WRHAMBRECHT+CO

CORPORATE E-LEARNING: EXPLORING A NEW FRONTIER

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"In a time of drastic change, it is the learners who inherit the future. The learned find themselves equipped to live in a world that no longer exists."

Eric Hoffer, in *Vanguard Management*, 1989

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EXECUTIVE SUMMARY

This report focuses on corporate training, one of the five segments of the education and training market. In particular, we identify key drivers, perform preliminary market segmentation, and estimate growth for market segments and product groups of the technology-based corporate training industry. We outline major trends and likely winning strategies for companies targeting the corporate e-learning market, which we also refer to as e-training market. Since the e-learning industry is a relatively new, unexplored frontier, this report is intended to provide a concise overview of the key aspects of this emerging market and to offer a framework for analysis for industry players and the investment community.

How Large Is the Market? How Quickly Is It Growing?

- **Corporate e-learning is one of the fastest growing and, we believe, most promising markets in the education industry.** While the market is currently relatively small and early stage, it is poised to explode. We expect the online training market to nearly double in size every year through 2003, reaching approximately $11.5 billion by that time. Investment opportunities in online pure plays will emerge, as numerous e-learning companies are now preparing to tap the public markets.
- **Soft skills training outpacing IT.** Online IT training is already a $0.87 billion industry. It has outsized the market for soft skills training fourfold since its emergence. However, at a stunning 123% CAGR, the soft skills training market is growing twice as fast as the IT training market and should surpass it by 2003.
- **Market share and growth rates vary widely among the three major e-learning market segments: Content, Technology, and Services.** With 66% market share, Content is the largest segment, growing at an annual rate of 74%. However, Services is the fastest growing segment, surging ahead at a CAGR of 111%.

What Are the Key Trends?

- **Branding is the key strategy element e-learning providers should focus on.** Low market transparency and limited knowledge of e-learning products will likely represent serious challenges for corporate customers in the next several years. We believe companies will increasingly prefer the "safe choice" and retain e-learning providers with established brand names.
- **Customer priorities shift away from stand-alone training courses.** Corporations increasingly demand a more comprehensive "one-stop-shopping" approach to meet their training needs, leading to convergence within the e-training industry. Value-added services in particular – such as needs assessment and custom curriculum design, online mentoring and performance support, reporting and tracking, and hosting – are expected to fuel market growth in the next several years.
- **Consolidation activity should accelerate.** High fragmentation, long development cycles, and other inefficiencies make the e-learning industry ripe for more intense M&A activity.
- **Technological barriers are diminishing.** The main hurdles to e-learning, such as lack of interactivity, content availability, technology standards, and bandwidth, are currently being addressed. Especially the continued adoption of broadband should facilitate higher use rates of media-rich e-learning products.

Who Will Be the Winners?

- **First movers that manage to build a brand name quickly will likely be among the market leaders.** To succeed, it will be key to combine a quality product with value-added services and a national presence.
- **To secure sizable market share, competitors need to play on all three major fronts – Content, Technology, and Services** – and to deliver an integrated, complete e-learning solution. Such a strategy implies entering strong partnerships or acquiring complementary content, technology, and know-how.

EDUCATION IN THE 21ST CENTURY – CREATING A LEARNING ECONOMY

> *"Education is about to change. Fundamentally. Why? Because almost everything we know about education is up for grabs: the way it is funded, designed, managed, and even delivered. Around the world, wholesale efforts at education reform are already underway; and … these changes are taking place in "Internet time." This is the new education economy – the global education economy."*
>
> The New Education Economy, 1999

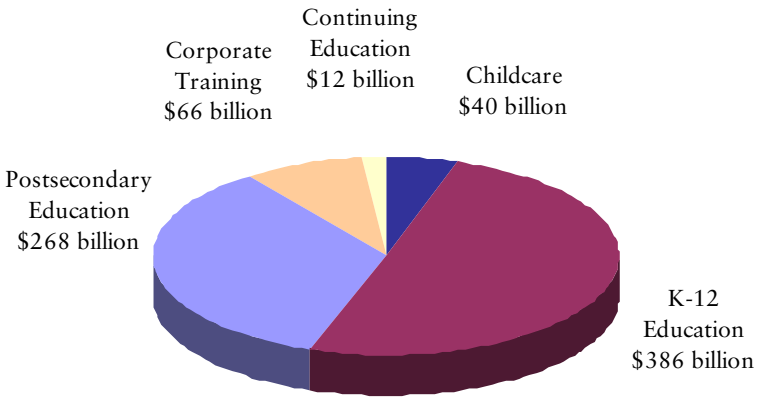
Economy is evolving to a knowledge-based economy. In the last four decades, economic and technological forces have transformed the U.S. economy from a production-based economy to a service-based economy. In the old economy, corporate value and value creation were defined primarily through physical and financial assets. The new economy puts a premium on intellectual capital. However, the life of knowledge and human skills today is shorter than ever, increasing the pressure to remain at the forefront of education and training throughout a career. In the midst of globalization and technological revolution, four-year degrees are just the beginning of a forty-year continuing education. Life-long learning may be considered merely a buzzword today, but it is quickly becoming an imperative.

A paradigm shift in the way education is viewed and delivered. At the beginning of the new millennium, corporations view learning increasingly as a competitive weapon rather than an annoying cost factor. Business success depends more and more on high-quality employee performance, which in turn requires high-quality training. Corporate executives are beginning to understand that enhancing employee skills is key to creating a sustainable competitive advantage. In the quest to remain competitive in today's labor-tight market, companies are exploiting advances in technology to train employees more rapidly, more effectively, and at less expense than in the past.

Huge knowledge gaps demand educational system reform. The new global economy poses more complex challenges to workers, requiring higher levels of education, computer literacy, critical thinking, information analysis, and synthesizing skills. However, educational deficiencies have brought America to the edge of a widening knowledge gap. The U.S. is lagging behind educational levels of other industrial nations in several key indicators. U.S. students, for example, still trail students from other developed countries in mathematics and science achievement, according to the U.S. Department of Education. Even more alarming is that the literacy proficiency of a substantial proportion of the U.S. labor force is limited. More than forty percent of the labor force perform at the two lowest levels on government literacy scales,[1] suggesting that many workers lack the skills needed to interpret, integrate, and compare information using written materials common to the home or workplace. The chasm between the higher demands of a knowledge economy and the educational status of the workforce is deep and must be addressed if the U.S. is to remain competitive internationally. A thorough reexamination of curriculum and teaching methods as they relate to labor market preparation is needed. Academic and corporate environments must be redesigned to adequately prepare people to function in an information society.

The $772 billion education industry is the second largest sector of the U.S. economy. The education and training industry can be divided into five segments: childcare, K-12 education, post-secondary education, corporate training, and continuing education. We estimate the education market to total approximately $772 billion in 2000. At nearly 9% of GDP, the huge market size makes the education and training industry the second largest economic sector in the U.S., next only to healthcare.

EXHIBIT 1: **EDUCATION AND TRAINING MARKET IN 2000**



Sources: National Center of Education Statistics, Digest of Education Statistics, Training Magazine, Bureau of Economic Analysis, Primark Decision Economics, and WR Hambrecht + Co estimates

WHY E-LEARNING?

> *"Social, technological, and economic drivers are transforming education around the world. As globalization encompasses local economies like never before, the development of a skilled workforce becomes a genuinely international concern. And as human capital becomes the chief source of economic value, education and training become lifelong endeavors for the vast majority of workers."*
>
> Peter J. Stokes, Eduventures.com, 1999

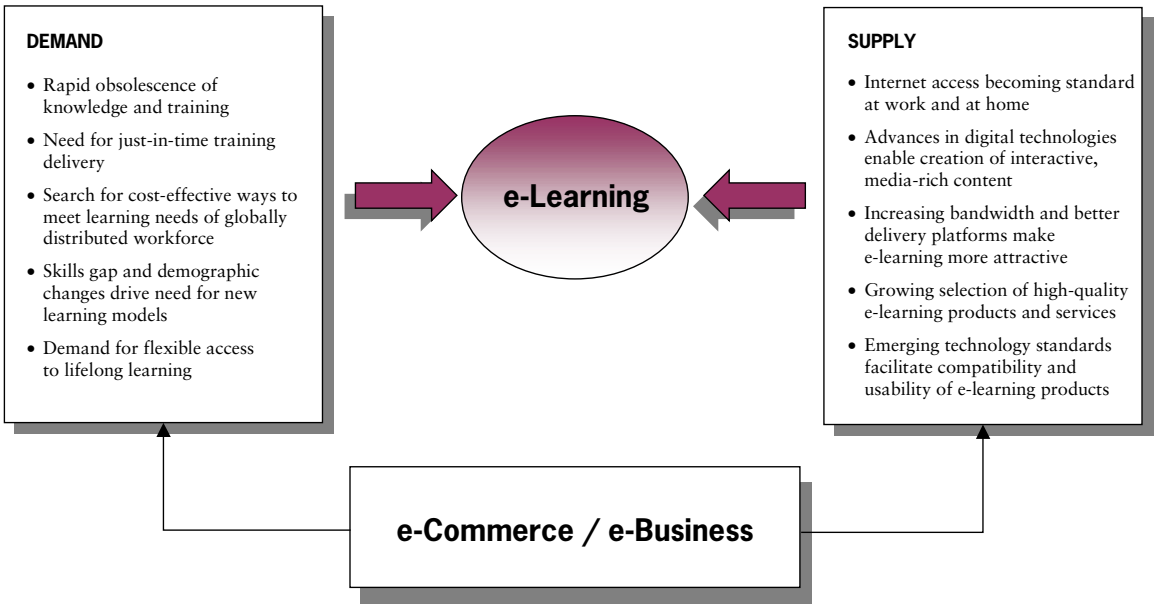
Technological changes increase complexity and velocity of work environment. Technology has changed the way we live, work, think, and learn. Today's workforce has to process more information in a shorter amount of time. New products and services are emerging with accelerating speed. As production cycles and life spans of products continue to shorten, information and training quickly become obsolete. Training managers feel the urgency to deliver knowledge and skills more rapidly and efficiently whenever and wherever needed. In the age of just-in-time production, just-in-time training becomes a critical element to organizational success.

Lack of skilled labor drives need for learning. With unemployment rates at historic lows and a widening skills gap among the workforce, corporations compete fiercely for skilled workers. According to PriceWaterhouseCoopers, 70% of Fortune 1000 companies cite lack of trained employees as their number-one barrier to sustaining growth. Business managers realize that corporations that offer ongoing education and training enjoy a higher rate of employee retention and the benefits of a better-skilled workforce. As a result of the rising importance of training, an increasing number of corporations have hired Chief Knowledge Officers (CKOs) or Chief Learning Officers (CLOs) to plan and coordinate training programs.

Fierce competition in most industries leads to increasing cost pressures. With traditional training methods, companies generally spend more money on transporting and housing trainees than on actual training programs. Approximately two-thirds of training costs are allotted to travel expenses, which represents a major drain on bottom-line profitability. In today's competitive environment, organizations can no longer afford to inflate training budgets with extensive travel and lodging. If opportunity cost is taken into account, the actual costs of training are even higher. Time spent away from the job traveling or sitting in a classroom reduces per-employee productivity and revenue tremendously.

Globalization of business is resulting in manifold challenges. Advances in information technology and falling trade barriers facilitate business around the globe. As borders become less meaningful, global competition intensifies. International expansion and accelerating M&A activity have led to larger and more complex corporations. Today's businesses have more locations in different time zones and employ larger numbers of workers with diverse cultural backgrounds and educational levels than ever. Thus, more information has to be delivered in increasingly larger organizations, challenging internal planning, logistics, and distribution. Corporations worldwide are now seeking more innovative and efficient ways to deliver training to their geographically-dispersed workforce.

EXHIBIT 2: **WHAT IS DRIVING E-LEARNING?**



Sources: SRI Consulting and WR Hambrecht + Co

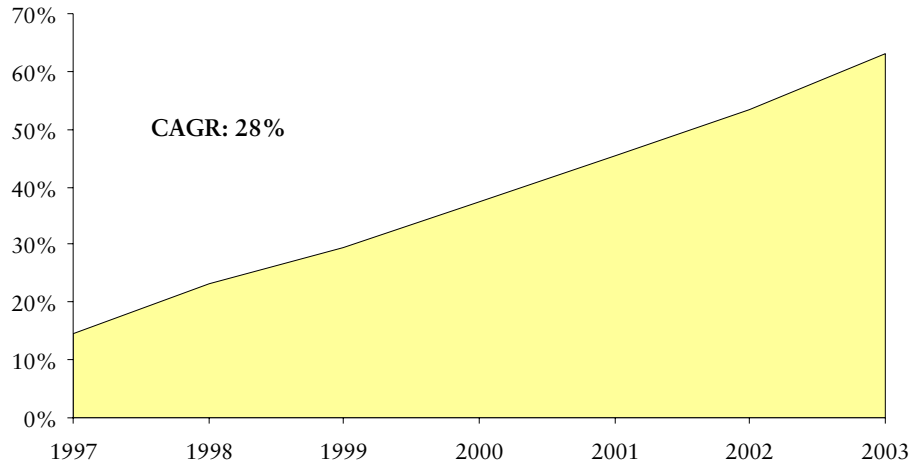
Social and demographic changes direct education toward older target groups. Organizations and training providers need to evaluate whom they train and how. Today, traditional students in higher education – age 18 to 22 – make up less than 20% of all students. The fastest growing group attending higher education institutions are working, part-time students older than 25.[2] This new group of "learning adults" is seeking education principally to advance their careers and increase their salaries. For universities and business-to-consumer (B2C) training providers, these individuals are excellent candidates for education delivered to their homes or offices. Declining birth rates, aging population, and lack of skilled labor also require an objective evaluation of the training needs of older age groups. In the new economy, even senior workers, including those nearing retirement, need to be trained. Broader acceptance of new training delivery options among older workers should facilitate the training process. Americans over 50 years old are already the fastest growing user group of the Internet today.[3]

Knowledge workers require greater flexibility in the workplace. Globalization, competition, and labor shortages cause employees to work longer, harder, and travel more than previous generations did. At the same time, these workers require more independence and responsibility in their jobs and dislike close supervision. Today's knowledge workers have a non-traditional orientation to time and space, believing that as long as the job gets done on time, it is not important where or when it gets done. By the same token, they want the opportunity to allocate time for learning as needed. Modern training methods need to reflect these changes in lifestyle.

Learning has become a continual process rather than a distinct event. In the new economy, corporations face major challenges in keeping their workforce current and competent. Many past training practices are unable to meet these challenges. Traditional training is often unrelated to new business initiatives or key technology drivers. In "just-in-case" fashion, courses are given and then forgotten, often without improving the performance of workers. While learning is not a one-time activity, training has traditionally been treated as such. To retain their competitive edge, organizations have started to investigate which training techniques and delivery methods enhance motivation, performance, collaboration, innovation, and a commitment to life-long learning.

Explosive growth of the Internet provides delivery vehicle for education. The emergence of online education is not only a matter of economic and social change, but also of access. IDC estimates that, by 2003, the number of Internet users worldwide will grow to about 502 million, up from 87 million in 1997, representing a CAGR of 34%. With an estimated 103 million users in 2000 – or 40% of the projected 2000 total – the U.S. has the largest share and highest penetration of the Internet. The U.S. is also the leading nation in ecommerce. By 2003, one-fourth of all U.S. business-to-business purchasing will be done online, as predicted by The Boston Consulting Group. The increasing integration of the Web and American culture is also evidenced by tremendous annual user growth. In 1997, only 15% of the U.S. population used the Internet – then mostly a domain of educational institutions and businesses. As shown in Exhibit 3, a stunning 63% of Americans will be surfing the Web in 2003, more than doubling the usage in 1999. Through its increasing reach and simplicity of use, the Internet has opened the door to a global market where language and geographic barriers for many training products have been erased.

EXHIBIT 3: **INTERNET USER GROWTH AS A PERCENTAGE OF TOTAL U.S. POPULATION**



Sources: International Data Corporation, U.S. Census Bureau, and WR Hambrecht + Co estimates

THE SOLUTION – BRING LEARNING TO PEOPLE

"We need to bring learning to people instead of bringing people to learning."

The MASIE Center, TechLearn '99

Technology has revolutionized business; now it must revolutionize learning. In the 21st century, people will have to learn more than ever before. Especially for global organizations, live classroom-based training is becoming too costly and cumbersome. Even if employees had the time to attend all the courses and seminars and to read all the books and reports they should to remain up-to-date in their area of work, the cost of such learning would be prohibitive. The need to transform how organizations learn points to a more modern, efficient, and flexible alternative: e-learning. The mission of corporate e-learning is to supply the workforce with an up-to-date and cost-effective program that yields motivated, skilled, and loyal knowledge workers.

Anywhere, anytime, anyone. The Internet can offer the logical solution for a company's education and training objectives. We estimate that approximately 80% of the professional workforce already uses computers on the job. Technical obstacles, such as access, standards, infrastructure, and bandwidth, will not be an issue two years from now. The growth of the World Wide Web, high-capacity corporate networks, and high-speed desktop computers will make learning available to people 24 hours a day, seven days a week around the globe. This will enable businesses to distribute training and critical information to multiple locations easily and conveniently. Employees can then access training when it is convenient for them, at home or in the office.

