue Breakdown					
	# of Tests	**Price**	**Revenues**	**Op Margin**	**Op Income**
Aspect	N/A		70.3	2.4%	1.7
Testing	5,770,627	45	301.6	23.7%	71.4
Total			**$371.9**	**19.9%**	**$73.1**

Source: Banc of America Securities LLC estimates; the company does not provide this level of granularity in its public documents.

Learning Centers

The Learning Centers remain the heart of the Sylvan brand. Sylvan Learning Center is a recognized name in education with more than 700 Learning Centers dotting the landscape of America's communities.

The Learning Center will administer a battery of tests to diagnose the problem and identify skill gaps. After the results of the test have been evaluated and discussed with the parents, the Learning Center will offer a prescription to help the child improve. A typical Sylvan student is 1 to 1.5 years behind in reading and requires anywhere from 36-60 hours of classroom instruction to catch up. On average, the student visits the Center eight hours per month (twice per week) for one-hour visits. Parents will pay, on average, for 52 hours of sessions at $35-40 per hour, or roughly $2000.

Typically, after 12 hours of work, the Center will administer another diagnostic to measure progress. On average, the child will finish the program within 48 hours of study at which time the Center director will try to sustain the customer relationship by suggesting that the parents consider additional work—perhaps SAT prep or more reading work. The length of stay for customers has been increasing, on average, 5-10% per year.

New programs drive much of the same-customer growth. Currently, college prep represents less than 10% of the business; however, the growth is in excess of 40% per year. The Johns Hopkins University's (JHU) gifted and talented program is also offered at 90 centers, however, the contribution is not yet significant. This is the first time that JHU has expanded its programming beyond the reach of a select group of children, and we expect large demand from the parents of talented students. This program will expand the market reach of the learning centers beyond educationally challenged students and toward high achievers.

There are 81 company-owned Learning Centers and 697 franchised centers owned by more than 500 franchisees. The variation in per-center revenue is great—a few centers will generate close to $1 million in revenue and others as little as $100,000. Franchised centers average roughly $300,000 per year in

revenue while company-owned centers average more than $500,000 per year. Sylvan often buys franchise centers that the company believes are in attractive markets, are being underutilized by the franchisee or are in markets which could be attractive if the number and location of individual Learning Centers were under Sylvan's control.

We believe the company-owned centers serve as "hubs of excellence" to demonstrate successful practices to franchises and to test new marketing and educational programs. Currently, company-owned centers are located in the suburban areas surrounding Los Angeles, Dallas, Philadelphia, Miami/Ft. Lauderdale, Minneapolis, Baltimore, Washington, D.C., Salt Lake City, Orlando, Huntsville/Birmingham and Orange County.

One compelling reason for some buybacks, in our view, is that some learning centers reach a peak revenue level after years of fast growth and begin to push their operating efficiencies. Sylvan steps in, buys them back and then provides the management structure, volume and efficiencies needed. Those centers could benefit from incorporation with the franchiser (Sylvan), which is willing to accelerate advertising spending in order to elevate the center to the next revenue plateau. We expect Sylvan to make five to 10 buybacks during fiscal 1999 and perhaps upwards of 15 in fiscal 2000.

We believe the company is paying 5-7x trailing EBITDA for buybacks. Buybacks fall into one of two classes:

- An area where the company already owns centers and can therefore attain economies of scale on marketing.
- A new market where the company can control the marketing co-op.

Schulerhilfe and Overseas Expansion Opportunities

Schulerhilfe, a German tutoring business acquired by Sylvan in 1999, has 700 franchise centers and 200 company-owned centers. Fiscal 1998 revenue estimates for Schulerhilfe were $15.8 million with pretax earnings of $3.7 million.

The Schulerhilfe program provides tutoring to groups of four to eight students for three hours per week. The price per student is $100 per month. We believe each center generates $70,000-80,000 in annual revenue.

We believe Schulerhilfe looks like Sylvan circa 1990. All marketing is done in newspapers and the business is growing minimally year over year. We expect that growth will accelerate in 1999 as Sylvan is proselytizing Schulerhilfe franchisees and corporate managers to the marketing ways of Sylvan. Radio and TV tests have succeeded in converting the operators by offering compelling evidence in the form of accelerating lead flow. Franchisees have agreed to a 50% increase in advertising fee for the co-op.

The business Schulerhilfe model is markedly different than Sylvan's, however, because there are no royalties. Franchisees pay a fixed monthly fee, only. Sylvan is trying to alter the model by selling new products within the franchise structure.

Schulerhilfe is Sylvan's first major hub in Europe for its Learning Centers division. We believe additional overseas momentum is building in Spain, for example, where we believe Sylvan's master franchisee will open 30 learning centers by year-end 1999 and 40 by year-end 2000. We expect systemwide revenues from this effort of $18 million in fiscal 2000.

We believe franchise development may also be under way in the U.K..

Estimates for the Learning Centers Division

We expect that franchise royalties will continue to be the largest contributor to franchise revenue and increase by 22% year over year, to almost $19 million in 1999. The $3 million increase in royalty revenue is based on an estimate of a $25 million increase in systemwide franchise revenue earned by the franchisees. The $25 million increase in systemwide franchise revenue will derive from same-store growth of 5% (approximately $10 million) and revenue from new stores of $15 million.

We believe company-owned centers revenue will grow 26% year over year, to $45 million in 1999. Overall, we estimate that Learning Center revenue will increase by approximately 42% year over year, to $92 million in 1999.

The combination of a highly fragmented market and the existence of several hundred franchisees is a reassuring landscape of growth, particularly for a division with the lengthy, sustained growth of the Learning Centers division.

In addition, we believe the combination of overseas opportunities (Schulerhilfe, U.K. and Spain) and increasing demand for after-school support by educationally obsessed baby boomers may provide positive surprises.

Contract Educational Services

Traditionally, instruction and school management have been the exclusive domain of school districts. The tradition appears to be fading, however. School executives have begun to invite private contractors and vendors to bid on parts of the entire academic process, including instruction.

Sylvan has parlayed its credibility and reputation that emerged from its core tutoring centers into a thriving business of contracts with school districts to run what are, in effect, school-site tutoring centers. The Contract Educational Services (CES) division began in 1993 by delivering supplemental programs to enhance reading and math skills to educationally challenged students at five schools in Baltimore. Sylvan now operates school-based learning centers for federally funded Title I-educated students in more than 900 schools nationwide.

Contract Educational Services are derived from the following sources: Title I funding (39%), Canter (31%), state services (12%) and specialized services (18%).

Compton, California—A Representative CES Contract

In January 1998, Sylvan was awarded a contract to provide its services in eight public schools in the district of Compton, California. We believe the potential value of the contract is more than $5 million over three years. The initial term of this contract was from May-September of 1998. The contract may have the potential of doubling in size based on a lengthier term, without accounting for any potential from adding more schools or students. We believe there may be significantly more revenue provided for Sylvan by the school district to tutor students after school and during the summer. The same-district growth opportunity is large, too: Compton contracted to provide instructional aid to more than 1,200 students in the eight schools, yet, Compton includes 29,000 students in 38 schools.

We believe the average public school in a district generates approximately $200,000-250,000 per year. The contract is based on the number of students charged and fees per student range from as low as $800 per student to as high as $1,500 per student. However, the division will try to accommodate any budget

constraints that the district faces. There are severe disparities across the nation in student funding, but it is rare for the per-student fee to fall below $800. On average, a student receives one hour of instruction, twice per week, at $20 per hour for 30 weeks in the average school year (totals to $1200 per student).