Substantial cost savings due to elimination of travel expenses. When delivered through technology-based solutions, training is less expensive per end user due to scaleable distribution and the elimination of high salaries for trainers and consultants. The biggest benefit of e-learning, however, is that it eliminates the expense and inconvenience of getting the instructor and students in the same place. According to Training Magazine, corporations save between 50–70% when replacing instructor-led training with electronic content delivery. Opting for e-training also means that courses can be pared into shorter sessions and spread out over several days or weeks so that the business would not lose an employee for entire days at a time. Workers can also improve productivity and use their own time more efficiently, as they no longer need to travel or fight rush-hour traffic to get to a class.

Just-in-time access to timely information. Web-based products allow instructors to update lessons and materials across the entire network instantly. This keeps content fresh and consistent and gives students immediate access to the most current data. Information can be retrieved just before it is required, rather than being learned once in a classroom and subsequently forgotten. Training Magazine reported that technology-based training has proven to have a 50–60% better consistency of learning than traditional classroom learning (c-learning).

Higher retention of content through personalized learning. Technology-based solutions allow more room for individual differences in learning styles. They also provide a high level of simulation that can be tailored to the learner's level of proficiency. With 24 x 7 access, people can learn at their own pace and review course material as often as needed. Since they can customize the learning material to their own needs, students have more control over their learning process and can better understand the material, leading to a 60% faster learning curve, compared to instructor-led training. The delivery of content in smaller units, called "chunks," contributes further to a more lasting learning effect. Whereas the average content retention rate for an instructor-led class is only 58%, the more intensive e-learning experience enhances the retention rate by 25 – 60%.[4] Higher retention of the material puts a higher value on every dollar spent on training.

Improved collaboration and interactivity among students. In times when small instructor-led classes tend to be the exception, electronic learning solutions can offer more collaboration and interaction with experts and peers as well as a higher success rate than the live alternative. Teaching and communication techniques which create an interactive online environment include case studies, story-telling, demonstrations, role-playing, simulations, streamed videos, online references, personalized coaching and mentoring, discussion groups, project teams, chat rooms, e-mail, bulletin boards, tips, tutorials, FAQs, and wizards. Distance education can be more stimulating and encourage more critical reasoning than a traditional large instructor-led class because it allows the kind of interaction that takes place most fully in small group settings. Studies have shown that students who take online courses are typically drawn into the subject matter of the class more deeply than in a traditional course because of the discussions they get involved in.[5] This engagement is further facilitated by the fact that instructors do not monopolize attention in an online environment. Another study found that online students had more peer contact with others in the class, enjoyed it more, spent more time on class work, understood the material better, and performed, on average, 20% better than students who were taught in the traditional classroom.[6]

Online training is less intimidating than instructor-led courses. Students taking an online course enter a risk-free environment in which they can try new things and make mistakes without exposing themselves. This characteristic is particularly valuable when trying to learn soft skills, such as leadership and decision-making. A good learning program shows the consequences of students' actions and where/why they went wrong. After a failure, students can go back and try again. This type of learning experience eliminates the embarrassment of failure in front of a group.

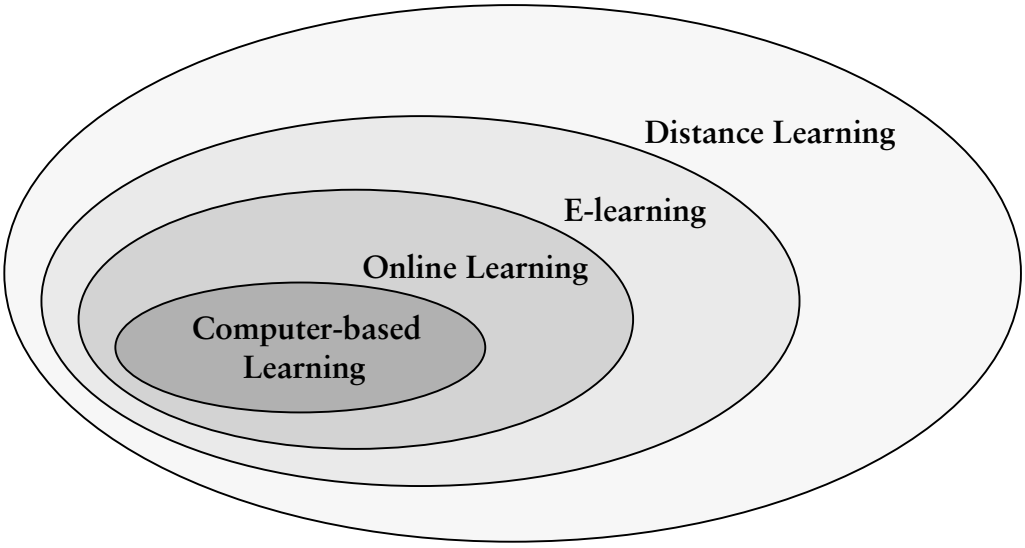
DEFINITIONS: E-LEARNING VERSUS ONLINE LEARNING

EXHIBIT 4: **NEW LEARNING TERMS**

e-Learning = Technology-based Learning	**The term e-learning covers a wide set of applications and processes, including computer-based learning, Web-based learning, virtual classrooms, and digital collaboration.** We define e-learning as the delivery of content via all electronic media, including the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM. Yet, e-learning is defined more narrowly than distance learning, which would include text-based learning and courses conducted via written correspondence. For the purpose of this report, the term e-learning is used synonymously with technology-based learning. Terms like e-learning, technology-based learning, and Web-based learning are defined and used differently by different organizations and user groups. Moreover, use of these terms is constantly changing, as the world of e-learning evolves.
Online Learning = Web-based Learning	**Online learning constitutes just one part of technology-based learning and describes learning via Internet, intranet, and extranet.** Levels of sophistication of online learning vary. A basic online learning program includes the text and graphics of the course, exercises, testing, and record keeping, such as test scores and bookmarks. A sophisticated online learning program includes animations, simulations, audio and video sequences, peer and expert discussion groups, online mentoring, links to material on a corporate intranet or the Web, and communications with corporate education records. In this report, the term online learning is used synonymously with Web-based learning or Internet-based learning.
e-Training = Corporate e-Learning	We use the term e-training to describe corporate training conducted via e-learning.

Source: WR Hambrecht + Co

EXHIBIT 5: **SUBSETS OF DISTANCE LEARNING**



Source: WR Hambrecht + Co

EXHIBIT 6: **SYNCHRONOUS VS. ASYNCHRONOUS LEARNING**

Synchronous Course Delivery	**Synchronous learning stands for a real-time, instructor-led online learning event, in which all participants are logged on at the same time and communicate directly with each other.** Examples include virtual classrooms, audio/video conferencing, Internet telephony, and two-way live satellite broadcasts of lectures to students in a classroom.
Asynchronous Course Delivery	**Asynchronous learning describes a learning event in which people cannot communicate without time delay.** Examples are self-paced courses taken via Internet or CD-ROM, videotaped classes, streamed audio/video Web presentations, Q&A mentoring, online chats and discussion groups, and e-mail.

Source: WR Hambrecht + Co

For further reference, a glossary of e-learning terminology appears at the end of this report.

KEY TRENDS – THE END OF LEARNING AS WE KNOW IT

"Online learning is not the next big thing; it is the now big thing."

Donna J. Abernathy, Editor of Training and Development, 1999

Branding: quality is key. With new content providers, technology suppliers, and service vendors emerging on a weekly basis, it is becoming more difficult for corporations to decide which training provider to choose. Quality, price, and sophistication of courses and technology vary widely. Today, a corporate training department that wants to purchase an online course on leadership, for example, has no efficient means to compare dozens or even hundreds of leadership courses from different vendors. Low market transparency and limited knowledge of e-learning products will likely represent serious challenges for corporate customers in the next several years. We believe companies will increasingly prefer the "safe choice" and retain providers with established brand names. Brand is and will continue to be the most important factor influencing the competitive landscape. Corporate buyers will be willing to pay a premium for a quality product to avoid even costlier mistakes. E-learning providers are currently addressing the main factors constituting a brand, such as quality, consistency, competency, reputation, and a loyal and recognized customer base. We believe that the players that successfully create a brand that implies trust with corporate buyers in 2000 and perhaps the first half of 2001 will be the winners in this market.

Traditional training companies adding the "e" to learning. Heavily classroom-learning focused players, such as Provant, DeVry, New Horizons Worldwide, ExecuTrain, Global Knowledge Network, and SMG, have been adjusting their strategies and moving quickly into the hot technology-based training market to secure a piece of the pie. Companies that do not enter the e-learning business now will become footnotes in the competitive landscape. Traditional content providers are facing the problem of deciding how much of their product line should remain in c-learning and how much should be moved into e-learning, reflecting the change in learning habits of their customers. While only about 20% of corporate training took place electronically in 1999, the number is estimated to rise to 40% by 2003.[7] This development mirrors the dramatic change in revenue sources of major players between 1997 and 1999. Until last year, on-site training accounted for the lion's share of revenues for most traditional c-learning companies. For those who decided to test new waters with both feet, however, revenues from online training have caught up quickly and should rise further.

One-stop shopping becoming all the rage, as importance of value-added services rises. As technology-based training becomes an increasingly popular method of delivering training courses, customer priorities are shifting away from stand-alone training courses to more comprehensive and convenient training solutions. One factor driving the demand for value-added services is that vendors sell increasingly complex e-training programs, which require more assistance with integration and implementation. According to a survey conducted by IDC, approximately 75% of corporate training managers acknowledge that value-added services play an important role in selecting an external training provider. Services which currently dominate demand are custom curriculum design and development, pre- and post-training mentoring and support, training effectiveness analysis, reporting and tracking tools, and advisory services on how to integrate new e-training solutions into an organization's education strategy. Training vendors are now responding by creating "enterprise training management solutions" that offer a full suite of products and services ranging from initial skills-gap analysis, course development, assessment, and delivery, to course registration, tracking, and hosting.

Consolidation activity accelerating. High fragmentation and long course development cycles make the e-training industry ripe for consolidation. While the "not me" mentality is still widespread among players in the industry, it is clear that independence may become too costly. Small size not only makes for inefficient course production but also prevents creating and capturing brand recognition and market share

quickly enough, a critical factor to win the race for market leadership. Another reason for accelerating M&A activity is the increasing tendency of corporate customers to satisfy all their training needs with one integrated provider. We expect to see more training vendors buying their way into skills and capacities they do not possess to be able to offer a complete learning solution. As competitors determine customer needs and refine their strategies, there will be more movement and positioning in the emerging e-learning market in the next several years.

E-learning partnerships are increasingly common. A lot of players are not willing to jump on the M&A bandwagon so early in the e-learning game. Instead, publishers of content are entering into strategic alliances and partnerships with education technology vendors, training services suppliers, or other content providers to enhance their product offerings, expand their distribution channels, explore new market segments, and capture a larger share of the fast-growing IT and soft skills training markets. Others team up with learning portals or even diversified ecommerce sites, leveraging their distribution capabilities in order to reach a broader audience. Since partnerships are critical in growing an Internet business, we should see many more of them in the year ahead. However, part of the value of a partnership is its exclusivity. Currently all the players appear to be partnering with each other. Partnerships that are easily replicable do not necessarily carry a significant value proposition.

Outsourcing: slowly but surely. An increasing number of companies are outsourcing part or all of their training activities to outside consulting firms or training companies in order to reduce their overall education training and administration costs. In 1999, 24% of all corporate training was outsourced, with IT training making up the largest share by far, accounting for 63% of the total.[8] However, with only 5% year-over-year growth, the trend towards outsourcing training is moving more slowly than expected, most likely because of the lack of quality content in the market. A study conducted by Training Magazine in the fall of 1999 even concluded that the trend towards outsourcing does not seem to exist. We view this as only a temporary pause until supply and demand for training content, technology, and services are more balanced. Competitive pressures and cost-cutting should force corporations to continue outsourcing their training activities, leading to the double-digit growth rates we have seen in previous years.

Competition should pick up. We anticipate competition in the corporate e-training market to heat up over the next few years, especially in the IT training industry, where lack of customized and high-quality content is not such an issue. Strong market growth and relatively low barriers to entry are attracting new market entrants in both product segments (soft skills and IT training), including competitors from related business areas such as the consulting industry. As new players appear on the scene and more enterprises outsource their training activities, we expect training suppliers to compete more vigorously for market leadership on the basis of brands. We also think that, in this early-stage market, prices for brand products will be relatively unaffected by the battle for market share and may even increase.

World of training is converging. The trend towards convergence in corporate training can be observed in different areas: 1) Since corporate customers no longer want to employ several different content, services, and technology providers to meet their educational needs, training companies have started to play on all three fronts; 2) Many IT and computer-training vendors are expanding their product lines with management and soft skills training, while soft skills training providers are eyeing the technical arena; 3) A number of major corporations have started to centralize their training operations, which entails shutting down their stand-alone IT training departments and integrating them into their core corporate training groups; and 4) Corporate trainers report that e-learning and c-learning are blending rather than one ruling out the other.[9] That is, the strongest use of online learning seems to be an extension rather than a replacement for classroom learning.

Development cycles will collapse. Not too long ago, content developers had four-to-six months to create an average two-hour learning program. Increasing competition and the velocity of the new economy no longer allow e-learning companies to spend six months or even six weeks on the development of a course. In the IT and software industries, for example, R&D cycles have accelerated with staggering speed, and user software has been commoditized. Similar developments can be expected in

the e-learning industry. Development cycles are predicted to shorten by 20% every year to two or three weeks by 2004.[10] This imperative will drive more template-based designs and fewer custom graphics. Learning objects will be created in smaller chunks and reusable formats. As a consequence, the industry will become more efficient and competitive.

Technology making quantum leaps and standards emerging. Technology infrastructure, especially for bandwidth, varies widely in corporate America. Lack of compatibility between existing learning technologies and current IS infrastructure is one of the main barriers to adopting Web-based training. We are convinced that the move to defined, open standards is crucial to the continuing successful adoption of e-learning, especially as it begins to transition beyond early adopters into the rapid growth phase of the market. Authoring tools will need to operate across different platforms and communicate with other tools used to build learning systems. Content and courseware must be reusable, interoperable, and easily manageable at many different levels of complexity throughout the online instructional environment. Enterprise learning systems have to accommodate numerous and varied learner requirements, needs, and objectives. Corporate customers need to be able to easily track content created by multiple content providers through one training management system and search vast local or distributed catalogs of content to identify learning objects or modules on a particular topic. The race for education technology standards is on. Advances in a wide range of technologies supporting diverse education and training tasks are currently being made. Issues such as content interoperability, metadata tagging, and bandwidth are being addressed. But the industry still has some homework to do to create the flexible, adaptive, and integrated learning systems needed to push e-learning into the mainstream.

Market share of live Web-based course delivery expected to surge. Less than a third of all Internet-based training purchases currently include synchronous course delivery.[11] As new technological standards and increasingly robust and interactive e-learning solutions emerge, we expect to see the arena of live online collaboration move forward dramatically. One reason is people's desire to interact while learning. Students want to sense the online presence of their teachers and peers and to communicate with them in real-time. Once such technology is widely available and increasingly user-friendly, corporations are likely to make increasing use of virtual classrooms for employee training. Another likely reason for adoption is the cost efficiency and convenience provided by synchronous content delivery. Real-time collaboration technology offers many deployment opportunities beyond employee training. Traditional in-person meetings, such as executive briefings, new product roll-outs, client presentations, and sales force briefings, can be held online without loss of auditory/visual inputs and 360-degree interaction. We expect companies that offer easy-to-use online collaboration technology and integrate voice communication, content and application sharing, conferencing, instant messaging, and other collaboration tools supporting real-time interaction to enjoy strong growth in the next few years.

Stronger demand for "surrounds" of instructor-led classes should spur growth. One of the hottest growth areas in online learning is the creation of Internet/intranet meeting places ("surrounds") for instructor-led classes to provide community, communication, and supplemental materials online. An increasing number of educational institutions and corporations are utilizing online authoring and delivery systems to build surrounds supporting the learning process.[12] This new learning model facilitates studying, note taking, class discussions, and "catching up," all of which enhance classroom instruction. Surrounds also help to overcome anxiety and reservations, especially among older age groups, and build learner acceptance and familiarity with online learning. In our view, this step-by-step solution should make more learners willing to take pure Web-delivered classes, contributing to the rapid growth of the industry.

THE CORPORATE E-LEARNING MARKET – THE PIE IS BIG

E-learning is penetrating all areas of corporate training. In 1999, corporate America spent $62.5 billion on educating and training its workforce. At $3 billion, the technology-delivered corporate training segment occupied only a fraction of the total market, but has been growing rapidly (see Exhibit 7). Technology-based training solutions are changing the way corporations deliver training in nearly all segments of the business process. What started out with IT training has found its way into management, sales, customer service, and professional development training. The number of e-learning pilots conducted in the corporate world has increased dramatically over the last 2 years. In 1999, approximately 92% of large corporations implemented Web-based learning pilots.[13] A large majority of Fortune 500 companies today already uses some form of e-learning to deliver professional development and training to their employees.