The company does not break out revenue in much detail, however, if we assume revenues of $250,000 per school and we know that there are approximately 140 schools under contract, then total public schools revenue should approach $35-40 million. We estimate CES public and nonpublic school revenue of $39 million for fiscal 1999.

The average model is illustrated below. Sylvan is paid per student.

PUBLIC SCHOOL MODEL

Revenues	$150,000-200,000
Labor	45%
Variable	5%
Fixed	30%
Net pretax	15%
	Margins at school are 20-25%.
	Margins in district should be 15-20%.

Source: Company reports, Banc of America Securities LLC estimates.

In April 1998, Sylvan announced its participation in the Los Angeles Unified School District's $10 million teacher training and student tutoring project. This 32-school contract in L.A. has a potential of $1.5 million for Sylvan. The potential for same-district growth is enormous, we believe, when one considers that there are 790 schools in the L.A. Unified School District—many of which, in our view, could use Sylvan's services.

As Sylvan works to leverage existing relationships with schools in a district to reach other schools, we believe within-district growth is the strongest source of potential revenue upside for the division.

- Evidence of leverage from initial district signings is offered in Detroit, which added five new schools after its contract signing.
- Chicago, Baltimore, and Washington D.C., also added more schools to an existing contract.
- Richmond and Detroit were the first to expand within same year of initial contract.
- Inter-district growth is also evident: the Contract Services division leveraged its relationship with St. Paul to move into Minneapolis.

Selling Focus

The division President, Paula Singer, has added 10 consulting salespeople (six for public schools, four for private) who have been, in our view, selling efficiently into relationships established from multiple years working within the "fraternity" known as public schooling. Four of the 10 are former school superintendents.

It is a consultative sale and a consultative service that depends on relationship-building. For example, the sales cycle in Compton was shorter than usual, approximately one year; however, the average sale may take up to 18 months. First, the division needs to educate the stakeholders (board members, teachers, superintendents, parents) regarding the benefits of the Sylvan methodology. Second,

the stakeholders must identify the most appropriate schools with which to begin. Last, there is the period needed to ramp up by hiring the appropriate instructors, etc.

Other Products and Services

The Contract Services Division includes revenue and business outside of the services sold into K-12 schools. Extended-day products are becoming popular as more parents look for meaningful activities for their children after school.

Educational Inroads

Sylvan acquired **Educational Inroads** (Inroads) in May 1997. The majority of Inroads' customer schools are nonpublic. We believe each nonpublic school generates approximately $40,000 in revenues per year. We know that the company provides educational services to approximately 750 nonpublic schools, therefore this subdivision should generate revenues of approximately $35 million in fiscal 1999.

In our opinion, Inroads has provided Sylvan with increased access to schools and districts where it was previously uninvited. We also believe Inroads offers exceptional cross-selling opportunities going forward as Sylvan mixes its compensatory education strength with the special education strength of Inroads. For example, the Washington D.C. and New Orleans markets had previously split their contract between Sylvan and Inroads. In addition, we believe the combination will expand the operating margins of this division.

The PACE Group

The PACE Group (PACE) provides educational and training services to large U.S. corporations. Services offered by PACE include racial and gender workplace diversity training and skills improvement programs such as writing, advanced reading, listening and public speaking. This acquisition complements the Sylvan-At-Work program and extends the core educational services that Sylvan offers to adults in the corporate workplace.

PACE is capitalizing on the trend toward outsourcing of training services by large corporations. Pace licenses most of these programs from the program developers and pays royalties ranging from 5% to 15% of the revenues generated from the programs.

PACE generated roughly $15 million in revenues in fiscal 1998. We estimate revenues of $15 million in fiscal 1999, with operating margins of 15%.

Canter

In our opinion, continuing education for teachers is a fast-growing market, particularly with the political momentum increasing for improving the quality of our nations' teachers. We believe there will be 100,000 new teachers over the next seven years. And, in order to raise teaching standards, we believe regulators are increasing the use of state certification and competency testing. The combined effect of these secular trends is an increase in the demand for training for teacher certification tests. With that trend in mind, Sylvan acquired **Canter**. Canter's business consists primarily of continuing education for teachers, including courseware for a complete distance learning Master's program offered by several independent colleges and universities.

We believe Canter generated approximately $25 million in revenues during 1998. We believe approximately 47% of Canter's business is in distance learning, 42% is in video-based college courses and the remaining 11% is in staff development and materials.

We believe the acquisition of Canter will be synergistic for other divisions, too, because Canter customers are, in effect, Sylvan customers: teachers working in public schools. We believe Canter will be recognized as a Sylvan company, and teachers who learn from Sylvan/Canter and then test at Sylvan (teacher certification exams) will gain confidence in Sylvan as a partner.

We believe cross-selling has already begun where the Contract Education Services division can layer Canter's expertise in teacher training on top of an existing relationship based on remedial work for students.

We believe Canter is truly on plan for Sylvan. Canter had historical revenues from seminar business, workshops, etc. that were low-margin business. When Sylvan acquired Canter, these workshops were shut down. Canter's performance thus far has been somewhat masked by these programs. Canter is also spending a lot from signing up four to five new universities that began the Master's program in September. We believe the Canter business could provide operating margins in the low 30% range as the business becomes more mature and gains efficiencies from larger scale projects.

Estimates for the Contract Education Services Division

The following model illustrates a detailed revenue and expense model for this division. (**Please note that this model is based on our estimates**. The company does not offer this level of granularity in its reports and filings with the SEC.)

CONTRACT EDUCATIONAL SERVICES
($ millions)

	1996	1997	1998	1999E
Revenues				
Public & Nonpublic Schools	$21.1	$22.9	$29.8	$33.7
Y/Y growth	24%	9%	30%	13%
Educational Inroads	24.8	25.3	29.5	35.0
Y/Y growth		2%	17%	20%
Canter/PACE/Sylvan-at-work	12.2	18.4	41.3	46.0
Y/Y growth		51%	124%	11.3%
Total	**58.2**	**66.6**	**100.5**	**114.7**
Y/Y growth	113%	14%	51%	14%
Expenses				
Sylvan	19.0	18.6		
Inroads	24.3	23.9		
Total Public/Nonpublic Schools	43.3	42.5	52.5	56.3
Gross margin	6%	12%	16%	18%
Canter/PACE/Sylvan-at-work	10.1	13.6	33.4	41.6
Gross margin	17%	26%	19.1%	10%
Total	**53.4**	**56.1**	**85.9**	**97.9**
Gross Margin	8%	16%	14.5%	13.6%
Profit	**$4.8**	**$10.5**	**$15.2**	**$15.6**

Source: Company reports and Banc of America Securities LLC estimates.

This division continues to offer evidence of accelerating growth and more and more visibility from the lengthy contracts.

Estimates

Based on this analysis, we estimate that contract services revenue will increase to $115 million in 1999. We believe the division will deliver contract services to an additional 50 schools, on average, in 1999 than it did in 1998. Approximately 50 schools multiplied by the $200,000 per school average, gives us an estimated year-over-year revenue increase of $10 million for the year. The other $4 million increase comes from growth at Inroads.

Margins in contract services have been 8-18%, with the wide range a result of seasonality in demand. As volume within a district grows, there is operating leverage on fixed expenses in each district. We believe the company's plan to grow volume within a district will leverage overall fixed expenses on each district. We expect to see margins expand to more than 14% in 1999 and even higher going forward.

Contracts Are Changing—For the Better

We believe an important shift is occurring within the contract services division, one that could reduce union and school administration resistance to Sylvan contracts and provide for significantly higher margins going forward.