Soft skills and IT training each account for 50% of training budgets, but IT training is leading in adoption of e-learning. The corporate training market is divided between two broad product groups: 1) business and soft skills training, encompassing areas such as general management, leadership, communication, team building, sales and marketing, human resources, and professional development; and 2) IT training, comprising application development tools, application software, and system infrastructure software. Both segments accounted for roughly half of the total domestic spending on training in 1999, as shown in the table below. However, of the $15 billion outsourced, almost two-thirds were invested in IT training. The stronger emphasis on IT training is even more striking in the e-learning segment, where growth of IT training has been surging ahead of soft skills, accounting for $2.3 billion, compared with $0.7 billion for soft skills education. Traditionally, content providers have specialized in either soft skills training or IT and desktop training. In recent months, we have observed these areas beginning to overlap, as soft skills training providers add IT training courses and vice versa.

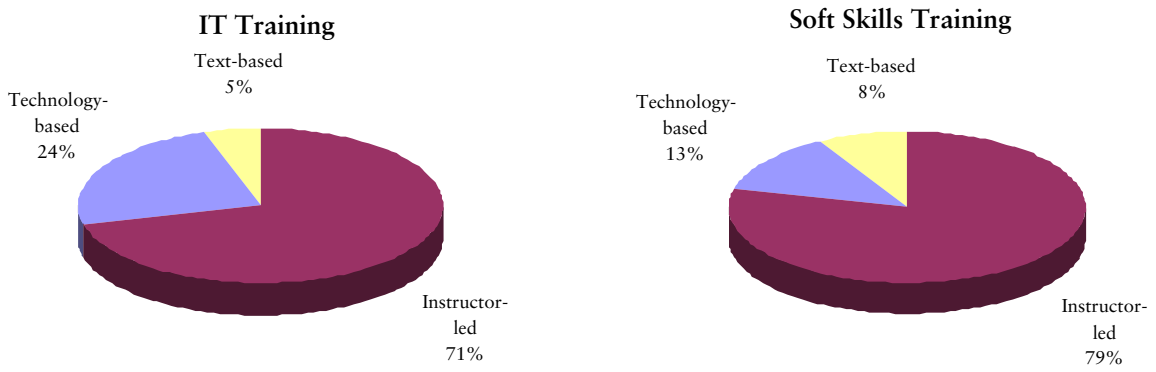
EXHIBIT 7: **CORPORATE TRAINING MARKET SIZE BY TRAINING PRODUCT AND DELIVERY METHOD IN 1999 ($ BILLION)**

	IT TRAINING	SOFT SKILLS TRAINING
Total Corporate Training Market	$31.19	$31.31
Outsourced Training Market	9.45	5.55
Technology-based Training Market	2.27	0.72
Web-based Training Market	0.87	0.20

Source: Training Magazine, International Data Corporation, and WR Hambrecht + Co estimates

75% of corporate training is still instructor-led. With approximately 75% market share, instructor-led training is still the delivery method of choice for both soft skills and IT training. The remaining 25% is delivered by various technologies – including the Internet, intranets, CD-ROM, satellite broadcast, and audio/video – and plain text.

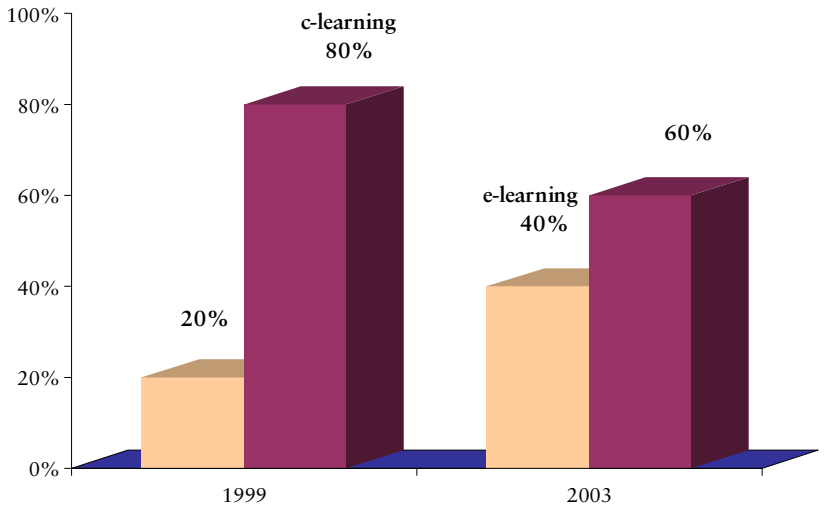
EXHIBIT 8: **TRAINING DELIVERY METHODS IN 1999**



Source: International Data Corporation, 1999

Traditional models are losing ground. While traditional classroom training accounted for the lion's share of corporate training in 1999, we see learning gradually tilting towards technology-based delivery. The cost effectiveness, flexibility, and convenience, as well as increased quality and availability of e-learning, should contribute to broader deployment of the new delivery medium among organizations worldwide. A survey conducted by Corporate University Xchange suggests that the overall share of classroom training will decline from 80%[14] to 60% by 2003, doubling the current share of electronic training delivery.

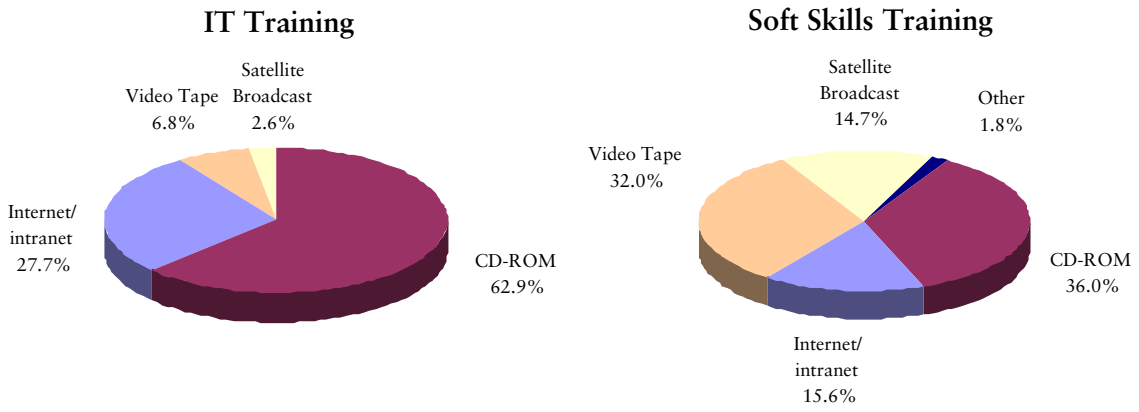
EXHIBIT 9: **E-LEARNING MARKET GAINING MARKET SHARE**



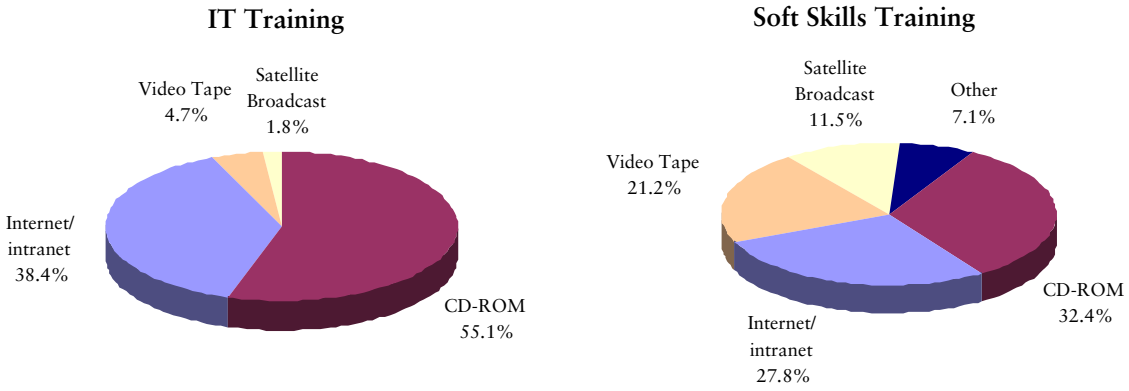
Source: Corporate University Xchange, 1999

CD-ROMs and video tapes are losing market share to the Internet. Of all technology-delivered training, the largest portion is currently made available on CD-ROM, followed by online training via corporations' internal computer networks and videotape (see Exhibit 10). These numbers should change rapidly, as Internet-based learning is gaining momentum, growing at 83% per year, according to IDC. We believe CD-ROMs – while growing slowly – will be an important delivery medium for several years to come because of their ease of use, the rich medium they provide, and their large storage capabilities. By 2001, however, the Web will likely become the largest electronic delivery vehicle for corporate training and, by 2003, should exceed the use of CD-ROMs by the factor of four.

EXHIBIT 10: **DELIVERY FORMAT MIX OF TECHNOLOGY-BASED TRAINING, 1998**



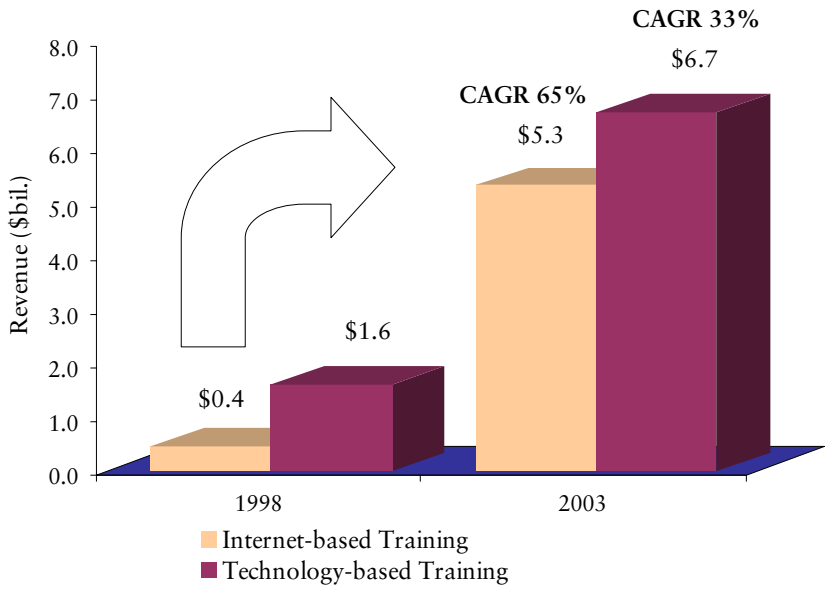
DELIVERY FORMAT MIX OF TECHNOLOGY-BASED TRAINING, 1999



Source: International Data Corporation, 1999

Dramatic growth of the Internet as delivery medium in IT industry. The rising power of the new learning paradigm can be demonstrated best in the IT industry. The information technology industry, an area that requires constant education of its workers, has exhibited the highest demand for online education in recent years. In 1998, Web-based training accounted merely for a quarter of e-learning in this sector. However, it should represent nearly 80% of all technology-delivered IT training by 2003, growing twice as fast as the overall e-training segment (see Exhibit 11). The gain in popularity can be explained by the fact that vendors are gradually overcoming obstacles such as limited course availability, lack of human interaction, uncertain quality of content, and lack of tools to monitor student progress.

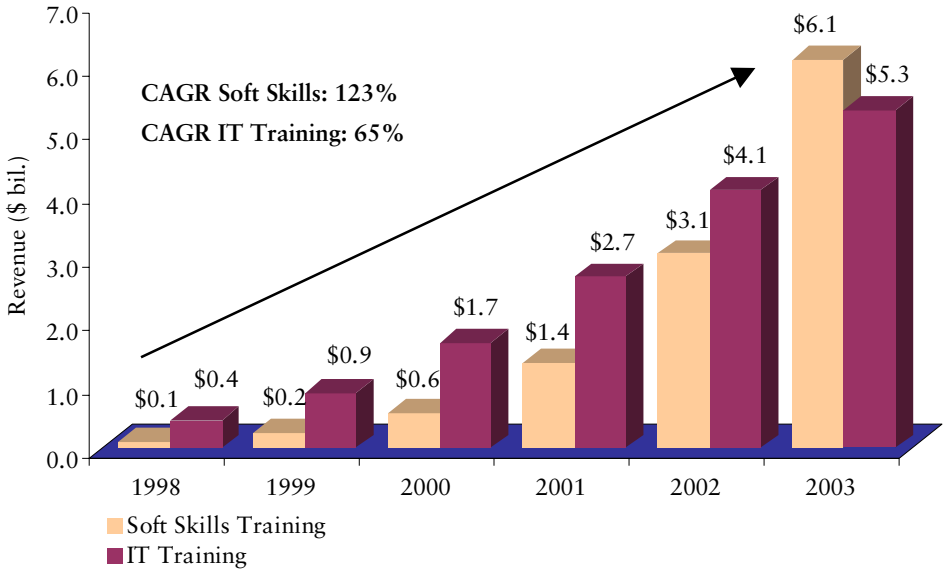
EXHIBIT 11: **GROWTH OF ONLINE VERSUS TECHNOLOGY-DELIVERED IT TRAINING**



Source: International Data Corporation, 1999

Web-based training market poised for staggering growth. More than 70 million people worldwide received some form of education via the Internet in 1999.[15] We believe this represents just the initial impact of online learning on education, training, and information exchange. In the not too distant future, training for virtually every professional job should be available on the Internet. Revenues from Web-based training are forecasted to climb from $550 million in 1998 to $11.4 billion in 2003 (see Exhibit 12). A stunning CAGR of 83% makes online education the hottest trend in corporate training.

EXHIBIT 12: **GROWTH OF THE U.S. INTERNET-BASED TRAINING MARKET BY TRAINING PRODUCT**



Source: International Data Corporation, 2000

Online soft skills training market growing twice as fast as IT training segment. While spending on IT and soft skills education has been split fairly evenly in corporate training departments, IT training has dominated the Web-delivered training segment since its emergence. Between 1997 and 1999, the IT online training market outpaced soft skills training fourfold. The Internet seemed to be a more natural medium for teaching desktop applications, networking, or Internet skills than for imparting business management or customer service skills. The limited availability of customized and quality content contributed to the slower growth of online soft skills training market. We expect the mix of IT and non-IT training to shift dramatically in the next three years. More existing soft skill courses will likely be reformatted for online use, vendors will likely increasingly adopt a "Web-first" delivery strategy, and more IT training providers will likely ramp up soft skills content offerings. Exhibiting a CAGR of 123%, the business and soft skills training segment is catching up quickly and should, according to IDC estimates, finally surpass IT training by 2003.

MARKET SEGMENTATION – CLAIMING A STAKE ON THE NEW FRONTIER

E-learning industry is in early phase of development and highly fragmented. The technology-based education sector is an immature, dynamic market that has not been well defined. With high fragmentation and low transparency, it shows all the characteristics of a very young market. The global e-learning industry comprises approximately 5,000 participants offering every imaginable method of e-learning. The vast majority of e-education companies are private. No single competitor in the e-training market accounts for 5% market share or more. Recognizing their inefficiencies, market participants have started to consolidate.

Intensity of competition low. E-training vendors, especially in the soft skills segment, have experienced little direct competition so far. The explanation for this phenomenon is threefold: 1) demand for e-learning is tremendous; 2) business strategies and target groups of market participants vary widely, and there is little overlap in their product lines; and 3) transparency and information flow in the market are still low. Training companies generally focus on their clients' needs and many have little knowledge of what their competitors are doing. In many cases, they do not even know who their potential competitors are.

E-training market rapidly transforming and segmentation just beginning. Across the country, training companies are rushing to stake out territory on the electronic frontier. The shape of the just emerging industry is changing monthly, as training providers are trying either to find a defensible position in one of the existing market segments or create new ones. We expect five market dynamics to contribute to the transformation of the e-learning industry in the next several years:

- emergence of new Internet technologies and training delivery methods
- innovation of new learning products and value-added services
- compression of research and development cycles
- acceleration of consolidation activities and formation of partnerships
- entrance of new competitors and emergence of market leaders

Content, Technology, and Services are the three major market segments. The emerging e-learning market already shows a high degree of complexity, which could allow us to break it up into 50 or more market segments. However, three general market segments currently exist that capture the general trends of the industry: Content, Technology, and Services (see Exhibits 13 and 15).

EXHIBIT 13: **E-LEARNING MARKET SEGMENTS**

CONTENT	KEY PLAYERS
Content providers author and publish intellectual property that may use a variety of training delivery methods and media. This segment includes customized and off-the-shelf courseware, synchronous and asynchronous course delivery, linear and branched content, and complex multimedia simulations for soft skills and/or IT training.	**Pure online plays – Publishers:** SmartForce, Ninth House Network, Teach.com, DigitalThink, NETg, Cognitive Arts, SMGnet, SkillSoft, Internal and External Communication (IEC)
Certain e-learning vendors license content from large brandholders among academic institutions or professional associations and develop libraries of online classes targeting the B2B, B2C, and post-secondary education markets.	**Pure online plays – Licensers:** Pensare, UNext.com, eMind.com, University Access
Several publishers of content have started to add services, such as custom curriculum design, skills assessment and testing, strategy and development consulting, program implementation and integration support, coaching and mentoring, training effectiveness analysis, and hosting, to their product offerings.	**Traditional classroom training companies:** Provant, New Horizons Worldwide, Learning Tree International, DeVry, ARIS Corporation, Franklin Covey, Global Knowledge Network, ExecuTrain

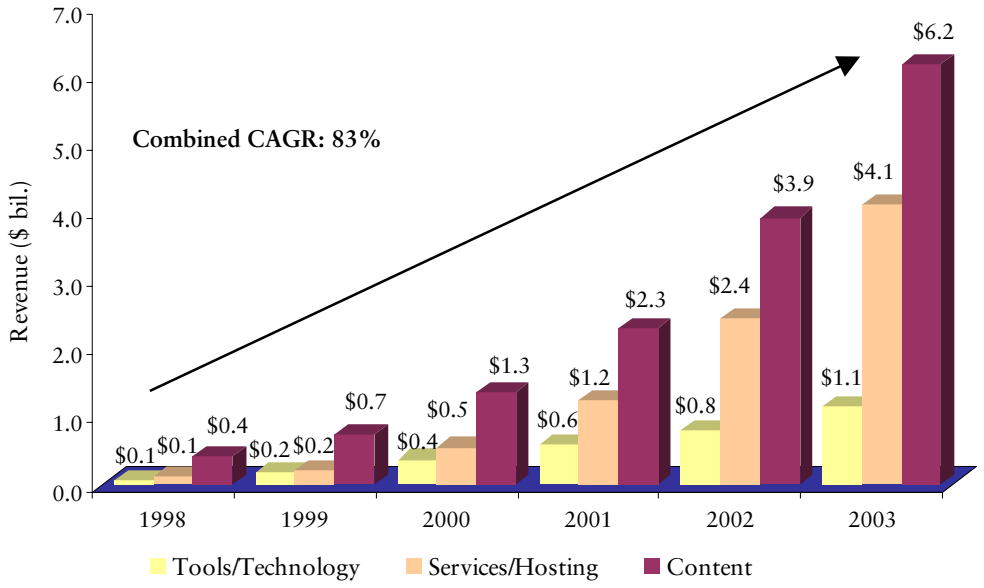
TECHNOLOGY	KEY PLAYERS
Technology vendors provide creation and capture tools, enterprise systems, and learning-specific hardware enabling the creation, deployment, delivery, and management of technology-based training.	**Learning Management Systems & Authoring Tools:** Saba Software, Docent, Click2learn.com, WBT Systems, Lotus Development Corporation, Teamscape, Pinnacle Multimedia, LearningByte International, Macromedia, EduNeering
Within these three technology segments, the education technology market includes companies offering one or more of the following products: authoring and Web publishing tools, capture and edit tools, training management and administration systems, ERP systems, knowledge management systems, performance support systems, collaborative software & virtual classroom technology, distribution hardware, interaction hardware, audio/video streaming and conferencing technology, testing and assessment tools, simulation tools, and other enabling technologies.	**Virtual Classrooms & Conferencing Technology:** InterWise, Centra Software, LearnLinc Corporation, One Touch Systems, PlaceWare

SERVICES	KEY PLAYERS
Service providers offer a variety of learning-related services, which we have categorized in three groups: portals, learning service providers (LSPs), and other professional services.	
Portals provide consolidated access to learning and training from multiple sources by aggregating, hosting, and distributing content. A number of portals operate online communities, either as stand-alone learning communities or in combination with course offerings. Certain content providers and tool companies have launched portals in addition to their original core business. Most of the distributors and communities target other market segments, such as the post-secondary and continuing education markets, as well.	**Portals & Communities:** Click2learn.com, Headlight.com, TrainingNet, KnowledgePlanet.com, Learn2.com, eMind.com, SmartPlanet.com, HungryMinds.com, Pro2Net, University.com
LSPs, a specialized type of ASP, offer learning and content management services, training delivery software, and/or other enabling technologies and services on a hosted/rental basis via diverse business models. Categories of LSPs also include providers offering assessment and testing services, certification and degree granting, online tutoring and mentoring, Internet-based collaboration services, and media production and delivery services.	**LSPs:** Eduprise.com, KnowledgePlanet.com, Infonautics, Knowledge Navigators, MindLever.com **Certification & Testing Services:** CyberStateU.com, ProsoftTraining.com, HyCurve, Brainbench, MeasureUp, Virtual University Enterprise
Other professional services include contract content developers, consultants, Web integrators and hosts, and network and IT service providers.	**Other Services:** RWD Technologies, LearningByte International, Eloquent

Source: WR Hambrecht + Co

Content is the largest market segment, but services is the fastest growing. Among the three market segments – content, technology, and services – market share and growth rates are expected to vary considerably. Content, growing at a CAGR of 74%, should continue to be the largest segment in the training market, according to IDC estimates. By 2003, it is predicted to account for $6.2 billion in revenues, up from $735 million in 1999. However, its overall market share is expected to decline from 66% in 1999 to 54% in 2003, giving up territory to the services segment. Training services, such as systems integration, needs assessment, hosting, maintenance, and online mentoring, are forecasted to be the fasted growing component of the market, growing at 111% annually. Within the next three years, services are expected to double their current market share, reaching 36% in 2003, or $4.1 billion in revenues (see Exhibit 14). The smallest element of the training market consists of delivery technologies, including training management systems, authoring tools, add-on tools, collaborative software, and virtual classrooms. The technology segment is expected to have an annual growth rate of 80% through 2003.

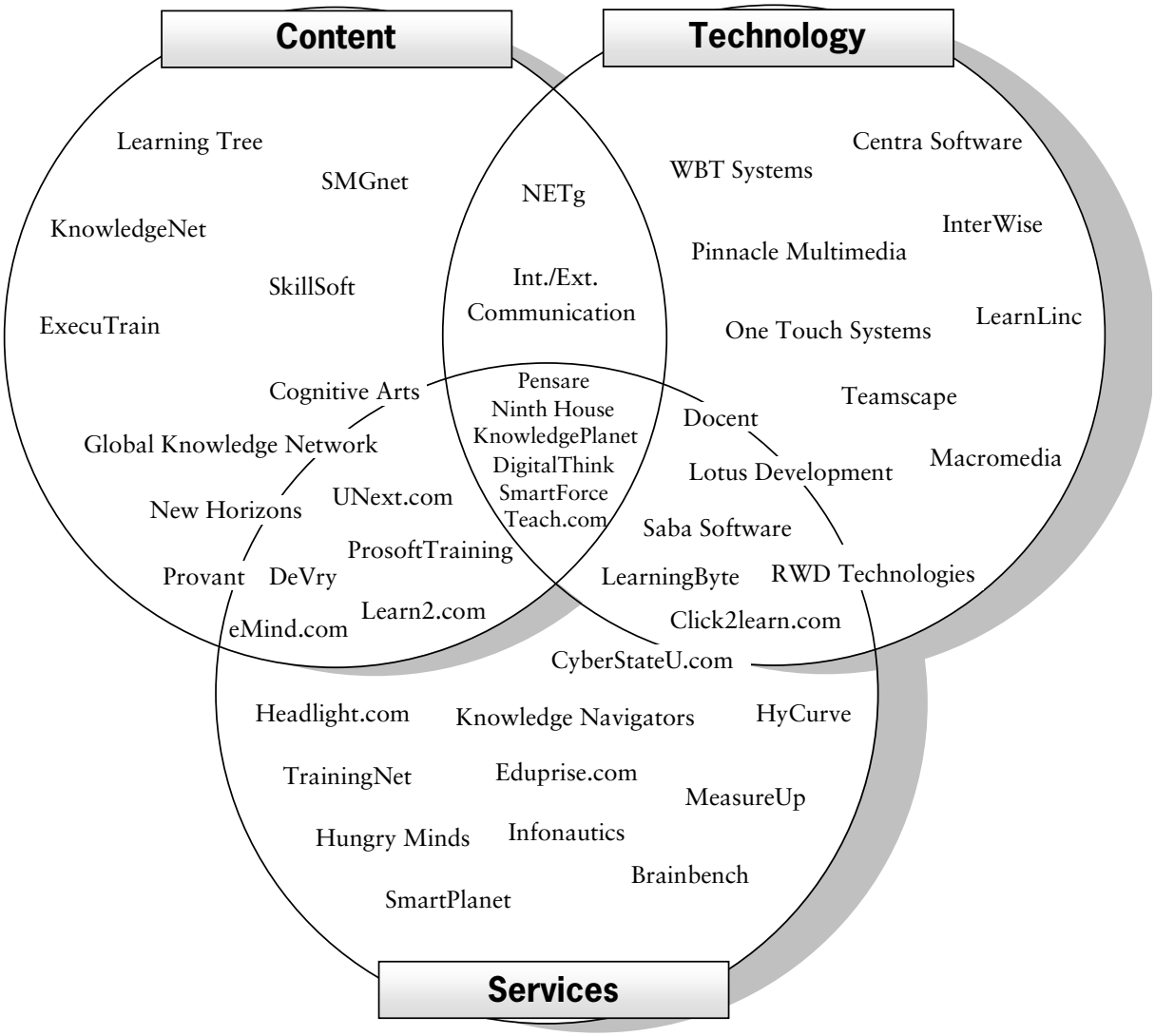
EXHIBIT 14: **GROWTH OF THE U.S. INTERNET-BASED TRAINING MARKET BY MARKET SEGMENT**



Source: International Data Corporation, 2000

Lines between the three major segments already blurring. Many training providers have begun to branch out into other areas in response to the needs of their customers. Click2learn.com, the authoring tools and learning management systems provider, now aggregates and sells third-party online courses as well. Learn2.com, originally an e-learning portal and community, moved into content production through last year's acquisition of ViaGrafix. SmartForce expanded from content into community portals by acquiring Scholars.com. eMind.com launched its operations as a blend between a content publisher and a distributor of online courses. IEC custom designs custom content and also develops training management and performance support systems. LearningByte International complements its e-learning consulting and content development services by marketing authoring software. In an effort to offer a value-added, complete e-learning solution, certain publishers and resellers of content, such as Pensare, Ninth House Network, DigitalThink, SmartForce, Teach.com, and KnowledgePlanet.com have begun to integrate technology, communities, hosting, and/or other services into their original product lines. We expect to see more "border hopping" in the short term and reiterate that the definitions of training market segments are changing as rapidly as the landscape of the entire education industry.

EXHIBIT 15: **CORPORATE E-LEARNING UNIVERSE**



Source: WR Hambrecht + Co

E-learning providers competing with traditional c-learning vendors. In addition to facing "intruders" from other e-learning segments, online plays compete with mature classroom training and performance improvement providers that are just beginning to discover the world of e-training. The question is how quickly can traditional on-site training providers expand or refocus their operations to garner market share in the e-learning space. We are convinced that vendors that miss the market and cannot offer an e-training opportunity shortly will be left behind. C-players to watch are Achieve Global, ARIS Corporation, Development Dimensions International, DeVry, ExecuTrain, Franklin Covey, Global Knowledge Network, Learning Tree International, New Horizons Worldwide, and Provant, all of which are in different stages of getting their feet wet in the Internet. What will likely occur is the merger of "clicks" with "bricks," as in many other industries. Traditional c-learning companies may get frustrated with their own attempts to enter this market and decide to acquire an online presence for time-to-market advantage. Alternatively, e-learning companies that have highly valued public currency may in fact go shopping for a physical presence and more content to enhance their revenue streams.

Lots of portals appearing on the e-learning scene. The learning portal game is new, but exploding. We estimate that in 1999, about 100 learning portals went into business claiming to be *the* primary destination for learning on the Internet. Barriers to entry are low, since the cost of building an online portal is relatively small. Demand exists, since content providers need portals as partners to expand their distribution capabilities and customers are hungry for electronic training delivery. For a new portal, it is key to aggregate as much content as possible in the shortest amount of time in order to gain visibility and market share. We predict that new market entrants will come up with more diverse business models and increasingly offer value-added services to differentiate themselves from the competition. In particular, a number of portals will likely add authoring and collaborative tools to their product mix. In 2000, we expect to see even more new market entrants than in 1999, causing stiffer competition and beginning consolidation. While more competition is healthy, only so many Amazon.coms can and will survive. And, as with Amazon, first movers with established brand names should have a competitive advantage. Within the next 12 – 18 months, the learning portal war may well be over.

VALUATION – COMPARING INCOMPARABLES

Variety of business concepts and lack of market depth complicate comparative valuation analysis. Even though players within each of the three segments may look very much alike, a closer look reveals significant differences with respect to business concepts, target groups, and strategy. It is difficult to find two e-learning companies that do the exact same thing. Their products, services, partners, and customers vary so widely that an attempt to compare them in a meaningful way is a challenge. In our analysis, we have separated e-learning content companies from traditional c-learning vendors because their business models differ with respect to growth rates, scalability of revenues, cost and product pricing structures, competitive situation, deployment of technology, etc. On the other hand, we group technology and service providers together since their products and services often overlap.

E-learning companies trade at revenue multiples seven times higher than c-learning companies. Our analysis reveals significant differences in valuation between e-learning and c-learning companies. While the e-learning-focused companies trade at a median of 10.2 times calendar year (CY) 2000 revenues, traditional c-learning companies trade at 1.5 times CY 2000 revenues. The market obviously perceives significant differences in future revenue growth potential between different business models within the B2B education industry. This may be explained by both the differences in scalability between business models and secular shifts in customer demand. Moreover, e-learning companies do not face the challenge of changing their business strategy. Most brick-and-mortar companies, on the other hand, are currently transforming their business models to reflect the growing demand for online learning, which poses certain risks and uncertainties with respect to their future revenue streams and, thereby, valuation.

EXHIBIT 16: **COMPARABLE COMPANY ANALYSIS**

Corporate e-Learning Universe

($ in millions, except per share data)

Company Name	Ticker	Price 2/28/00	52-Week High	52-Week Low	Market Value	Preferred	IBD	Cash	Enterprise Value [1]	Revenues LTM	Revenues CY2000E	EV / Revenues LTM	EV / Revenues CY2000E	Price / Revenues LTM	Price / Revenues CY2000E	Gross Margin LTM
e-Learning Focus: Content																
DigitalThink, Inc.	DTHK	$37.13	$38.50	$20.00	$1,164.8	$0.0	$0.0	$23.3	$1,141.5	$7.2	NA	159.0x	NA	162.3x	NA	49.5%
SkillSoft Corporation	SKIL	16.75	21.00	13.75	210.6	20.7	0.5	0.5	231.3	2.4	NA	97.6	NA	88.8	NA	79.0%
SmartForce, PLC	SMTF	43.25	47.50	8.56	2,240.4	-	6.7	69.5	2,177.5	197.8	154.8 [2]	11.0	14.1	11.3	14.5	85.0%
Average					**$ 1,205.3**		**$ 2.4**	**$ 31.1**	**$ 1,183.4**			**89.2x**	**14.1x**	**87.5x**	**14.5x**	**71.2%**
Median					**$ 1,164.8**		**$ 0.5**	**$ 23.3**	**$ 1,141.5**			**97.6x**	**14.1x**	**88.8x**	**14.5x**	**82.0%**
e-Learning Focus: Technology & Services																
Caliber Learning Network, Inc.	CLBR	$6.75	$9.50	$1.06	$83.4	$51.7	$14.1	$15.3	$133.8	$26.0	$68.2	5.1x	2.0x	3.2x	1.2x	45.1%
Centra Software, Inc.	CTRA	33.13	38.50	25.00	770.2	-	0.7	7.9	763.0	8.6	NA	88.8	NA	89.6	NA	80.0%
Click2learn.com	CLKS	16.56	22.94	3.66	243.8	-	-	19.5	224.3	34.7	42.8	6.5	5.2	7.0	5.7	53.7%
Infonautics, Inc.	INFO	9.81	17.38	3.63	115.6	-	3.5	2.5	116.6	22.0	NA	5.3	NA	5.3	NA	69.8%
Learn2.com, Inc.	LTWO	6.00	10.00	2.72	306.0	-	0.5	11.5	294.9	13.6	30.0	21.7	9.8	22.6	10.2	76.2%
ProsoftTraining.com	POSO	17.25	19.25	2.00	248.1	-	3.6	1.0	250.7	10.5	21.3	23.9	11.8	23.7	11.6	5.8%
RWD Technologies, Inc.	RWDT	8.75	19.25	6.41	126.8	-	1.1	28.2	99.7	124.4	NA	0.8	NA	1.0	NA	19.3%
Average					**$ 270.5**		**$ 3.4**	**$ 12.3**	**$ 269.0**			**21.7x**	**7.2x**	**21.8x**	**7.2x**	**50.0%**
Median					**$ 243.8**		**$ 1.1**	**$ 11.5**	**$ 224.3**			**6.5x**	**7.5x**	**7.0x**	**7.9x**	**53.7%**
Average e-Learning Companies					**$ 551.0**	**$ 7.2**	**$ 3.1**	**$ 17.9 #**	**$ 543.3**			**42.0x**	**8.6x**	**41.5x**	**8.6x**	**56.3%**
Median e-Learning Companies					**$ 245.9**	**$ -**	**$ 0.9**	**$ 13.4 #**	**$ 241.0**			**16.4x**	**9.8x**	**16.9x**	**10.2x**	**61.8%**
c-Learning Focus																
Aris Corporation	ARSC	$15.50	$15.75	$4.94	$195.8	$0.0	$0.0	$10.5	$185.3	$118.0	$133.0	1.6x	1.4x	1.7x	1.5x	49.1%
DeVry, Inc.	DV	17.75	31.88	15.63	1,235.1	0.0	20.0	39.8	1,215.3	469.2	563.8	2.6	2.2	2.6	2.2	43.7%
Franklin Covey Co.	FC	8.13	13.31	5.94	164.3	76.8	81.4	26.4	296.1	558.6	NA	0.5	NA	0.3	NA	66.2%
Learning Tree International, Inc.	LTRE	27.81	33.88	6.00	602.0	0.0	0.0	45.0	557.0	193.6	200.9	2.9	2.8	3.1	3.0	61.3%
New Horizons Worldwide, Inc.	NEWH	15.06	20.25	10.94	144.0	0.0	12.1	4.3	151.8	111.5	148.8	1.4	1.0	1.3	1.0	54.9%
Provant, Inc.	POVT	7.06	26.00	6.88	131.4	0.2	54.5	7.4	178.8	184.4	258.9	1.0	0.7	0.7	0.5	58.8%
Average					**$ 412.1**		**$ 28.0**	**$ 22.2**	**$ 430.7**			**1.6x**	**1.6x**	**1.6x**	**1.6x**	**55.6x**
Median					**$ 180.0**		**$ 16.0**	**$ 18.4**	**$ 240.7**			**1.5x**	**1.4x**	**1.5x**	**1.5x**	**56.9x**
Total Average					**$ 498.9**		**$ 12.4**	**$ 19.5**	**$ 501.1**			**26.9x**	**5.1x**	**26.5x**	**5.1x**	**56.1x**
Total Median					**$ 227.2**		**$ 2.3**	**$ 13.4**	**$ 241.0**			**5.2x**	**2.5x**	**4.2x**	**2.6x**	**56.9x**