Traditional CES contracts stipulated that Sylvan was responsible for recruiting and hiring teachers to staff Sylvan programs at the school with the CES contract. We believe the model is shifting toward schools assuming this responsibility, eliminating the time and resource-consuming job of finding, hiring and keeping teachers. Because of the nationwide teacher shortage, districts were relying on Sylvan to hire teachers. Sylvan was, however, beginning to lose teachers to the district.

Minneapolis was the first to hire their own teachers while Sylvan took care of managing the program. The formula proved sufficiently successful to allow management to begin a nationwide roll-out. Because Sylvan is now responsible for less, the revenues per contract will most likely decline from the current average of $200,000-250,000 per school. We believe the "new" CES contract will likely be half the historical average, but provide significantly higher margins.

We do not believe there will be any impact this year. Dollar margins should be the same ($15 million in fiscal 1999 and $21 million in fiscal 2000) while operating margin as a percentage of sales should increase significantly.

We believe this shift in strategy is smart for two reasons. First, the new model engenders less union resistance, by allowing the schools to choose the teachers. Second, the new model removes a significant cost source for Sylvan by placing the recruiting, hiring and retaining functions in the hands of the school administration. We equate this new model to a management consulting contract where Sylvan runs the program, but does so with district personnel.

Europe

Sylvan has begun a new initiative to bring into being an international network of universities on several continents. These institutions will be operated on a for-profit basis and Sylvan plans major investments in expansion and upgrading of these institutions. This will involve establishing distance learning technologies to enhance the curriculum offerings.

Leveraging its expertise in Spain and exploiting a huge opportunity in international higher education, Sylvan acquired 54% of the Universidad Europa de Madrid (UEM), a private, for-profit university, which offers 20 different professional and liberal arts degrees.

Under terms of the deal, Sylvan paid $28.5 million in cash and assumed $22.5 million in existing debt. This represents a total purchase price of $51 million, or approximately 6x EBITDA. Total revenue for the University for 1998 was $48 million, $43 million of which was tuition.

Tuition costs currently average $6,300 per student with new student tuition averaging $6,700. With incremental students, the company foresees gross margins of 40%.

We expect the acquisition to be neutral to mildly accretive to our 1999 EPS estimate. Accretion levels could be higher; however, we expect Sylvan to aggressively invest in sales and marketing, and move into two new markets in Spain in a two-year time frame.

Approximately 7,000 students currently attend UEM and Sylvan hopes to increase enrollments to 10,000. While for-profit education in Europe is a few years behind the market in the U.S., we believe strong trends will drive demand over the coming years. Sylvan hopes to expand its university system to other European countries.

The European higher education space is an attractive, supply-constrained market being driven by rising demographics, a growing middle class demanding entrance to the knowledge economy and the current constraints of space and availability in the traditional public university system. Currently, only 12% of adults in the workforce in Europe have a college education and in some countries this percentage is as low 9%. We believe Europe represents an enormous opportunity for higher education, as employers and nations continue to emphasize the importance of intellectual capital.

Sylvan hired Dr. Joe Duffey to run the European University business. Dr. Duffey is currently the director of the U.S. Information Agency (USIA) and has extensive background in the administrations of both public and private universities as the former president of American University and Chancellor of the University of Massachusetts. Dr. Duffey was Assistant Secretary of State for Educational and Cultural Affairs under President's Reagan and Carter.

Investment Risks

In our view, the primary business risk for Sylvan is the ability to manage and capitalize on the dramatic growth opportunities facing it. Additional risks include: (1) learning center revenues may suffer with the economic circumstances of the parents; (2) testing center revenues may disappoint if adoption of computerized testing slows or delivery competition increases, in spite of exclusive contracts with ETS and the NASD; (3) timing of contract services may be difficult to predict; and (4) results may suffer the political and financial restraints endemic in public school districts. Resistance can delay contribution from the CES division from public schools, school boards or unions.

Sylvan Sound Bites

We realize that Sylvan has one of the most complicated business models since the Byzantine empire. So, in an effort to boil it all down to some info nuggets useful for investors, we provide the following highlights.

Core Educational Services

- Sylvan is widely recognized as providing high-quality educational services with consistent, quantifiable results, and has delivered its **core educational service to more than 1.1 million students primarily in grades three through eight over the past 18 years**.
- Typically, a parent contacts a Sylvan Learning Center because the parent believes his or her child may have insufficient reading or mathematics skills.
- Approximately 35% of phone inquiries result in a visit to a Learning Center.
- After the initial testing and consultation, the company estimates that more than 90% of parents enroll the student in a full course of study.
- The program typically requires four to six months to complete and comprises **approximately 36-60 hours of instruction**. Instruction is generally given twice a week for one hour per visit. Sylvan requires that all instructors be certified teachers.
- The cost of the tests and initial consultation ranges from $95 to $250, and fees average $35 per hour. The company estimates that the typical program costs approximately $1,650.

Franchise Operations

- As of June 30, 1999, **there were a total of 778 Learning Centers in 49 states, six Canadian provinces, Hong Kong, South Korea and Guam operated by the company or its franchisees.** As of that date, there were 697 franchise centers and 81 company-owned centers.
- **During 1998, 60 franchised Learning Centers were opened and seven were closed. In addition, during 1998, 13 franchisee-owned Learning Centers were acquired by the company.**
- The cost to open a typical franchised Learning Center ranges from $79,000 to $145,000, including the franchise license fee, furniture, equipment and an initial supply of certain items required under the company's franchise agreement. Including the up-front fee, materials and the typical working capital investment necessary, the typical investment is roughly $135,000.

  The following are the terms of franchising agreement:

  - The company currently offers a License Agreement with an **initial term of 10 years.**
  - The initial license fee ranges from **$36,000 to $46,000**, depending on factors such as the number of school-age children in the territory.
  - **Royalties are either 8% or 9% of gross revenues of the Learning Center,** and the royalty rate depends on the demographics of the territory and is specified in the License Agreement.
  - **Advertising spending requirements range from $1,000 to $3,500 per month**, or up to 8% of gross revenues, whichever is greater. The License Agreement has been revised periodically, and several franchisees are operating under older agreements with variations from the above terms.

Company-Owned Learning Centers

- As of December 31, 1998, Sylvan owned and operated 63 Learning Centers.

- Nineteen of the company-owned Learning Centers contained Technology Centers for computer-based testing.

Schulerhilfe

- On October 28, 1998 the company acquired Schulerhilfe, a German franchisor and operator of tutoring centers. Schulerhilfe has 177 company-owned centers and approximately 770 franchise locations in Germany. Class sizes are generally smaller, and meet more frequently than Sylvan Learning Centers.

Sylvan Prometric

- The company conducts its testing business through 2,437 testing centers, 1,202 of which are located in the United States and Canada, and the remainder of which are located in 128 foreign countries.
- These centers are classified as either Sylvan Technology Centers ("STCs") or Authorized Prometric Testing Centers ("APTCs"). During 1998, the company added **456 testing centers, of which 279 were APTCs**.
- Certification testing for Microsoft and Novell accounted for $52.9 million, or 19%, of Sylvan Prometric's revenues in fiscal 1998.