(1) Enterprise value is defined as market value plus interest-bearing debt, plus minority interests, plus preferred stock, less cash and cash equivalents.

(2) Along with a major strategy shift in late 1999, SmartForce changed its revenue recognition model. As a result of this accounting change, revenue estimates for 2000 do not reflect the true revenue growth rate. Before the change in revenue recognition, CY 2000 revenues were estimated at approximately $245 MM.

SOFT SKILLS TRAINING INDUSTRY – CONTENT IS KING

Tremendous opportunities, but lack of high-quality content is hindering growth. The online training market for soft skills is estimated at $560 million in 2000. With 3-digit annual growth rates, it is expected to top the IT training market within 3 years. The large opportunity in the soft skills training industry stems from the variety of skills that can be trained and improved. Even though demand for high-quality Internet-delivered content is booming, suppliers cannot deliver the breadth of desired content at this time. This inability to deliver will likely keep the market share for instructor-led training artificially high in the short term.

Long development cycles call for consolidation. One reason for the lack of quality Web-based content for soft skills training is that the industry is characterized by longer research and development cycles than the IT training industry. Time-to-market is particularly long for complex, media-rich, highly interactive, and/or customized solutions. Moreover, many e-education providers are tiny businesses that do not have the development capacities to bring products to market more quickly. Adding to the problem are serious challenges of recruiting skilled labor. As a consequence, many publishers of courseware still have a very limited library of training titles. However, time-to-market is critical to capturing a larger market share. This is even more true for an Internet business. Although some suppliers already employ third-party developers, we doubt many competitors will be able to grow fast enough internally to secure a sizable piece of the pie.

Custom-developed content in high demand. Approximately 40% of training budgets is spent on customized training products, leaving the remaining 60% to off-the-shelf products.[16] Training areas enjoying the highest increase in demand are professional development, customer service, team building, leadership, and communication. Despite accounting for a smaller share of the market, demand for custom content is rising more quickly than demand for off-the-shelf products. In particular, large corporations value customized, high-quality training as a key differentiator in competition. The true market opportunities for custom content are still untapped, as many corporations hesitate to outsource a larger proportion of their training due to the lack of targeted content and custom training services in the market.

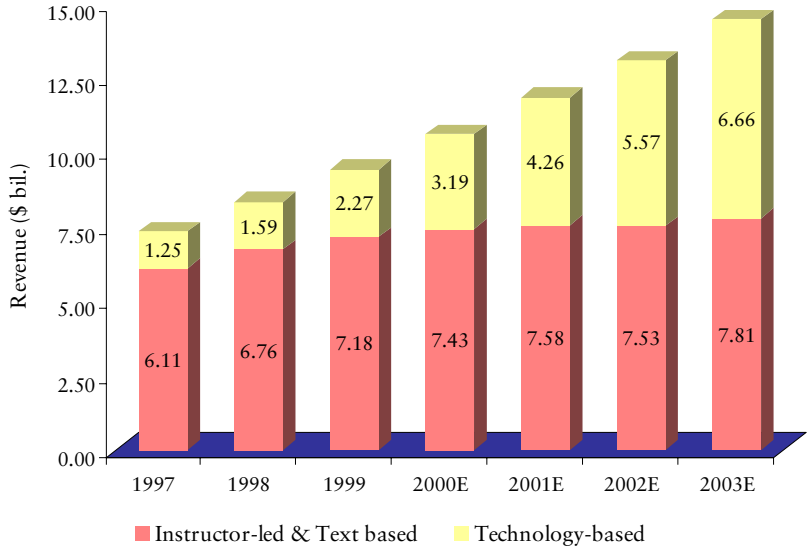
Partnerships with universities on the rise. A recent development in the soft skills training space is the growing number of partnerships between e-learning vendors and academic institutions to create "virtual universities" online. These universities are intended to offer higher education courses, corporate training, and certification programs. Two e-learning players leading this initiative are Pensare, partnering with Harvard Business School Publishing, Duke University, Wharton School of Business, and University of Southern California, and UNext.com, collaborating with Stanford University, Columbia Business School, University of Chicago, and the London School of Economics. This business model combines two groups of market participants with mutual interests. Academic institutions, the major producers of branded educational content, recognize the need to offer and distribute their degree programs online, but generally do not have the technical or financial capacity. E-learning companies, on the other hand, see the opportunity of building a brand more quickly and less expensively using the "Intel inside" concept. As more competitors enter the market, we believe that accreditation of the new online universities and exclusivity of partnerships will be essential differentiators among e-learning competitors.

IT TRAINING INDUSTRY – FAST OUT OF THE GATE

Strong growth in IT training industry driven by rapid obsolescence of knowledge. Global spending on IT training was sluggish in 1998. This sluggishness could be attributed to slimmer training budgets, lack of major new product releases, decreasing cost of training courses, and increased outsourcing of the IS function. IDC predicts that in the next four years, the worldwide IT training market is poised for stronger growth, rising from $18.4 billion in 1999 to over $27.8 billion by 2003, which represents an average CAGR of 11%. The need to update employee skills in the implementation of complex technologies is one of the most important drivers of IT training. "Internet time" makes the delivery of timely and relevant IT training a more significant problem than ever before. It has become crucial for companies to train IT professionals before information is obsolete. Other factors fueling industry growth are the continuous introduction of new technologies and the release of new software products.

Market share of e-learning and instructor-led training is evening out. In 2000, the U.S. IT education and training market is projected to be a $10.6 billion industry, accounting for approximately 53% of the global IT training market. Technology-based training will make up 30% of the total, or approximately $3.2 billion. Whereas instructor-led training barely budges with a CAGR of slightly more than 3%, technology-delivered training is prospering at more than 33% annually (see Exhibit 17). By 2003, e-learning is projected to be a $6.7 billion industry, with a 46% share of the overall IT training market.

EXHIBIT 17: **U.S. IT TRAINING REVENUE BY DELIVERY SEGMENT**

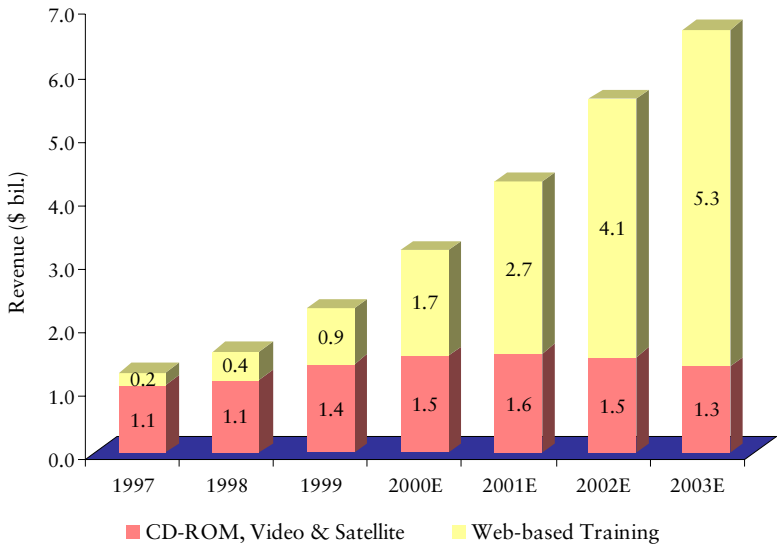


Source: International Data Corporation, 1999

Web-based IT training taking off. We expect to see significant changes in the delivery format mix in the years ahead. The days of CD-ROMs and videotape are numbered, as the Internet as training delivery medium is capturing virtually all the market growth. While CD-ROM training is stagnating and training via videotape is declining at an annual rate of over 18%, online training is exhibiting 56% incremental growth for 1999–2003 (see Exhibit 18). IDC projects that online learning will account for nearly 37% of the overall U.S. IT training industry in 2003, up from 9% in 1999. One of the primary influences is

bandwidth. In the corporate environment, bandwidth has vastly improved in the last few years, and is expected to continue as the adoption of switched Ethernet grows. DSL and cable modems to the home will likewise increase bandwidth to the home. Continued improvements in network infrastructure do not bode well for companies that rely exclusively on physical delivery of educational material and will facilitate the growth of Web-based training. Another reason for this surge is that many individuals seeking IT training are, by definition, comfortable with using technology, leading to less resistance to implementation and usage.

EXHIBIT 18: **U.S. TECHNOLOGY-BASED IT TRAINING REVENUE BY DELIVERY MEDIUM**



Source: International Data Corporation, 1999

Shortage of skilled IT professionals hampering growth. The worldwide lack of IT workers is a critical concern and is expected to continue in the new millennium. In the U.S., there is a current shortage of 722,000 IT workers, a number forecasted by IDC to reach 847,000 in 2002. Competition for the most talented employees causes inflation of salaries, IT project delays, and increasing employee attrition. Complicating matters, knowledge and skills necessary to be competent in IT advance just as rapidly as technology itself. Staying competent and learning continuously has become one of the most important issues of the IT workforce, creating huge opportunities for IT training providers.

Trend toward IT certification growing rapidly. The market for IT certification breaks down into vendor-specific programs, such as Microsoft's MCSE and MCP, Novell's CNE and CIP, and Cisco's CCNA, and vendor-neutral certification, such as the Computing Technology Industry Association's A+ and I-net+, ProsoftTraining's CIW, and HyCurve's Internet Professional programs. Whereas vendor-specific programs have dominated the market in previous years, the recently emerged vendor-neutral certifications are catching up quickly, as they provide a skill set covering various types of products and platforms from different vendors and, thereby, increase employee flexibility on the job. The number of IT certifications offered has exploded over the last two years. New programs, such as Linux and Internet certifications, are continuously emerging. We estimate that the total number of certifications available to IT professionals in 2000 will exceed 200. Certification establishes an independent, widely accepted standard, makes employee skills measurable, and eventually leads to higher productivity, which explains the high demand certification programs are enjoying. According to our estimates, corporate customers will spend approximately $1.5 billion for IT certification training and testing in 2000. We expect spending on certification programs to grow more rapidly than the overall IT training industry, averaging a CAGR of roughly 15% through 2003.

SCRUTINIZING ONLINE TRAINING – IS C-LEARNING GOING TO DISAPPEAR?

> *"What kind of [computer] network would make it possible to bump into someone on the way to class and make a new friend, to carry on a heated discussion after the end of the hour, to catch the professor's eye and exchange an instantaneous glance in which boredom or alertness is tacitly expressed?"*
>
> Andrew Feinberg, Ph.D., University of San Diego, 1999

Human interaction a critical component of professional development. We believe there are situations in which classroom training cannot be replaced. Certain content – because of its nature, relative value, or importance – is not suitable for technology-based delivery. While online training is especially well suited for the acquisition of IT skills, it has certain limitations in the arena of soft skills training. Strategy training, for example, still needs to be done face-to-face in most cases, since this area involves continuous give and take. Other educational content that does not translate well into a virtual environment is material requiring significant hands-on application, with a strong emphasis on peer review and collaboration. Examples include classes taken to improve writing, communication, or presentation skills, where the perception of eye contact, body language, facial expressions, as well as direct dialogue and sharing of experiences are necessary for the comprehension of the subject matter and the success of the course.

Not everyone is best served by electronic instruction. Certain groups of employees do not want to miss the "edutainment value" of a live experience and desire the total interactivity with a human trainer. Others are simply uncomfortable with computers. For a number of individuals, technology-based training is not the most efficient learning method, as their learning style is auditory or kinesthetic as opposed to visual. The classroom also provides guidance and structure. These elements are important for individuals who lack the motivation and confidence to succeed in a self-study-only program. These needs are currently best addressed in c-learning, but can and will likely be addressed in future e-learning projects as well.

Instructor-led training will continue to play a role in delivering information. We believe technology will be used to leverage and expand the reach of c-learning, rather than replace it completely. This applies especially to K-12 and post-secondary education. The efficient acquisition of knowledge is only a fraction of what going to college means. Face-to-face interaction with professors, living away from one's parents, and socializing with a diverse group of people also contribute to the educational experience.

Organizations have to decide when and how e-learning should be deployed. The question is not so much whether or not online education measures up to or poses a critical threat to classroom learning. Instead, educational institutions and corporations need to think about context-specific needs and make sure that, for a given set of learners, those needs are in fact being met.[17] In situations where the primary objective is the rapid, efficient acquisition of specific knowledge sets, we believe technology-based learning will be the method of choice. Increasingly, corporations will consider technology-delivered training whenever there are a large or widely dispersed number of employees, high costs of classroom delivery, high employee turnover, and/or the need for uniformity of content.

Shortcomings of e-learning? E-learning may require more dedication and discipline than c-learning. Frequently, it also does not yet yield the degree of interactivity and collaboration offered by classroom-based training. However, for many business professionals seeking a reputable continuing education, this is not the issue anymore. Many of them are happy to put up with the insufficiencies of distance learning in order to enjoy its unparalleled convenience. E-learning may not be perfect, but it is practical. Moreover, in the future, we see e-learning models being structured to bring measurable participation and results. While technology-based learning is unlikely to completely replace the college experience, it offers vast opportunities for corporate training and continuing education.

BUILDING BLOCKS FOR SUCCESS – WHO WILL BE THE WINNERS?

> *"…most of what people in the industry call "Web-based training" does not begin to use the true power of the Internet. Many interactive training vendors are missing the point of the Web and simply creating HTML versions of their CD-ROM-based training."*
>
> Ben Watson, SmartForce, 1999

First movers who manage to build a brand name quickly are becoming market leaders. First movers and market leaders are known by their brand recognition, market share, and revenue growth. To secure a leading position in the e-learning market, participants must provide a quality product, reach critical mass, and establish a national presence within a short amount of time. Industry players should also form strong partnerships and expand their product offerings to be able to offer one-stop-shopping solutions. A wider range of quality content and value-added services, combined with appropriate channel partners, is the recipe for developing a strong brand and solid client base, and capturing significant market share. We made the observation that corporate customers are relatively price-insensitive when it comes to high-quality training products. In addition, they do not tend to switch providers and technology easily once they have signed up. The brand loyalty of corporate customers, coupled with a first-mover advantage, should help successful e-learning providers build a strong market position. Competitive factors, such as quality content, proprietary technology, integrated services, well-established customer relationships, exclusivity of partnerships, and experience, should create significant barriers to entry. We anticipate leaders to emerge in all market segments within the next 18 months.

Successful e-training solutions must offer high level of interactivity. In our opinion, virtual collaboration between participants is the most important element of successful implementation of online education. The true power of the Web lies in its ability to create collaborative learning communities that introduce real-time human interaction.[18] However, reality is still far away from this vision. Of all training delivered via the Web in 1999, the percentage in which students interacted with other people online was only 36%, representing a *decline* of 14% from the previous year, according to Training Magazine. Considering that technical obstacles have diminished over the last two years, these numbers are alarming. Transforming education from a mechanical process into an exciting, interactive learning experience is one of the primary reasons for considering Web-based training delivery. We advise training vendors to take advantage of the full range of tools to create a dynamic online classroom with powerful interactive features that include the use of streaming media, personalized skills assessment, application exercises, case studies, simulations, video clips, role-playing, knowledge base access, peer and expert communities, virtual classrooms, online mentoring, discussion groups, and online chats. Interactive learning programs should not only lead to higher user retention, motivation, and completion rates but should also address most of the problems with online training discussed in the previous section. We are convinced that the ability to entice the learner will be a key differentiator among competitors.

Scalable business models should be more profitable in the long run. High-quality technology-based training courses, tutorials, and multi-media simulations are expensive and time-consuming to develop. To capture significant market share, it will be imperative for training vendors to leverage their branded content by making it scalable in terms of development, delivery technology, and/or distribution. We expect successful companies to emphasize the production of quality off-the-shelf content using template-based, reusable learning objects to speed up R&D. In addition, market participants who license their teaching products to organizations in volume, deploy a course delivery platform able to support millions of users, and utilize multiple and effective distribution channels should be able to enjoy an exponentially growing revenue stream and significant economies of scale. Thereby, these players not only benefit from reduced R&D cost per unit but also minimize time-to-market, which is a critical competitive factor in the fast-paced world of the Internet.

Global reach crucial for becoming a market leader in the e-learning business. This conclusion is based on two distinct developments: 1) Global firms, a customer group most e-training vendors are targeting, are beginning to show an inclination toward using large multinational training suppliers to meet their employees' training needs. They will be looking to achieve economies of scale and a global consistency in the quality and content of the training services being delivered. 2) The world is hungry for education made in America. U.S. educational institutions enjoy an excellent reputation worldwide, making America the number-one destination for foreign students every year. What if we could turn education into an export good delivered directly to desktops in Japan, France, or Canada? The market opportunities for corporate training and continuing education are huge. The largest market next to the U.S. is Europe; but Asia/Pacific, Canada, and a number of developing countries exhibit strong demand as well. Accelerating growth of Internet usage should boost the demand for online training solutions abroad. Many countries which were initially slow to adopt the Internet are catching up, with growth rates far exceeding those in the U.S. Between 1997 and 2003, the Web penetration in Western Europe and Asia/Pacific is projected to grow at a CAGR of roughly 40%.[19] Although U.S. training vendors are already scrambling to meet just domestic demand, we find it is not too early to develop and implement a global strategy. One of the advantages of running an Internet business is that it does not require maintaining offices around the world to have global reach. However, we feel that executing certain strategic acquisitions and implementing key partnerships will be necessary to secure a strong position in the worldwide market.

Offering a complete solution for enterprise-wide learning creates competitive advantage. The top three criteria corporations apply to select a training provider are quality content, training delivery media, and value-added services. Competitors eyeing the trendy one-stop-shopping idea cannot limit their offering to a series of training titles. Within the next few years, we expect content to provide less differentiation, since corporate customers are beginning to demand a more consultative approach to meeting their training needs. They will require the integration of off-the-shelf and customized content, business skills as well as IT training, delivery methods ranging from classroom- to technology-based training, and value-added services. We believe that vendors planning to offer a full suite of products and services will not always initiate large-scale internal expansions but will likely extend their product mix through acquisitions or partnerships with other providers. Training suppliers who manage to combine a number of key characteristics and launch innovative training models should have a powerful learning solution.

EXHIBIT 19: **CHARACTERISTICS OF A COMPLETE E-LEARNING SOLUTION**

1. Assessment and curriculum design and development	• Organizational and individual needs assessment • Setting competency standards of performance • Goal setting and incentives • Roadmap to educational success
2. Branded educational content	• Proven, high-quality intellectual capital • Timely, relevant, and consistent information • Keeping fast-changing content current, dynamic, and refreshed • Off-the-shelf and customized
3. Broad and easy access to information	• Anyone, anytime, anywhere, any subject • Multiple technology-based delivery methods • Synchronous and asynchronous • Enabling just-in-time training
4. Engaging user experience	• Rich multimedia experience • Realistic simulations and role playing • Video-based teaching and storytelling • Advice and explanations from experts/mentors • Animated case studies and examples • Interactive games, activities, and music
5. Regular reinforcement	• Personalized and/or real-time online mentors • Web-casts, interviews, live events • Practical exercises and application • Facilitated workshops and discussion groups • Desktop advice, special events, and updated learning opportunities • Weekly newsletters and relevant articles
6. Collaborative online communities	• Access to fellow learners, instructors, business leaders, and experts • Access to system knowledge base • Private company and global communities
7. Centralized tracking and administration	• Easy and automatic knowledge management • Tools to evaluate progress of individuals or groups • Assessment metrics to pinpoint employee needs and goals • Measuring return on investment
8. Scalable Technology	• Leveraging existing open industry standards • Scalable to any size enterprise • Flexible technology to include groups of workstations or the entire organization • Easy integration with client's internal systems • Delivering media rich broadband experience
9. Organizational consulting, implementation, and integration	• Integration with existing curriculum and training delivery system • HR and IT Administration training • Employee incentive and accreditation programs • Performance reviews • Cultural support for self-study • Customized management training support • Behavioral change measurement and reporting

Sources: Ninth House Network and WR Hambrecht + Co

CONCLUSION – THE E-LEARNING REVOLUTION HAS JUST BEGUN

The next few years should see revolutionary changes. We believe e-learning will change the way corporations deliver training in nearly all segments of the business process. Increasing global competition, rapid technological advances, demographic changes, and the emergence of a service- and knowledge-based economy force organizations to train and re-train their workforce in new ways. We believe that companies that deploy and effectively utilize e-learning will have a distinct competitive advantage. The Internet presents companies with numerous possibilities for leveraging knowledge and education resources. It redefines e-learning not only in terms of better delivery, but also more current, dynamic educational content, more personalized, relevant learning experiences, and more collaboration with experts and peers. The main obstacles to e-learning, such as bandwidth, content availability, technology standards, and service integration, are currently being addressed and should not be significant issues two years from now. Market dynamics over the next several years can be expected to be dramatic, as the shape of the e-learning market develops.

Tremendous opportunities for corporate e-learning. We believe the B2B e-training space is the most promising market within the education industry. While currently a relatively small and early-stage industry, it is poised to grow exponentially in the next several years. The Internet has affected and transformed nearly all sectors of the economy, but has been slow to penetrate the education market. We believe the education industry will inevitably catch up and massively distribute knowledge over the Web. We expect corporations to be the fastest to explore this new frontier and to adopt Web-based learning on a broad scale. Companies face more economic and social pressures to find new ways of training delivery and encounter fewer regulatory, bureaucratic, financial, and technical barriers to implementation of e-learning than other segments of the education industry. E-learning providers that target the corporate market should be the movers and shakers in the education industry in 2000 and 2001.

Exciting investment opportunities in the e-learning space, as number of IPOs is exploding. With barely a handful companies in each segment, the public e-training market mirrors the immaturity of the entire industry. The small group of pure-play e-learning companies in the public market today includes SmartForce, DigitalThink, SkillSoft, Click2learn.com, Learn2.com, and Centra Software. We predict that the days of market immaturity are numbered. Between 1990 and 2000, venture capitalists and other investors have invested roughly $10 billion in private education firms;[20] and many of these companies are now entering or getting ready for the public markets. In the next 18 months, the stock market should see dozens of e-learning companies popping on the scene, giving investors a much broader choice of pure-play e-learning opportunities. We believe investors who do not pay attention to this burgeoning market will miss significant investment opportunities.

ENDNOTES

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[17] Risks and opportunities of e-learning are discussed in *The Education Economy,* January *1999*.

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PUBLIC COMPANY PROFILES

CENTRA SOFTWARE, INC. (CTRA) ▲ LIVE E-COLLABORATION WWW.CENTRA.COM

430 Bedford Street
Lexington, MA 02173
T: (781) 861-7000

Revenues:	**$8.6MM (FY 99)**
Employees:	**~120**
Founded:	**April 1995**
CEO:	**Leon Navickas**

Highlights

- Centra Software is one of the pioneers in online collaboration and learning. The Company provides a complete suite of products to support a spectrum of live e-business events, including e-learning, online meetings, collaborative ecommerce, and virtual teamwork.

- Centra's collaborative software allows reaching users behind firewalls and proxy servers over low-bandwidth and dial-up connections.

- Centra was the first company to offer a complete live Web-based learning system scaleable from tens to tens of thousands users with a common management and administration environment. The Company also pioneered the integration of live, self-directed, and asynchronous learning modes in one interface.

- The Company's flexible, scaleable, and fully integrated solution and rapidly expanding blue-chip customer base should allow Centra to leverage its first-mover advantage and expand on its market leadership.

Company Profile

Centra Software develops and markets Web-based Java applications software and services for the delivery of instructor-led training, self-paced learning, integrated live demonstrations, presentations, and meetings via corporate intranets, extranets, and the Internet. The Company targets Global 2000 companies and other large organizations in a broad range of industries, as well as government agencies and higher education institutions. Centra's solution consists of three key products, Centra 99, CentraNow, and CentraBCN. Centra 99 is a software application with integrated multi-way, voice-over IP capabilities, shared workspace environment, and user interface enabling live conversation, collaboration, and content sharing. Capabilities also include live application sharing; interactive Body Language™ functions for instant polling, surveys, and feedback; Web Safari™; interactive whiteboard and text chat; breakout rooms and labs; event recording and playback; just-in-time content updates; and advanced Internet networking technology such as HTTP tunneling for firewall compatibility and IP multicasting for bandwidth efficiency. The no-install Centra Conference™, intended for one-to-one interaction and large-scale Web presentations and Centra Symposium™, designed for highly interactive events such as hands-on learning, workshops, coaching, and teamwork, are part of the Centra 99 system. Centra 99 also supports other application-specific user interfaces such as CentraNow and fully integrates with Microsoft Backoffice and Digital Dashboard. The system is sold on a rental or purchase basis starting at $25,000.

CentraNow is a live, voice-enabled Web collaboration service designed for spontaneous meetings accessed through a Web browser. The system allows firms to deliver live online sessions to their customers and partners that integrate PowerPoint presentations, shared applications, live Web pages, and audio conversations. CentraNow enables individuals to schedule a meeting, invite participants by e-mail, and lead a collaborative session without technical assistance or pre-installed software. CentraNow provides a foundation for the Centra B2B Network, a consortium of partners using CentraNow to deliver business collaboration and industry-specific events to new user communities on the Web. Centra BCN (Business Collaboration Network) is a global e-business network for content and service providers (including Centra 99 users) that enables content aggregation and distribution, as well as hosting of B2B live collaborative events over the Web. Embedded within Centra BCN is the Centra B2B Network where users can find industry-specific business events, content, communities, and services such as those from Ariba and Rosenbluth International.

In addition, Centra offers hosting services to outsource the administration of customers' e-business collaboration operations. Centra's services also include a range of consulting offerings as well as training on the Company's products. Centra has entered into agreements with DA Consulting Group, Deloitte Consulting, and PricewaterhouseCoopers to integrate its products and services into their offerings, with the goal of increasing the market awareness of Centra's products and services and creating alternative distribution channels. The Company has offices in Lexington, Massachusetts, Atlanta, Chicago, Philadelphia, Washington D.C., San Mateo, California, the U.K, and Japan.

Major Clients

Ariba, Oracle, Compaq, Hitachi, Ascend Communications, Juniper Networks, NEC America, Nortel Networks, Bay Networks, Novell, Ameritech Mobile Communications, AT&T, Bell Canada, MCI WorldCom, Viacom, Advest, American Fidelity Group, Applied Systems, Nationwide Mutual Insurance, Federated Department Stores, Kraft Foods, Sony, Merck, Kaplan Educational Centers, Ziff-Davis Education, First Consulting Group, United States Army, James Madison University, University of Tennessee

VC/Affiliation Partners

Burr Egan Delegae & Co., North Bridge Venture Partners, Commonwealth Capital Ventures, The Career Group, Scripps Ventures, Polaris Venture Partners, idealab!, HarbourVest Venture Partners, Goldman Sachs Group

Competition

InterWise, LearnLinc Corp., Lotus Development Corp., PlaceWare, WebEx

CLICK2LEARN.COM (CLKS) ▲ SINGLE-SOURCE SOLUTION WWW.CLICK2LEARN.COM

110 110th Avenue NE, Suite 700
Bellevue, WA 98004
T: (425) 462-0501

Revenues:	**$34.7 MM (FY 99)**
Employees:	**~350**
Founded:	**December 1984**
CEO:	**Kevin Oakes**

Highlights

- Click2learn.com is one of the market leaders in the technology segment, providing a complete suite of authoring tools and learning management systems, as well as value-added services.
- In the fall of 1999, Click2learn entered the content aggregation and distribution business by launching a learning portal. The Company is aggressively expanding its new line of business and has formed partnerships with numerous content providers.
- The Company recently introduced Corporate e-Learning Site, a training solution that offers corporate clients a combination of e-learning content and browser-based authoring, publishing, and learning management tools on a fully outsourced basis. The user interface of each Corporate e-Learning Site can be configured to match the look and feel of a company's existing Web site or intranet.
- A fully integrated product mix, combined with an experienced management team and a strong client base, should allow Click2learn to expand on its leading market position.

Company Profile

Click2learn.com (formerly Asymetrix Learning Systems) provides off-the-shelf and customized software applications and services to create, deploy, and manage Internet-based training. The Company's authoring tools include: 1) ToolBook II Instructor, a high-end multimedia development system for creating sophisticated online learning applications; 2) Toolbook II Assistant, an easy-to-use package that assists first-time developers through every step of creating and deploying an interactive course using wizards, templates, and online guidance; and 3) IconAuthor Net Edition, an advanced tool for creating interactive learning applications for CD-ROM, network, and Internet delivery. In addition, the Company offers authoring support products such as Digital Video Producer and Web3D. Librarian and Ingenium are Click2learn's training management systems that let administrators assign and track online learning programs as well as instructor-led classes.

In addition to its e-learning technology business, Click2learn.com is rapidly establishing a learning portal to aggregate and distribute content in the areas of IT and soft skills training to industry professionals, corporate intranets, Web portals, consumers, students, and higher education institutions. The Company offers its products on a subscription basis through its Web site and also sells third-party CD-ROM, video, audio, and print educational materials. For larger organizations, the Company creates a custom version of the portal designed to meet the specific needs of the corporate customer. The content is delivered through an open standard ASP model, completed with sophisticated learning management features and functionality that allows organizations to assign courses and track users' progress and test scores.

Click2learn has assembled over 2000 online education and training courses and formed content distribution relationships with NETg, Skillsoft, Competence Software, Crisp Publications, Learn2.com, netSyndicate, Skills Online, FirstNet, Macmillan Publishing, InfoSource, and other content developers.

The Company's professional services, which account for 55% of sales, include custom application development, organizational assessment, instructor-led training, system implementation, technical support, and comprehensive consulting services. Click2learn's partnership with Go2Net allows it to provide online education and training services across the Go2Net network, while an alliance with VerticalNet, a leading operator of B2B vertical marketplaces, will give it access to 20 vertical portals. Click2learn has established relationships with a significant portion of the Fortune 500 companies and is working with them to transition their training and education programs to online models. Click2learn has offices in 14 states and the UK.

Major Clients

Arthur Anderson, Prudential, PriceWaterhouseCoopers, American Airlines, Boeing, Hewlett-Packard, U.S. Air Force, GTE, Lucent Technologies, MCI, ADC Telecommunications, Liz Claiborne, Duracell, Duke University, California State University, NYUonline, U.S. Learning Systems, McLeodUSA, Administaff

VC/Affiliation Partners

Vulcan Ventures, Vault.com, Vignette, Maxim Training, U.S. Learning Systems, Marshall Capital Management, Velocity Business Publishing, Go2Net

Competition

Lotus Development Corp., Macromedia, Docent, Saba Software, WBT Systems, KnowledgePlanet (formerly KnowledgeSoft), Teamscape, Pinnacle Multimedia, TrainingNet, Headlight.com, Learn2.com

LEARN2.COM, INC. (LTWO) ▲ CONSUMER PORTAL WWW.LEARN2.COM

1311 Mamaroneck Avenue, Suite 210
White Plains, NY 10605
T: (914) 682-4300

Revenues:	**$13.6 MM (CY 99)**
Employees:	**~300**
Founded:	**1993**
CEO:	**Stephen P. Gott**

Highlights

- Learn2.com is taking a broad approach to e-learning by offering a wide range of learning services and products to different education market segments via a learning portal. Its strength is in the consumer market. By marketing its site as a destination site, it should be able to attract more unique users in the future.

- Learn2.com's recent contract with EarthWalk, a leading supplier of emerging technology to the education market, will allow its e-learning solutions to reach a customer base of 2,400 school districts nationwide.