ETS

- **ETS, a leading educational testing firm, develops and administers more than 9.0 million tests each year**, including the Graduate Record Exam ("GRE"), the Graduate Management Admissions Test ("GMAT"), The Test of English as a Foreign Language ("TOEFL"), the National Teachers Exam ("NTE") and the Advanced Placement Program, sponsored by organizations such as the College Board**.**
- During 1998, the company recognized approximately $54.4 million, or 20% of Sylvan Prometric's revenues in fiscal 1998, from services for ETS.
- The company's contract with ETS was renegotiated in 1997 and now extends through 2005.
- Furthermore, the contract provides that the company will deliver not less than 50% of ETS's computer-based testing volume (excluding College Board tests) in North America.
- During 1998, the company expanded international testing for ETS to a total of 116 permanent and 30 temporary sites **in 79 countries.**

  Under the ETS agreements, the company offers computer-based versions of the following:

  - PRAXIS examination—used to license beginning teachers.
  - The GRE—used by graduate schools to evaluate applicants.
  - Contract with the National Council of State Boards of Nursing—a computer-based licensing examination (NCLEX) for registered and practical nurses.
  - GMAT.

In addition to the tests offered through its partnership with ETS, the company is one of three entities licensed by the **FAA to deliver computer-based versions of various pilot and mechanical licensing tests for private aviation**. In addition to FAA testing, the company provides testing services for organizations in many other fields, such as for computer professionals, medical laboratory technicians and military candidates.

The Wall Street Institute

- The company, in December 1996, purchased Wall Street Institute International, B.V. and its commonly controlled affiliates, a European-based franchisor and operator of learning centers where English is taught through a combination of computer-based and live instruction.
- Typically, the instructional programs are approximately nine months to one year in duration.
- WSI has more than 250 company-owned and franchised centers in operation throughout Europe and Latin America. WSI has 82 centers in Spain with the remainder in France, Germany, Italy, Portugal, Switzerland, Mexico, Chile and Venezuela.

Contract Educational Services

Public Schools

As of December 31, 1998, the company had contracts to provide supplemental remedial educational services to 139 public schools.

Educational Inroads

On May 30, 1997 the company acquired by merger all of the outstanding stock of I-R, Inc. and Independent Child Study Teams, Inc. in exchange for 1,414,000 shares of common stock. I-R, Inc. and Independent Child Study Teams, Inc., were commonly owned by two shareholders. Educational Inroads provides remedial and special education services to public and nonpublic school systems, with current contracts in New Jersey, Maryland, Louisiana, Washington D.C., and other school districts.

PACE

In March 1995, the company acquired The PACE Group ("PACE"), a provider of educational and training services to large corporations throughout the United States. Services offered by PACE include racial and gender workplace diversity training and skills improvement programs such as writing, advanced reading, listening and public speaking.

This acquisition complements the company's Sylvan-At-Work program and extends the core educational services the company offers to adults in the corporate workplace.

PACE provides educational and training services, typically on-site, to businesses throughout the United States and generated **$15 million in revenues for the year ended December 31, 1998.**

PACE currently has **26 sales offices** throughout the United States and markets the programs locally through its sales force. PACE customers include **Ford Motor Company, IBM, BankOne, General Motors and AT&T.**

The Canter Group

In January 1998, the company acquired Canter and Associates, Inc., and Canter Educational Productions, Inc., a leading provider of training, staff development and graduate courseware for educators. The Canter Group had revenues of approximately $25 million in 1998. This acquisition will allow Sylvan to continue to expand into the college and university market with a proven course curriculum.

Marketing

A portion of Sylvan's advertising includes spots on morning and evening news on the national networks. Sylvan's advertising campaign demonstrates the benefits of its personalized educational services through testimonials of actual parents and Sylvan teachers.

Franchisees form local cooperatives to collectively purchase local television and radio advertising and usually supplement their efforts with local newspaper and direct mail.

The company also has additional marketing support for specific programs, including reading, math, algebra, geometry, study skills, SAT/ACT college prep and writing.

The company is actively involved **in marketing computer-based testing services to national and international academic testing organizations**, such as ETS, and licensing and professional certification organizations.

The company markets its school-based educational services to several public school systems and state education departments. This marketing effort has been expanded to seek contracts for both public and nonpublic schools, where both are administered by the local public school district.

Sylvan Learning Systems, Inc., a Baltimore-based provider of educational and testing services, operates through three synergistic businesses, each with strong growth potential: (1) the original Sylvan Learning Center division with more than 700 centers nationally; (2) computer-based testing services through exclusive agreements with the Educational Testing Service (ETS) and the NASD; and (3) the contract educational services division, which provides the company's core educational services under contract to some of the largest school districts in the country including Baltimore, Chicago, Newark, New Jersey, and Washington, D.C.

SYLVAN LEARNING SYSTEMS, INC.

Quarterly Sales and Earnings Model
($ 000s)