- The Company's strategy is to achieve additional competencies through acquisitions. Through last year's acquisition of ViaGrafix, Learn2.com's product line has grown to include over 1,200 training courses.

- Over 130 Learn2.com courses have been approved by 51 states and territories and the National Association of State Boards of Accountancy (NASBA) to provide Continuing Professional Education (CPE) credits to CPAs.

Company Profile

Learn2.com (formerly 7th Level) is a leading learning portal that markets a broad spectrum of interactive, customized, and off-the-shelf online and physical learning products, as well as various services and technologies, targeting the consumer market, Fortune 1000 companies, government agencies, and educational organizations. The Company's products and services are delivered via the Internet, intranets, CD-ROMs, and videotapes. Approximately 90% of Learn2.com's content is developed in-house. Through its Tutorials.com Web site, Learn2.com markets interactive multimedia tutorials, including desktop application software, computer programming, life skills, and language courses to consumers, students, and work-at-home professionals. Learn2.com is also an Internet learning community that offers consumer tips and step-by-step instructions on a variety of skills, activities, and tasks, amounting to about 8000 free tutorials.

Solutions for corporations and organizations are offered through 3 product lines: 1) Learn2University.com is operated on an ASP basis and includes a catalog of over 250 interactive multimedia tutorials on desktop applications, IT, programming, network training, Microsoft Certification, the Internet, finance, and soft skills enhancement. Value-added services include administration, reporting, tracking, and assessment, as well as Learn2 Help, a service that enables users to

e-mail their questions to an expert; 2) StreamMaker™ is a courseware authoring tool that allows custom tutorial and content creation for streaming purposes. The tool utilizes patented technology to produce fully synchronized, interactive, CD-ROM-quality multimedia streams that can be delivered through the Internet and intranets. StreamMaker has been licensed to IBM, Inuit, and other content developers on a revenue sharing basis; and 3) Agent7™ stands for customizable "Learning Agents" that deliver online help desk support, customer service, and information on new product launches. Agent7 also serves in a variety of e-commerce-related functions, including site navigational host, site salesperson, and product training agent.

Learn2.com is actively building its local and international distribution network through alliances with Microsoft, Pinacor, AOL/Netscape, IBM, Linkshare, Hungry Minds, Headlight.com, and Click2learn. Moreover, the Company is increasing its customer base through the expansion of its courseware to the Linux market, K-12, and the continuing education markets, as well as through agreements with Beyond.com to sell learning products to government agencies. Learn2.com has facilities in White Plains, New York, Golden, Colorado, Sausalito, California, and Pryor, Oklahoma.

Major Clients

MTV.com, Bloomberg.com, U.S. Department of Labor, AOL, Beyond.com, Pinacor, Patriot Computer, SegaSoft (Heat.net), CompUSA, RadioShack, Best Buy, Staples

Competition

Click2learn.com, HungryMinds, Headlight.com, SmartPlanet, University.com, About.com, eHow.com, How2.com

NETG (H) ▲ XTREME LEARNING WWW.NETG.COM

1751 West Diehl Road, Suite 200
Naperville, IL 60563
T: (877) 561-6384

Revenues:	**~$130 MM (FY 99)**
Employees:	**~550**
Founded:	**1997** (acquired by Harcourt)
CEO:	**Gary Lopez**

Highlights

- With an established international presence and a client base that includes most of the Global 100, NETg is one of the major players in the online IT training market.
- NETg plays on the content as well as the technology front, allowing the Company to offer clients certain authoring capabilities, a training management system, and Web hosting along with courseware.
- NETg is growing at solid 25-30% annually, with operating margins expected to increase from the current 4-5% to 10-15% in 2000. In fiscal 1999, the Company increased net earnings by 25%.
- Through its Learning Management Alliance Program™, NETg is pushing forward the development of e-learning technology standards. This may prove to be a wise move, since making NETg's courseware compatibile with all major learning management systems should support its strong position in the industry.

Company Profile

NETg (National Education Training Group), a subsidiary of Harcourt General, is a leading developer of technology-based IT training courses targeting large corporations in the U.S. and abroad. The Company has a portfolio of more than 600 off-the-shelf multimedia courses in several languages, covering courses on strategic subject areas such as: desktop computing, information technologies, Internet/Intranet, and IBM mainframe computing. Course topics include: Microsoft, Cisco, and Novell Certification training; networking; COBOL and Java programming; databases; Web development; and ecommerce implementation. NETg also offers a selection of general management and personal development courses. The Company's courses are highly interactive, using real-life simulations, streaming audio/video, online mentoring, and expert support. Courseware is based on a flexible, open architecture and delivered through the Internet, corporate intranets, and CD-ROMs.

All of NETg's Skill Builder® courses are based on a Learning Object™ architecture, which allows the manipulation of content and customization of courses for organizations and individuals. Courses are modular in structure, with each course comprising several independent learning segments, called NETg Learning Objects (NLOs). Each NLO teaches a specific skill and can exist independently from the course, enabling customers to "mix and match" objects from different courses to create a hybrid, customized course that meets a learner's needs and skill level. This structure also facilitates just-in-time learning, as it allows learners to access one object and learn one skill when they need it. NLOs are built from a single-file training format so that each NLO-based course can be delivered via a range of training delivery options.

NETg recently introduced Xtreme Learning, a Web-hosted solution. In the initial stages of the program, customers will be able to access 300 of NETg's existing courses, including 12 modular courses designed specifically for fast delivery and easy customization. Each Xtreme Learning site includes a catalog of courses accessible to users, online mentoring, a discussion room, an innovation center with information on course design principles, a news section with updates about the training industry, and a reporting service to track course usage and training effectiveness. Xtreme Learning is delivered and hosted entirely through the Internet; no data is stored on the client's servers. This allows any company with Internet access to offer online training to its employees without worrying about internal technology constraints or infrastructure integration. Xtreme Learning can be customized to look like the customer's intranet, and can also be branded as the customer's own training service.

In addition to developing content, NETg offers SkillVantage®, an open learning management system that supports the use of NETg's course library as well as third-party courseware. In 1999, NETg has initiated the Learning Management Alliance Program™ to promote technology standards in the Web-based training industry, allowing for compatibility across vendors. Partners in the Learning Management Alliance Program™ include WBT Systems, Saba, Click2learn.com, Pinnacle Multimedia, Syscom, KnowledgePlanet.com (formerly KnowledgeSoft), Infotec, Pathlore, and Knowledge Networks.

Major Clients

Over 2000 corporate customers, including a number of universities and most of the Fortune 100.

Competition

SmartForce, Digital Think, KnowledgeNet, Learning Tree International, Teach.com, CyberStateU.com

prosofttraining.com

PROSOFTTRAINING.COM (POSO) ▲ VENDOR-NEUTRAL CERTS WWW.PROSOFTTRAINING.COM

3001 Bee Caves Road, Suite 100
Austin, TX 78746
T: (512) 328-6140

Revenues: ~$13 MM (CY 99 est.)
Employees: ~85
Founded: December 1995
CEO: Jerrell M. Baird

Highlights

- ProsoftTraining.com pioneered vendor-neutral IT certifications and is a market leader in its segment. The Company currently focuses on converting its instructor-led training courses to computer-based and Web-based training.

- In 1999, the Company's Certified Internet Webmaster (CIW) program received accreditation from the American Council on Education as part of their college credit recommendation service, allowing Prosoft to tap a potentially lucrative academic client base of universities, community colleges, and vocational-technical schools.

- Prosoft has a very strong distribution network that is comprised of 5,200 Sylvan testing affiliates worldwide, 2000 Virtual University Enterprise testing affiliates, 925 authorized training centers of various training companies, e-learning portals, and international training providers and corporations in Japan, Australia, New Zealand, Singapore, China, India, Kuwait, and Saudi Arabia.

- The Company's success in the certification business depends on whether Prosoft's certifications become industry standard. Being a first mover and having a large global distribution network leveraging Prosoft's brand can make the difference in the battle for market leadership.

Company Profile

ProsoftTraining.com derives its revenues from three different business lines in the area of IT training: courseware, teaching services, and certification. The Company offers more than 50 vendor-neutral Internet/IT training courses and eight Internet certification tracks on a wholesale basis targeting training companies, corporations, academic institutions, and individuals. ProsoftTraining develops 98% of the courseware internally and delivers it via instructor-led training, textbooks, CD-ROM, and the Internet. Course topics include fundamental and intermediate skills in Internetworking, Web site design, Internet scripting, Internet application development, Java, Internet server administration, Internet security, ecommerce, Linux and UNIX administration, and CompTIA's Network+ operating environments. Courseware is sold in the form of textbooks, reproduction licenses, OEM licenses, and custom-developed courses. Two thirds of Prosoft's revenues comes from teaching services, which include training of client instructors, conducting classes, developing custom and Prosoft courseware, and client consulting. A part of the Company's IT classes is conducted via Prosoft's ProFlex distance-learning program.

In the area of IT certification, a rapidly growing part of the Company's business, ProsoftTraining offers its vendor-neutral Certified Internet Webmaster (CIW) program, which is comprised of an entry-level credential (CIW Foundations) and seven specialized job-role certifications: site design skills, interactive Web site development, Web sites connected to database applications, Web server administration, TCP/IP networking skills, server and network protection skills, and ecommerce transaction skills. Tests are administered through leading testing vendors such as Sylvan Prometric and Virtual University Enterprise (VUE). Course delivery is also achieved through Web-based training via e-learning portals, such as Learn2.com and its Tutorials.com, and Learning University Web sites reaching millions of consumers. In addition, Prosoft markets its certifications through Prosoft Certified Training Center (PCTC) resellers and licensees, which agree to use only official courseware provided by Prosoft, teach courses using only certified instructors, and advertise courses using the official trademark and logo. The Company has agreements with over 800 authorized training centers. Certification revenues are comprised of fees from students taking the CIW certification examination ($100 – 150) and sign-up fees to become an authorized Prosoft training partner ($3,000 – 9,000).

Prosoft recently expanded its product offerings by introducing one of the first Linux certification programs in the market. The Linux Certified Administrator exam comprises Linux Fundamentals and Linux System and Network Administration courses. In line with its channel development strategy, Prosoft recently announced an agreement with the Japan Technology Transfer Association (JTTAS), under which JTTAS companies would offer certification classes to their employees and clients. Members who have signed up include Fujitsu Learning Media, NEC, Compaq, Cisco, Oracle, and Microsoft. The Company has facilities in Austin and Dallas, Texas; Jacksonville, Florida; Santa Ana, California; Vienna, Virginia; Chapel Hill, North Carolina; and Oak Brook, Illinois.

Major Clients

IBM, CompUSA, Samsung, ExecuTrain, New Horizons Worldwide, Productivity Point International, ARIS Corporation, Knowledge Alliance, Catapult, ComputerPREP, TECHConnect (UK), BIC Systems (UK), DiTEC (Germany), Technology Training (Ireland), Semcon (Sweden), Institute Eris (France), Fringes (Spain), Drake International (Singapore)

Competition

HyCurve, CompTIA, Global Knowledge Network, Novell

RWD Technologies™

RWD TECHNOLOGIES, INC. (RWDT) ▲ ERP SPACE E-LEARNING WWW.RWD.COM

1040 Little Patuxent Parkway
Columbia, MD 21044
T: (410) 730-4377

Revenues:	**$124.4 MM (FY 99)**
Employees:	**~1100**
Founded:	**1988**
CEO:	**Robert W. Deutsch**

Highlights

- RWD Technologies is a diversified IT and ERP services, technology performance support, and consulting firm with increasing exposure to the world of corporate e-learning. In 1999, RWD launched its Enterprise Learning Solutions division and acquired Merrimac Interactive Media Corporation, which specializes in customized, Web-integrated learning systems and certification programs for high-tech companies.

- In late 1999, RWD announced a new Internet-based training offering, RWD ERPspace e-Learning. With the option of synchronous or asynchronous content delivery, employees can register, perform interactive simulations, track their performance, and measure their progress with online testing.

- RWD has long experience and expertise in Internet technology as a platform for communications and information transfer in a variety of industries. The Company has also developed strong partnerships and skill sets in distance learning, knowledge management, and complementary services, which should contribute significantly to future revenue growth in this line of business.

Company Profile

RWD Technologies' four principal service areas include information technology services, enterprise resource planning (ERP) services, lean manufacturing consulting, and technology performance support. These services are targeted towards large corporations and academic institutions in the U.S. and abroad. The Company's IT products and services include a full spectrum of strategic consulting, custom software development, ecommerce and e-training products (including RWD WILS, RWD Multimedia, and WebPlayer™), knowledge management systems and services, electronic performance support systems (EPSS), electronic document management systems (EDMS), enterprise relationship management (ERM) systems, enhanced user interface systems, remote worker and sales force automation, packaged software integration and implementation, and operations and maintenance services. RWD's ERP services comprise implementation planning, project management, data conversion, system configuration, change management, end user training and services, and consulting. Lean manufacturing consulting services include the development and deployment of entire production systems, plant and manufacturing line start-up, and troubleshooting services. The Company's technology performance support services encompass the design, development, and delivery of information to end users of technology, including classroom, online, and plant floor training, hard copy training materials, customized job aids, online help, and plant floor consulting.

In addition to its general IT and ERP services, RWD has a long history of deploying Internet technologies for corporate learning. RWD develops, integrates, and deploys a wide variety of Web-based performance improvement solutions, including authoring, publication, comprehensive skills assessment, management of courses and content, and tracking of user progress. First launched in early 1998, the RWD WILS product is a learning environment that incorporates the essential components of effective performance-based training. WILS utilizes the presentation capabilities of the RWD Multimedia Web Player™ to deliver conceptual presentations. It also incorporates links to a virtual lab where users can view demonstrations of tasks and then practice the tasks independently. Interactive exercises, links to instructors via e-mail, and other online resources are also available. RWD WILS is currently being used by the World Bank to support their SAP™ R/3™ implementation.

RWD ERPspace e-Learning is the Company's latest training product. Directed primarily at ERP implementations in the post go-live stage, it delivers both synchronous and asynchronous distance learning. It can be delivered as either a turnkey solution or be fully hosted by RWD. In cooperation with WBT Systems, RWD also develops complete turnkey solutions for training employees in topics unique to their organizations. The Company's consultants create content for RWD and WBT clients to be delivered via WBT Systems' learning management system "TopClass." RWD's recent alliance with Dataware Technologies has resulted in RWD InfoHarvest™, a comprehensive knowledge warehouse intranet solution that allows information to be captured from disparate sources during company mergers, acquisitions, globalization, and reengineering. In addition to e-learning, RWD offers full services in several e-commerce applications, including e-tailing, e-purchasing, e-services, and e-business. In 1998, RWD provided services to 131 companies in more than 20 industries. The Company maintains facilities in ten U.S. states and the U.K.

Major Clients

Mobil Oil Corporation, DaimlerChrysler, Ford, General Motors, NationsBank, MediaOne, IBM, Merck, SAP America, Bell Atlantic, Lucent Technologies, Microsoft, Fujitsu, Pioneer Hi-Bred, BC Telecom, Genentech, Polaroid, Port Authority of NY & NJ, BellSouth, Goodyear, Bethlehem Steel, Harvard University, Stanford University, Houston Industries, Boston Edison, John Deere, Bristol-Myers Squibb, Kodak, Chevron, CIGNA Healthcare, Continental Airlines, Warner-Lambert, The Weather Channel, Disney, Dow Chemical, NASD

Competition

Professional services groups of large technology and management consulting companies, consulting practices of large accounting firms, software companies

SKILLSOFT CORP. (SKIL) ▲ ENTERING NEW MARKETS WWW.SKILLSOFT.COM

20 Industrial Park Dr.
Nashua, NH 03062
T: (603) 324-3000

Revenues: ~$3.8 MM (CY 99 est.)
Employees: ~120
Founded: January 1998
CEO: Charles E. Moran

Highlights

- In collaboration with The Wharton School of the University of Pennsylvania, SkillSoft plans to develop financial courseware targeted at Global 2000 organizations.
- SkillSoft's new partnership with Delmar reflects a move to enter the post-secondary and K-12 education markets. The Company's Web-based courseware will be delivered to over 3200 community colleges, career schools, junior colleges, vocational-technical schools, and high schools, giving SkillSoft access to a huge market.
- Through learner accreditation programs with the University of Phoenix and George Mason University, SkillSoft is tapping the continuing education market. The Company's courses have received approvals from a number of educational institutions and certification organizations for college degree credit, continuing education requirements, or professional certification.
- SkillSoft's strategy to diversify into virtually all segments of the education market will likely lead to an exponentially growing revenue stream, as the Company can leverage its content in different markets.

Company Profile

SkillSoft offers a comprehensive library of more than 215 highly interactive, off-the-shelf, Web-based soft skills courses in the areas of project management, team building, communication, marketing, strategic planning, finance, personal development, customer service, sales, knowledge management, and human resources. Content is developed in cooperation with outside organizations, such as DDI and TACK Training International, that provide course content or assemble courses according to the Company's design models. SkillSoft products are targeted at Global 2000 companies, governmental organizations, and educational institutions and can be accessed through corporate intranets and the Internet.