	1Q98A	2Q98A	3Q98A	4Q98A	1998A	1Q99A	2Q99A	3Q99E	4Q99E	1999E	2000E
Revenues											
Learning Centers	$ 12,136	$ 15,471	$ 16,443	$ 20,706	$ 64,756	$ 19,824	$ 23,544	$ 24,598	$ 23,384	$ 91,350	$ 109,281
Contract Services	26,620	25,649	15,911	32,339	100,519	30,591	27,667	18,219	38,236	114,713	133,066
Testing	47,567	58,199	77,347	91,934	275,047	73,363	82,511	96,038	119,913	371,825	471,551
UEM							14,738	-	18,000	32,738	52,000
Total Revenue	**86,323**	**99,319**	**109,701**	**144,979**	**440,322**	**123,778**	**148,460**	**138,855**	**199,533**	**610,625**	**765,898**
Learning Centers Expenses	9,429	10,933	11,571	13,488	45,421	15,300	16,655	17,169	16,135	65,259	77,191
Learning Centers Operating Income	2,707	4,538	4,872	7,218	19,335	4,524	6,889	7,428	7,249	26,090	32,090
Contract Services Expenses	22,814	22,125	14,518	26,414	85,870	27,020	24,622	16,288	31,162	99,092	111,533
Contract Services Operating Income	3,806	3,524	1,393	5,925	14,649	3,571	3,045	1,931	7,074	15,621	21,533
Testing Expenses	44,538	50,905	59,660	72,206	227,201	65,881	71,279	74,040	87,510	298,711	372,891
Testing Operating Income	3,029	7,294	17,687	19,728	47,846	7,482	11,232	21,998	32,403	73,114	98,660
UEM Expenses							11,687	3,600	14,400	29,687	47,510
UEM Operating Income							3,051	(3,600)	3,600	3,051	4,490
Total Direct Costs and Expenses	**76,781**	**83,963**	**85,749**	**112,108**	**358,492**	**108,201**	**124,243**	**111,097**	**149,207**	**492,749**	**609,125**
General & Admin Expenses	3,327	4,258	3,637	4,215	15,437	4,724	5,042	4,582	5,264	19,613	25,239
Total Operating Expenses	80,108	98,120	89,386	116,323	374,038	112,925	129,285	115,680	154,472	512,362	634,364
Operating Income	**6,215**	**11,098**	**20,315**	**28,656**	**66,284**	**10,853**	**19,175**	**23,175**	**45,061**	**98,264**	**131,534**
Total Other Income (Exp)	367	148	(690)	994	819	(541)	(2,892)	1,564	(1,726)	(3,595)	(2,446)
Pretax Income	6,582	11,246	19,625	29,650	57,223	10,312	16,283	24,739	43,335	94,669	129,087
Income Taxes	2,315	3,829	6,673	10,081	21,559	3,506	5,866	8,411	14,734	32,517	43,890
Net Income	4,267	7,417	12,952	19,569	35,664	6,806	10,417	16,328	28,601	62,151	85,198
EPS	**$ 0.09**	**$ 0.15**	**$ 0.26**	**$ 0.37**	**$ 0.85**	**$ 0.13**	**$ 0.19**	**$ 0.30**	**$ 0.53**	**$ 1.16**	**$ 1.55**
Wtd. Avg. Shares Outstanding	49.9	50.6	50.6	53.3	51.3	54.1	53.6	53.7	53.8	53.8	54.9
Margin Analysis											
Learning Center Operating Margin	22.3%	29.3%	29.6%	34.9%	29.9%	22.8%	29.3%	30.2%	31.0%	28.6%	29.4%
Contract Sevices Operating Margin	14.3%	13.7%	8.8%	18.3%	14.6%	11.7%	11.0%	10.6%	18.5%	13.6%	16.2%
Testing Operating Margin	6.4%	12.5%	22.9%	21.5%	17.4%	10.2%	13.6%	22.9%	27.0%	19.7%	20.9%
UEM Operating Margin							20.7%	na	20.0%	9.3%	8.6%
Business Unit Operating Margins	**11.1%**	**15.5%**	**21.8%**	**22.7%**	**18.6%**	**12.6%**	**16.3%**	**20.0%**	**25.2%**	**19.3%**	**20.5%**
General & Administrative	3.9%	4.3%	3.3%	2.9%	3.5%	3.8%	3.4%	3.3%	2.6%	3.2%	3.3%
Operating Income	**7.2%**	**11.2%**	**18.5%**	**19.8%**	**15.1%**	**8.8%**	**12.9%**	**16.7%**	**22.6%**	**16.1%**	**17.2%**
Earnings Pre-tax	7.6%	11.3%	17.9%	20.5%	13.0%	8.3%	11.0%	17.8%	21.7%	15.5%	16.9%
Net Margin	4.9%	14.1%	11.8%	13.5%	11.5%	5.5%	7.2%	11.8%	14.3%	10.2%	11.1%
Effective Tax Rate	35.2%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%
Percent Change (Yr/Yr)											
Learning Center Revenues	31.5%	43.8%	46.7%	58.1%	46.2%	63.3%	52.2%	49.6%	12.9%	41.1%	19.6%
Contract Services Revenues	51.5%	40.0%	60.4%	55.7%	51.0%	14.9%	7.9%	14.5%	18.2%	14.1%	16.0%
Testing Revenues	39.8%	46.1%	53.9%	44.4%	46.5%	54.2%	41.8%	24.2%	30.4%	35.2%	26.8%
UEM Revenues							na				na
Total Revenue	**41.9%**	**44.1%**	**53.7%**	**48.6%**	**47.4%**	**43.4%**	**49.5%**	**26.6%**	**37.6%**	**38.7%**	**25.4%**
Learning Center Operating Income	10.8%	45.7%	40.9%	102.5%	53.7%	67.1%	51.8%	52.5%	0.4%	34.9%	23.0%
Contract Sevices Operating Income	648.6%	34.9%	-32.5%	33.4%	39.2%	284.9%	-13.6%	38.6%	19.4%	6.6%	37.8%
Testing Operating Income	-8.4%	48.8%	102.6%	14.8%	40.2%	147.0%	54.0%	24.4%	64.2%	52.8%	34.9%
UEM Operating Income							na				
Business Unit Operating Income	**33.3%**	**44.4%**	**68.1%**	**30.5%**	**43.0%**	**63.2%**	**37.8%**	**30.9%**	**42.1%**	**40.3%**	**32.6%**
General & Administrative	12.4%	26.2%	-0.7%	7.3%	10.8%	42.0%	18.4%	26.0%	24.9%	27.0%	28.7%
Operating Income	**48.1%**	**52.9%**	**91.9%**	**68.4%**	**69.7%**	**74.6%**	**72.8%**	**14.1%**	**57.2%**	**48.2%**	**33.9%**
Net Income	65.0%	187.0%	72.4%	69.7%	91.5%	59.5%	-23.0%	26.1%	46.2%	23.1%	36.4%
EPS	**42.2%**	**-7.1%**	**59.0%**	**64.8%**	**38.8%**	**47.1%**	**32.6%**	**18.8%**	**45.0%**	**35.2%**	**34.4%**

(1) includes primarily investments in Caliber Learning Network, Inc. and Experior

Source: Company reports and Banc of America Securities LLC estimates.

SYLVAN LEARNING SYSTEMS, INC.
Balance Sheet
($ 000s)

	1996	1997	1998	1Q99
ASSETS				
Current assets				
Cash	$ 18,565	$ 29,818	$ 33,170	29432
Short term investments	16,449	82,951	6,166	6694
Accounts receivable, net	45,001	73,785	90,394	79172
Inventories	4,592	4,999	9,841	9744
Deferred tax assets, net	620	3,755	1,831	1831
Other		265	1,843	2772
Prepaid expenses	4,708	6,303	10,093	11999
Total current assets	89,934	201,876	153,338	141,644
Property and equipment, net	33,054	51,367	97,881	103497
Investment	28,679	40,481	62,762	53239
Goodwill	110,143	182,868	283,455	292345
Net Assets to be Transferred to JV			31,575	46027
Other assets	15,805	20,187	30,785	30924
Total assets	277,615	496,779	659,796	667,676
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities				
Accounts Payable	30,883	40,754	57,177	53500
Income Taxes Payable	310	5,590	11,784	10150
Current Portion of LTD	3,331	1,253	1,128	1101
Current portion due to shareholders of Acq.	4,921	13,794	40,719	17940
Deferred revenues	19,361	26,323	27,411	33427
Other	2,474	1,288	19	15
Total current liabilities	61,279	89,002	138,238	116,133
Non current liabilities				
LongTerm Debt	4,262	2428	12504	14121
Bank Line of Credit			6961	7083
Deferred Income Tax	2,651	7620		
Due To Shareholders of Acquired Companies	26,526	56366	12239	32517
Other LTL	374	903	1021	1122
Total Liabilities	95,091	156,319	170,963	170,976
Stockholder's equity	182,524	340,248	488,833	496700
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	277,615	496,567	659,796	667,676

Source: Company reports.

SYLVAN LEARNING SYSTEMS, INC.
Cash Flow Statement
($ millions)

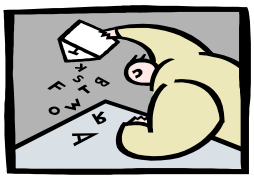
	1996	1997	1998	Q1:99
OPERATING ACTIVITIES				
Net Income	**14.74**	**29.43**	**35.70**	**5.48**
Adjustments to reconcile NI to net cash used in op. activities				
Depreciation	5.13	8.17	15.60	5.42
Amortization	7.48	10.05	16.72	4.85
Interest from purchase of Drake/Acctg Change				*2.01*
Loss on impairment of assets		4.00		
Provision for doubtful accounts	0.06	0.54		
Deferred Income taxes	2.11	1.88	1.27	
Equity in net (income) loss of unconsolidated affiliates	(0.36)	2.13	3.50	0.08
Other	0.00	9.40	0.67	0.06
Changes in operating assets and liabilities				
Accounts and notes receivable	(9.04)	(26.42)	(18.54)	10.95
Cost and est earnings in xs of billings on uncompleted cont	(0.41)	(0.14)	(4.19)	(0.05)
Inventory	(0.24)	(0.30)	(4.20)	0.02
Prepaid expenses	(0.40)	(0.59)	(4.45)	(2.79)
Other assets	(1.07)	(0.75)		
Accounts payable and accrued expenses	4.33	16.34	8.48	(4.38)
Billings in xs of costs and est earnings on uncompleted con	(0.23)	0.12		
Other current liabilities		0.00	11.35	(0.28)
Deferred revenue and other long-term liabilities	1.21	1.68	(3.78)	5.73
Net cash used in op. activities	**23.29**	**55.54**	**58.12**	**27.10**
INVESTING ACTIVITIES				
Investment in and advance to unconsolidated affiliates	(0.10)			
Purchase of available-for-sale securities	(31.26)	(92.52)	(2.50)	(0.51)
Proceeds from sale of available-for-sale securities	45.34	26.04	79.61	
Investment in and advances to affiliates	(3.25)	(9.26)	(11.57)	(3.22)
Increase in other investments	(2.33)	(4.14)	(5.05)	(1.80)
Purchase of (Proceeds from) property and equipment	(13.27)	(26.75)	(58.29)	(11.04)
Purchase of contract rights	(4.89)			
Cash received (paid) for acquired businesses	2.01	(6.40)	(68.04)	(14.97)
Cash paid for intangible assets	0.00			
Deferred contract costs and other assets	(6.94)	(1.44)	(8.67)	(3.11)
Net cash provided by investing activities	**(14.69)**	**(114.47)**	**(74.51)**	**(34.64)**
FINANCING ACTIVITIES				
Payments to stockholders	(0.20)	(0.49)		
Proceeds from exercise of options and warrants	5.11	4.96	6.36	1.57
Proceeds from (Payments on) issuance of common stock	0.53	73.69	0.53	0.67
Proceeds from (Payments on) long-term debt and capital le	(1.92)	(5.32)	10.05	1.72
Proceeds from (Paydown of) bank lines of credit	(3.50)	(1.00)	0.29	1.10
Other				
Net cash used in financing activities	**0.03**	**71.84**	**17.23**	**5.06**
Effects of exchange rate changes on cash	(0.07)	(0.96)	2.51	(1.27)
Net Increase (Decrease) in cash and cash equivalents	8.55	11.95	3.34	(3.74)
Cash and cash equivalents at beginning of period	2.53	11.08	29.65	32.99
Cash and cash equivalents at end of period	11.08	23.03	32.99	29.25

Source: Company reports.

GLOSSARY OF TERMS

Banc of America Securities

E-learning is a nascent market, where participants and onlookers alike are still trying to determine the market's direction, characteristics, winners and losers. And as with any nascent market, a veritable cornucopia of jargon has emerged, trying to explain different products and services.



We believe this "alphabet soup" has created a significant degree of confusion, particularly for investors not wholly familiar with the space. For investors, this can be a very frustrating development. For example, when analyzing competing business plans, trying to decipher between Company A's "Internet-based learning system" and Company B's "online learning solution" could cause anyone to reach for the Tylenol. While these two "solutions" look similar, their components could be either very different or much the same. This is where the confusion becomes debilitating. This alphabet soup renders coherent discussion near impossible as many conversants speak past each other, failing to share common words and definitions.

Listed below are some of the concepts, products and services that we have come across in our research. And, of course, we do not attempt to define them. We do, however, offer our own Glossary of other terms at page 283.

Distance Learning	Learning Community
Technology Mediated Learning	Learning Management System
Internet-Based Learning	Learning Management Programs
Internet-Based Learning System	Enterprise Learning Management Systems
Knowledge Management	Collaborative Learning Environments
Learning Portal	Learner Support Services
Internet-Based Training	Mentoring
Web-Based Training	Performance Support
Anytime Anywhere Learning	Performance Assessment
Collaborative Learning	Student Support
Learning Management System	Skills Assessment
Instructional Management System	Mastery Assessment
Online Learning Management	Information Nuggets
Learning Administration System	Learning Kernels
Enterprise Learning Solution	Preassessment
Virtual University	Web-Based Performance Support System
Online University	Assessment Skills Centers
Online Learning	Knowledge Content Distributor
Virtual Learning Enterprise	Course Management System
Online Learning System	Corporate University
Metadata	Metalanguage
XML, HTML, DHTML, Java	Virtual University Enterprise
Enterprise Learning Foundation	Distributed Learning
Search Learning	Learning Services Provider
Virtual Learning Systems	CyberUniversity

We do believe at some point, however, the industry will settle on several common definitions for the industry sector, specific products and services. But for now, we believe confusion will reign.

The E-Learning Glossary

Application sharing. Allows more than one person to use a software application. Multiple users can add and delete items from the document. The application is launched from one person's computer and that person is the gatekeeper that can determine which users can make changes to the document and which ones can only view it.

Asynchronous Learning (as opposed to synchronous). When the learner is engaged at a time other than concurrent with the learning advisor as well as other learners. Aside from the concurrent time element, the asynchronous learning experience can mirror that of the synchronous learning experience. Forms of asynchronous communication include e-mail, listservs, audiocassette courses, videotaped courses, correspondence courses and Internet courses.

Asynchronous Collaborative E-Learning (ACEL). The term was coined to indicate that the experience was asynchronous, but also collaborative. The collaboration does not occur in real time, however.

Authoring tools. Allow users to create and adapt content to the Web for use in an online course. Assists in creating e-learning courses. Provides a "do-it-yourself" option for placing content and materials online.

C-learning: Classroom learning; the traditional form of learning where learners attend class at a specific location, at a set time and with a learning advisor.

Computer-Based Training (CBT). Training materials and content delivered via software applications that are installed on the learner's computer. CBT evolved as a way to augment and reduce the traditional classroom training model.

Chat room. A real-time text-based conversation with other learners over the Internet. Whatever a user types is displayed on the other users' screens as it is being typed.

Distance learning. The interaction between a learner who strives to acquire knowledge or skill by instruction or study with a remote knowledge source—one that is physically separated from the learner.

E-learning. The learning byproducts from the marriage of the Internet and education. The Internet has transformed the way education occurs and creates new ways of learning.

E-library. The wealth of digital resources for learners to use for learning purposes. E-library companies help find, organize and mine the content for learners.

E-test. The ability to provide assessment and evaluation over the Internet.

Firewall. A security barrier between a company intranet and the larger Internet to protect systems from viruses and other unwanted digital intrusions.

Floor control. A feature in a synchronous learning environment that allows one person to know what is going on with all the participants. The person with floor control can look at other learners' screens, control the whiteboard and run the class. The learning advisor is typically the one with floor control, but it can be transferred to other learners.

Handraising. A function in a synchronous learning environment that allows learners to notify the learning advisor that they have a question by pressing a hand-like icon on the screen.

Individualized Education Plans (IEP). Learners can design how, when and what they want to learn. The Internet makes this process easier by offering a variety of choices and learning options.

Internet. A system of linked computer networks that facilitates communication and transfers information among the users.

Intranet. A private network that links a group of computers, usually within a company. Functions like the Internet but is not available to everyone.

Listserve. An automatic mailing list where an e-mail message sent to one address is distributed to all the people who have subscribed to that list.

Message boards and discussion threads. An asynchronous communication tool that allows learners to post comments and questions to a common location on the Internet. Learner and Learning advisors can read the messages and post responses at their leisure.

Metadata. A way to organize data into "nuggets" so that the user can locate, evaluate, access and manage online information. (See pages 22-24 for an extensive discussion of metadata).

Portal. A location on the Web that serves as a central source for information and content targeted to a specific group. Serves as a gateway to information and e-learning from a variety of different sources.

Search and Learn (SAL). A type of learning facilitated by the Internet where the learner has a vast amount of resources available to use for learning and the Internet helps to facilitate this type of learning.

Synchronous. Through modern technology, the learners log into class at a regularly scheduled time and date and engage real time with the learning advisor and other learners, much like a real classroom. Assignments are given, questions are asked and answered, and exams and pop quizzes are taken.

Synchronous Collaborative E-Learning (SCEL). The term was coined to indicate that the experience was synchronous, but also collaborative. Common forms of synchronous learning include video teleconferencing, audio conferencing and computer conferencing and/or chats.

Self-paced E-Learning (SPEL). The learner uses the Internet to search for static documents that provide information and content. The engagement is self-paced and self-directed, enabled by the Internet but absent an organized course or program.

Virtual backpack. Software or service that allows learner to organize information that they have collected on the Web. It helps learners to know what information they have and organize it in such a way that they can find it again or transform it into another form such as a presentation or report.

Web page. A file written in a programming language that enables it be read on the World Wide Web.

Web site. A collection of more than one web pages linked together.

Whiteboard. An application that allows documents and content materials to be posted on the screen for all learners to see. The learning advisor can then make changes to the document or post additional information just like a traditional blackboard. It is used is a synchronous learning situation. The learners see the information being changed on their screens in real time.

Web-Based Training (WBT). Training that occurs using the Internet. Learners must connect to an intranet or Internet in order to access the information.

COMPANY INDEX

Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
Achieve Global	www.achieveglobal.com	People-to-people training through c-learning, self-study courses and CD-ROMs.		50
Advantage Learning Systems*	www.advlearn.com	Provides information systems to grades K-12 consisting of computer software and related training, designed to improve students' academic performance by tracking their progress and increasing their skills.	ALSI	87, 147
AOL	www.aol.com	Online service provider. Services include electronic mail, conferencing, news, sports, Internet access, entertainment, weather, stock quotes, software, computing support and online classes.	AOL	106
APEX	www.apex.netu.com/	Independent educational enterprise that develops and delivers online Advanced Placement courses to individuals and schools.		98
Apollo Group*	www.apollogrp.com	A private university providing education programs for working adults. The University of Phoenix Online was formed in 1989 and currently enrolls degree-seeking adult students from all over the U.S. and the world. Learners can take a class at one of the campuses or through University of Phoenix Online.	APOL	29, 55, 165
Asymetrix*	www.asymetrix.com	Provider of enterprisewide online learning solutions designed to help organizations more effectively organize, manage and use knowledge as a competitive advantage. Provides a single-source learning solution that includes both a technology platform and related professional services that enable customers to create, distribute and manage learning applications enterprisewide. Recently launched an education and training portal, click2learn.com.	ASYM	25, 181
AT&T Learning Network	www.att.com/learningnetwork	Program that links teachers, parents and schools to the technology tools and support they need to help improve teaching and learning.	T	102
Avalon Information Technology	www.atlantis.com/~avalon	The BRIGHTLight software facilitates live Internet collaboration		75
Bell and Howell Information and Learning	www.infolearning.com	Provides access to educational content for K-12 and universities.	BHW	92
Blackboard	company.blackboard.net	Provides higher education institutions with software products for hosting fully scalable, effective and easy-to-use "turn key" online learning environments. In addition, Blackboard's web site, Blackboard.com, enables instructors to create free course web sites hosted on Blackboard's servers.		33
CA Virtual University	www.california.edu	Online catalog of electronic courses that are offered by the states 301 accredited colleges and universities.		36

Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
Caliber Learning Network, Inc.*	www.caliberlearning.com	Provides a network of more than 40 graduate-level learning and professional training campuses, where university courses and professional development and training courses from Fortune 1000 companies are distributed in an online setting; has contracts with The Wharton School, John Hopkins University, Teachers College of Columbia University, Compaq and MCI Systemhouse; public entity begun by Sylvan Learning Systems.	CLBR	78, 187
Campus Pipeline	www.campuspipeline.com	Create a virtual, cohesive, campus community dedicated to meeting the educational needs of individuals. Links students, faculty and administrators to one another and to the information they need.		37
CBT Group*	www.cbtsys.com	Designs and delivers interactive education software develops award-winning interactive training courseware that meets the information technology training needs of business, education and government organizations worldwide.	CBTSY	115, 193
Centra Software	www.centra.com	Provider of Internet collaboration software.		45
Classroom Connect	www.classroomconnect.com	Creates and provides innovative, thought-provoking, interactive media and services that make the Internet easy in the classroom.		89
Cognitive Arts	www.cognitivearts.com	Provides a training solution via CD-ROM, intranet or Internet that use a "learn by doing" approach. Design custom courses for universities and companies as well as selling off-the-shelf products.		76
Convene	www.convene.com	Provides complete solution for online education. Trains faculty and students and furnishes the technology, materials, the host server, network administration and technical support.		30
CyberState University	www.cyberstate.com	Delivers web-based training for Microsoft, Cisco and Novell product certification programs and Computer Telephony Institute and CompTIA's vendor independent certification programs through its Synergy Learning System; business partners include Oracle, Microsoft, Dialogic and Miller Freeman.		
Development Dimensions International		People to people training through c-learning and CD-ROMs.		51
Devry	www.devry.com	Network of private high education institutions that provide degrees in business- and technology-related fields. The Keller School of Management offers graduate degrees through an e-learning program.	DV	215

Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
DigitalThink	www.digitialthink.com	Provides web-based training courses for programmers, developers, system administrators and end users. Course topics include Java, Windows NT Certification, web programming and publishing, database concepts and Internet literacy.		124
EB Online	www.eb.com	Encyclopedia Britannica's web site with reference tools and assistance in searching preselected web sites.		13
eCollege.com	www.ecollege.com	To provide educators and students with unparalleled options for learning—not only to extend the classroom, but to elevate its potential by creating online campuses and courses.		
Eduprise.com	www.eduprise.com	Provides development and hosting for web-based education and training for organizations.		32
Edutest	www.edutest.com	Provides testing and assessment for students taking Virginia assessment test. Available for home or school use.		64
Eloquent	www.eloquent.com	Developer of corporate infomedia software, which transforms live events, such as training and conferences into online resources; partners include Real Networks and Siebel Systems; Omega Venture Partners led the company's last round of financing.		
Embark.com	www.embark.com	Provides assistance in every aspect of the college process: students exploring and applying to college; the way universities recruit and enroll students; and the way guidance counselors track and manage student progress. CollegeEdge is the foremost authority on college selection, admissions processes and career guidance.		66
ExecuTrain	www.executrain.com	Provider of IT training through c-learning, technology based, and e-learning.		71
Family Education Network	www.familyeducation.com	Provide parents with the information and resources they need to actively participate in their children's learning process.		91, 105
FranklinCovey	www.franklincovey.com	Training through e-learning and books on topics like time management.	FC	51
Harcourt General	www.harcourtgeneral.com	Publishes books, scholarly journals and related materials for educational, scientific, technical, medical, professional and trade markets; owns NETg and ICS Learning Systems; has investment in FamilyEducation.	H	104
Headbone Interactive	www.headbone.com	Content-based, community-oriented kids' destination site on the Internet.		15
Headlight.com	www.headlight.com	Provides e-learning courses directly on the Web in subjects such as team building, business communication, Microsoft Office and programming languages.		23
Houghton Mifflin	www.hmco.com	Publishes textbooks and other educational materials for the school and college markets through seven divisions; has	HTN	

Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
		investment in onlinelearning.net.		
Hungry Minds	www.hungryminds.com	Web-based distance learning portal. Will enable students to take web-based classes on anything from Internet-related professional development topics to lifestyle and continuing education.		18
IBM	www.IBM.com	Develops and distributes computer software applications and hardware.	IBM	108
Infonautics	www.infonautics.com	Provides a range of e-learning solutions. The electric library provides high-value online research and reference tools and services to schools, libraries, colleges, businesses and individuals. JobSleuth provides online assistance in finding a job.	INFO	67
Jones Education Company	www.jec.edu	College Connection is the e-learning division that offers online courses from a network of colleges and universities.	JECO	32
JuniorNet	www.juniornet.com	JuniorNet is the first commercial-free online service created just for kids aged 3-12. JuniorNet combines interactive content from the world's highest-quality children's publishers with technology that quickly delivers rich multimedia images and sound in the safest online environment.		17
Kaplan	www.kaplan.com	Provider of test preparation courses. The web site provides practice activities and tips on applying to school.		65
LearnLinc Corporation	www.ilinc.com	LearnLinc software creates live classroom experiences over the Internet.		71
Macromedia*	www.macromedia.com	Provides web publishing tools and enterprise learning systems.	MACR	90
MaMaMedia	www.mamamedia.com	Activity-based learning products for kids aged 5-12 and their families.		16
Measure Up	www.measureup.com	Provides preparation and exams for IT certification.		61
MediaSeek	www.mediaseek.com	Develops education products for the K-12 market that help to correlate education standards to curriculum resources.		
Microsoft*	www.microsoft.com	Software publisher that has popular Internet browser, Internet Explorer and other software for e-learning.	MSFT	101, 109
Monster.com	www.monster.com	Provides an Internet job search service.		68
National Computer Systems*	www.ncs.com	ERP solutions for districts and schools through its student information management systems, Osiris and The School System; partners with Microsoft to deliver global electronic certification testing; develops administrative and curriculum software; ParentCONNECT allows parents to monitor their child's progress at school and communicate with teachers. Recently acquired NovaNet, an educational services provider via the Internet.	NLCS	88
NetLibrary	www.netlibrary.com	Internet-based library of electronic books; more than 8,000 titles.		68

Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
NetSchools	www.netschools.net	K-12 educational system that includes hardware, software and ongoing support and professional development. Provides each student with a laptop computer and wireless Internet connection.		96
On Target Marketing	www.ontarget.com	Provides c-learning for companies in the area of sales. It has an e-learning component that monitors learner progress.		51
One Touch Systems	www.onetouch.com	Provider of Interactive Distance Learning Systems, which are full, integrated and scaleable from satellite-enabled classrooms to web-based personal computers.		
OnlineLearning.net	www.onlinelearning.net	Provides ULCA extension courses online.		19
Oracle*	www.oracle.com	Develops and distributes software applications, servers and database management systems.	ORCL	104
Pensare	www.pensare.com	Creates intranet-based performance courses in partnership with top business schools and seminar providers, based on best practices in general management, sales, marketing, finance and customer service.		52
Princeton Review	www.princetonreview.com	The Homeroom website (www.homeroom.com) by Princeton Review provides practice tests and advice for state assessment tests.		65
PROVANT*	www.provant.com	Provide c-learning and e-learning for companies in all areas of training. It has a network of companies that provide a range of training solutions.	POVT	50, 229
RWD Technologies*	www.rwd.com	Electronic performance support systems; performance-based training documentation and information system solutions; intranet services; customer service, sales automation and remote diagnostic systems.	RWDT	245
Saba	www.saba.com	Global Internet learning and competency management solutions, transforming training into a new learner-centric, results-oriented paradigm using the power and reach of the Internet.		126
SCT	www.sctcorp.com	Provides web-based administrative and enterprise systems for high education institutions. Has partnered with Campus Pipeline to create online campus solutions.	SCTC	37
SkillSoft	www.skillsoft.com	Develops and markets a library of training titles covering a comprehensive range of business skills. Content is focused on professional effectiveness (leadership, team building, management) and business expertise (marketing, sales, finance, planning).		
Smarterkids.com	www.smarterkids.com	Online educational store for parents with children aged 3-14.		16
SMG Inc	www.smginc.com	Provides computer and web-based training in the area of management and business skills for companies and individuals.		77

Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
Strayer	www.strayer.com	For-profit university offering business-related graduate and undergraduate degrees at campuses across the country. Strayer Online offers degrees through e-learning.	STRA	57
Student Advantage	www.studentadvantage.com	National fee-based Membership Program, Student Advantage has created a community of more than one million student members who receive benefits including ongoing discounts on products and services offered by more than 40 national partners.	STAD	66
Sun Microsystems*	www.sun.com	SchoolTone Alliance creates learning portals in schools to provide content and communication tools.	SUNW	103
Super Tutor Learning Network	www.supertutor.com	Publisher of education software for grades 6-12. It has expanded to create a presence on the Internet with Homeowrkhelp.com, Testprep.com, Foreignlanguage.com and eslhelp.com.		
Sylvan*	www.sylvan.com	Provides a network of learning and testing centers. The learning centers provide assistance in core subject areas for learners in grades K-12.	SLVN	61, 259
Teach.com	www.teach.com	Provides courses in soft skills such as leadership and management as well as technical training in Microsoft and other technical applications. The courses use different methods of interaction to maximize the content that Teach.com has developed. Teach.com combines content with a consulting service to offer customers a variety of training solutions.		
The Center for Creative Leadership	www.ccl.org	People-to-people training through c-learning, satellite and CD-ROMs.		52
The Forum Group		People-to-people training through c-learning, self-study courses, e-learning and CD-ROMs.		51
TRO	www.tro.com	Develops self-paced educational software, through its PLATO Learning System, for middle school through adult/college levels.	TRO	86
Tutornet	www.tutornet.com	Provider of online teacher-moderated tutoring sessions in math and the basic sciences from grades 4-12.		
Unext	www.unext.com	Provides online learning environment for adult learners.		20
Universal Learning Technology	www.ult.com	Provider of web-based learning software and applications.		33
University ACCESS	www.universityaccess.com	Provider of business-based courseware delivered through high-quality video, which is web-convertible, to universities and distance education programs; home page serves as a community portal where courses and online references and resources are available; currently has distribution contract with PBS.		6

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Company	Web Site	Description of E-Learning Component	Ticker	Page Reference in Document
University.com	www.university.com	Online learning portal that designs and markets online training and education systems to medium and large-sized corporations, organizations and university-level academic institutions.		
Virtual University Enterprise*	www.vue.com	A secure Internet-based delivery system for testing and assessment.	NLCS	63
Wave Technologies	www.wavetech.com	Designs, develops and delivers integrated training solutions addressing technical certification, including computer programming, networking and operating systems certifications.	WAVT	
WBT Systems	www.wbtsystems.com	Its TopClass server assists companies in creating and delivering e-learning courses that provide assessment and collaboration tools. Also provides web-based training in the areas of sales, operational skills and technical certification.		
Webivore	www.webivore.com	Complete, easy-to-use research system that enables students and educators to efficiently search educational web sites, collect relevant graphical or textual information and then create Internet-enriched reports or presentations.		13
Western Governor's University	www.wgu.edu	A consortium of schools providing online courses and programs. WGU offers its own degree programs.		35
Wilson Learning	www.wilsonlearning.com	People-to-people training through c-learning, self-study courses and CD-ROMs.		51
Winstar for Education	www.win4edu.com	Provides tools for K-12 schools to use the Internet more efficiently with software that assists with organizing web information, e-mail and conferencing.		90
Wizeup	www.wizeup.com	Distributor of electronic text books.		68
Yahoo	www.yahoo.com	A search engine for the Web. Also has Yahooligans!, a search engine for youth.	YHOO	107
Yipinet	www.yipinet.com	Internet-based learning for professionals in regulated industries such as accounting, financial services, health care and law.		18

* Banc of America Securities LLC currently maintains a market in this security. Banc of America Securities LLC was manager or co-manager of a public offering and/or has performed investment banking or other services for this company in the last three years.

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