SkillSoft's courses are media rich and use instructional models such as simulations, behavioral modeling, role-playing, practice exercises, and integrated assessments. Utilizing an "Accelerated Path" feature, learners are able to "test out" of topics in which they are proficient, and then be guided to specific areas that cover the skills they do not already possess. RolePlay™ is an interactive feature with realistic audio-visual simulations of everyday workplace scenarios. Additional RolePlay™ features include an 'Explore' mode, allowing the learner to explore all possible outcomes by moving backwards and forwards through the simulation, as well as an 'Evaluate' mode, which evaluates user responses and provides summary feedback at the end of the simulation. The Company also offers different performance support tools, including searchable course-related queries, real-time, online one-to-one mentoring with experts in 14 curriculum areas, and customizable firm-specific "Online Job Aids," such as a database of 600 topical refreshers and worksheets, in order to provide a direct connection between skills learned and the job.

Other services include assessment of success criteria, implementation, program administration, program communications, and marketing and coordination of all customer support efforts. SkillSoft's new ecommerce Web site, powered by Headlight.com, opens a new distribution channel for small and medium-sized businesses and professionals to access its products, allowing SkillSoft to reach another previously untapped market. SkillSoft was recently awarded the Global-Charter Registered Education Provider (R.E.P.) status by the Project Management Institute giving over 50,000 PMI members access to the Company's Web-based, self-directed learning tools. SkillSoft has offices in Nashua, New Hampshire, Dallas, Texas, and the UK.

Major Clients

GTE, IBM, Citibank, Dayton-Hudson Corporation, Ernst & Young, EMC Corporation, Adobe, Fujitsu, BEA Systems, National Car Rental, Highmark, General American Life, American Red Cross, Fluor Daniel, Finova

VC/Affiliation Partners

Warburg Pincus Ventures

Competition

SMGnet, Teach.com, UNext.com, Pensare, Ninth House, SmartForce, Provant

SMARTFORCE PLC (SMTF) ▲ LEADING UNIFIER **WWW.SMARTFORCE.COM**

900 Chesapeake Drive
Redwood City, CA 94063
T: (650) 817-5900

Revenues:	**$198 MM (FY 99)**
Employees:	**~1400**
Founded:	**1984**
CEO:	**Gregory M. Priest**

Highlights

- With about 4.5% share of the U.S. market, over 2000 corporate customers, and a large global presence, SmartForce is by far the largest e-training company in the market. The Company is a player in all three major market segments: content, technology, and services.

- In late 1999, SmartForce launched "SmartForce e-Learning," a fully integrated, Internet-based learning solution, representing a fundamental strategy shift that transforms the formerly CBT-focused company into a Web-centric player.

- While originally an IT training provider, SmartForce has moved aggressively into the high-demand, fast-growing content areas of business and interpersonal skills and is in the midst of creating an online learning business degree program.

- The Company's timely move into the online training market should be well received by customers and investors. Armed with a strong management team, established brand recognition, and the capability to serve different segments of the education market in one-stop-shopping fashion, SmartForce should be able to leverage its first-mover advantage to grow rapidly.

Company Profile

SmartForce (formerly CBT Systems) develops and markets off-the-shelf and customized e-learning solutions targeting Fortune 3000 companies, government agencies, universities, the continuing education market, and other major U.S. and international organizations in a wide variety of industries. The Company's e-training courseware covers areas, such as client/server concepts, operating systems, networking, graphical user interfaces, Web publishing, and database design, as well as business skills and performance improvement, and can be deployed over the Internet and intranets. Vendor-specific products include Microsoft Windows NT and Windows 2000, IBM/Lotus Notes, Cisco Router Configuration curricula, Novell NetWare, Sybase/Powersoft PowerBuilder, Oracle Database Administrator and Developer 2000, Javascipt and LiveWire, Informix Online Dynamic Server, and SAP's R/3. In addition, SmartForce has developed generic titles for COBOL, Internet Security, C, C++, UNIX, IT Core concepts, Project Management, and Internetworking. The Company maintains a content library of over 1,200 titles. Most of them have been authored in or converted into Java or DHTML, removing the need for customers to install software or plug-ins on desktops and enhancing content usability across multiple operating platforms.

Other services include SmartSeminars (SmartForce-hosted e-learning events on IT and business topics comprising expert-led online seminars that bring together streamed audio and video, graphics and animation, and interactive and collaborative learning features to create a rich learning environment), SmartMentoring programs, supplemental technical documentation, and certification preparation tools. In addition, the Company provides customized solutions. Corporate customers receive an end-to-end e-learning environment, with a fully customized user interface, expert-led virtual seminars, peer-to-peer collaboration, 24x7 access to expert mentors through e-mail, chats, or newsgroups, and a host of learning options – often including in-house courseware. For several large clients, the Company creates SmartForce-hosted corporate e-learning universities, with a strong emphasis on building online learning communities. This is reflected in agreements with Dell to create and host EducateU.com, a global online learning community for Dell customers and non-customers, and with Microsoft, to create an online community for its more than 600,000 Microsoft Certified Professionals worldwide. As one of the first content companies, SmartForce – through a new partnership with Macromedia – offers authoring and self-publishing tools on corporate e-learning sites.

SmartForce was recently selected by the academic consortium of the "Big Ten" universities and the University of Chicago to provide SmartCourses to faculty, staff, and students via campus intranets, representing a step into the post-secondary education market. Through the creation of SmartForce.com, a destination site for professional advancement, SmartForce expanded its presence into the consumer market segment, leveraging its B2B offerings in the B2C world. The Company's extensive network of content partners includes Cisco, Microsoft, Intel, Novell, Lotus Development, SAP, Oracle, and Informix. SmartForce, headquartered in Redwood City, California, maintains offices in 26 countries.

Major Clients

Alcatel, AT&T, Bear Stearns, Bell Atlantic, Blue Cross Blue Shield of Ohio, British Airways, Cambridge Technology Partners, Compaq Computer, Computer Sciences Corporation, CTG, Dell Computer, GTE Data Services, Manpower, MCI, Modis Professional Services, PriceWaterhouseCoopers, Reuters, Sprint Corp., Tandem, Unisys, The University of California System, U.S. Air Force, U.S. Army, Wells Fargo

Competition

NETg, DigitalThink, KnowledgeNet, Learning Tree International, ExecuTrain

SMARTPLANET (ZD) ▲ SMART ONLINE COMMUNITY WWW.SMARTPLANET.COM

368 Lakeside Drive
Foster City, CA 94404
T: (650) 350-6500

Revenues:	**~$3 MM (CY 99)**
Employees:	**50**
Founded:	**September 1999**
CEO:	**Chris Dobbrow**

Highlights

- SmartPlanet is one of the largest paid membership sites and online communities on the Web and the largest in the e-learning category, with 30,000 of the 160,000 current registered members paying for access to more than 575 courses. SmartPlanet members are projected to reach 1 million by the end of 2000, each generating an estimated $100 in revenue.

- The Company's leverages Ziff-Davis' long history and expertise in the online learning market. SmartPlanet's vision is to provide a rich and diverse Web destination for people seeking continuous personal and professional growth on virtually any topic or interest by combining the three key elements of a successful ecommerce site: content, commerce, and community.

- SmartPlanet is capitalizing on people's desire for a fulfilling learning experience within a learning community. The Company is ahead of the market with a huge active community, years of management experience in this category, and rapidly growing brand awareness among customers.

Company Profile

SmartPlanet, a business unit of Ziff-Davis, is a content aggregator and host of personal learning communities targeting the consumer and continuing education markets. SmartPlanet links individuals with common interests in personal and professional areas such as Career & Business, Computing & Internet, Finance & Investing, Science & Technology, Arts & Society, Body & Mind, Hobbies & Recreation, and Home & Family. The site offers several specific areas in which to pursue an interest: Learn, Teach, Discuss, Shop, and a customizable section called "My SmartPlanet." Through these integrated areas, people can directly exchange information and advice with like-minded individuals, access a wide variety of content, and review and buy services or products such as books and software. Ziff-Davis University (ZDU), which has grown into a market leader in the IT training segment from its launch in 1995, has been fully integrated in SmartPlanet as the base for the Computers & Internet Learning Zone. It offers a number of programming, networking, Linux and Unix, desktop applications, databases, hardware, Web design, and other IT courses.

Courses are offered using a variety of formats. Online instructor-led courses are taught by experts who present engaging lessons, hands-on projects, and answer students' questions. These courses also include online discussion areas and mailing lists. Self-paced courses are available as well and use a variety of knowledge builders, quizzes, streaming audio, and simulations for instruction. SmartPlanet members have the option of creating and teaching self-paced courses, further building a sense of community among members. SmartPlanet's "SmartPartners" provide a combination of diverse learning content, commerce, and community for SmartPlanet.com. These partners include ZDnet, WetFeet.com, ClearStation,

Youachieve.com, Cook's Illustrated, RunZebra.com, netSyndicate, Livinglanguage.com, Beyond.com, Smartmoney.com, Barnesandnoble.com, and the Appraisal Institute. SmartPlanet plans to reach millions of additional potential members through distribution and partnership agreements.

SmartPlanet offers different ways to participate in e-learning. A free membership provides access to a portion of SmartPlanet's course offerings, while a subscription-based tuition model involves a one-year membership that gives unlimited access to all standard courses. This membership is available for approximately $70 – $90 per year. Members can also take any standard course on an ad hoc basis without paying an annual fee. Premier courses are purchased separately, and members receive discounts on premier courses developed by content partners and can purchase them through the ecommerce portion of the Web site. While a number of courses are free, course fees in general range between $9.95 and $29.95.

Major Clients

NA

VC/Affiliation Partners

None

Competition

Learn2.com, Click2learn.com, Headlight.com, TrainingNet, Hungry Minds, and various ecommerce and community sites

PRIVATE COMPANY PROFILES

CognitiveArts

COGNITIVE ARTS CORP. ▲ GOAL-BASED SCENARIOS WWW.COGNITIVEARTS.COM

115 East 57th Street, 10th Floor
New York, NY 10022
T: (212) 319-3556

Revenues:	**$11 MM (CY 99)**
Employees:	**~150**
Founded:	**December 1994**
CEO:	**Joe Bianco**

Highlights

- Cognitive Arts is one of the strongest players in the custom-built, interactive simulations space.
- The Company's dramatic move from instructor-led to technology-delivered training within the last two years, combined with its new strategy of creating a virtual university, has transformed its original business model into a highly scaleable solution.
- Through its long-standing affiliation with The Institute for the Learning Sciences at Northwestern University, the Company's team of content developers, instructional designers, graphic artists, programmers, and video producers has significant expertise in cognitive psychology, education, artificial intelligence, and computer science. This solid experience creates a significant barrier to entry in the Company's market niche.
- With three product lines serving different target markets and a strong, established customer base among Fortune 100 corporations, Cognitive Arts is positioned to be a major player in the e-learning industry.

Company Profile

Cognitive Arts' core business is the design and development of large-scale custom-built and off-the-shelf multimedia learning programs in business areas such as management, leadership, mentoring/coaching, sales, customer services, financial decision making, and negotiation. The Company serves mainly Fortune 500 companies and major international corporations. The largest part of the Company's business is the creation of customized, interactive simulations, called "goal-based scenarios," using a variety of teaching methods based on a "learning by doing" approach, developed from the research and theory of Dr. Roger Schank. Goal-based scenarios encompass case studies, animations, movie clips, and story-telling designed to simulate real-life situations. Training can be delivered via Internet, intranet, video, CD-ROM, and/or instructor-led sessions, depending on the customer's organizational infrastructure and culture. Changes in the Company's revenue stream should make Cognitive Arts an 80% online player in 2000.

Custom solutions price between $300K-500K per training program. The Company also provides services such as needs assessment, strategic curriculum consulting, program development, implementation, deployment services, and performance measurement. In 1999, Cognitive Arts has begun to produce a library of off-the-shelf training titles for the corporate market. It is teaming up with partners that have already branded content or distribution, including Harvard Business School and Germany's Klett Verlag.

In addition, the Company plans to develop a virtual university in concert with new partners, offering courses to the post-secondary and continuing education markets.

Cognitive Arts emphasizes goal-oriented training based on studies and theories developed at Northwestern University's Institute for the Learning Sciences (ILS), from which it originally emerged. Cognitive Arts' founder and CTO, Roger Schank, was a founding director of the ILS and, prior to that, the Director of the Artificial Intelligence Institute at Yale University. Schank, who holds academic chairs in computer science, education, and psychology, is widely published and considered a pioneer in the field of learning sciences. Northwestern University still holds a 10% stake in Cognitive Arts. The Company has offices in Chicago, Boston, New York, and San Francisco.

Major Clients

Aeroquip Corporation, Ameritech, Andersen Consulting, Deloitte Consulting, Eaton Corporation, First Union Corporation, Franklin Covey Leadership Center, GE Capital, Harvard Business School Publishing, Hewlett-Packard, IBM, Johnson & Johnson, Lucent Technologies, Target Stores, Ulysses Training, U.S. Department of Veterans Affairs, W.W. Grainger

VC/Affiliation Partners

ING Barings, Northwestern University, Harvard Business School Publishing

Competition

Internal/External Communication (IEC), Ninth House Network, SMGnet, Teach.com, Pensare, UNext.com, Omnitech, Provant, SkillSoft

CYBERSTATEU.COM, INC. ▲ CERTIFICATION ONLINE WWW.CYBERSTATEU.COM

3746 Mt. Diablo Blvd., Suite 100
Lafayette, CA 94549
T: (925) 299-2000

Revenues:	**$3 MM (CY 99)**
Employees:	**~30**
Founded:	**March 1994**
CEO:	**Ronald A. Abelmann**

Highlights

- As one of the pioneers in the rapidly growing online Internet infrastructure certification and testing market, CyberStateU.com is well positioned to become one of the market leaders. With nearly 92% of its students passing a certification exam on the first attempt, CyberState's courses yield an unusually high pass rate, resulting from the Company's 3-year research on effective, interactive teaching methods.

- After meeting extensive requirements and standards set forth by ITCAP, a national college accreditation program, CyberState became one of the first Authorized ITCAP Centers (AIC) enabling students to obtain college credit for Microsoft technical classes. In addition, the Company is a certified technology education center for Microsoft and Novell.

- The Company's recent move into the B2B market opens up a previously untapped and more stable revenue stream.

- CyberState's ample catalog of media-rich, high-quality certification programs and its large network of content, technology, and distribution partners should allow the Company to reach critical mass.

Company Profile

CyberStateU.com is a Learning Service Provider (LSP) offering online IT certification training to individuals, corporations, and government agencies. The Company focuses on Internet infrastructure and Internet telephony certifications and offers an extensive curriculum of off-the-shelf Microsoft, Novell, Cisco, Linux, Oracle, A+, and Computer Telephony certification programs. Together, CyberState University's course offerings cover about 90% of the Internet infrastructure technologies in the market. In addition, the Company provides custom computer telephony training for its largest customers. All of the Company's courses are custom-developed for CyberState by the Company's exclusive content partners, including best-selling authors David James Clarke IV (Novell Press), James Chellis (Sybex Network Press), and Todd Lammle (Sybex Network Press), and partners such as Novell, Microsoft, MindQ, MeasureUp, and Global Training Solutions. The Company's current enrollments include students from all continents.

To reduce total study time and improve content retention and skills transfer rates, CyberStateU.com has developed its interactive Synergy Learning System (SLS), an engine that combines multiple teaching media into a structured learning environment. These media incorporate auditory, visual, and kinesthetic sensory inputs to address different learning styles. Teaching methods utilized include a combination of multimedia skills assessment and testing, online lectures and assignments, streamed videos, hands-on labs, case studies, online review sessions, CD-ROM, books, mentoring, chat forums, and e-mail. Other key features

of the Synergy Learning System include guaranteed performance support resources, adjustable program length, and easy plug-in of third-party developed courses. CyberState employs a large number of certified instructors who can handle chats and mentoring for tens of thousands of students per day, making the Company's solution very scaleable. Each certification consists of one to seven courses, all of which must be purchased at once.

CyberStateU.com is actively partnering with learning portals, systems integrators, value-added resellers, software/hardware vendors, academic institutions, c-learning companies, and other content providers. A number of these partnerships are exclusive. Partners include Click2learn.com, Hungry Minds, DigitalGuru.com, TrainingNet.com, BrainBuzz.com, iContact.com, Virtual University Enterprise (VUE), MeasureUp, Microsoft, Novell, SGI, Dialogic (an Intel company), Cygcom, Natural Microsystems, StarVox, Applied Digital Solutions, CT Institute, KnowledgePlanet (formerly KnowledgeSoft), and Augusta State University. In addition, CyberState has developed relationships with distributors in the UK, Asia, and Australia. The Company has offices in Lafayette, California, San Jose, Salt Lake City, and Atlanta.

Major Clients

AT&T, Nortel, Lucent Technologies, INS, Natural Microsystems

VC/Affiliation Partners

Novus Ventures, Sigma Partners, Compass Technology Partners, iMinds, Stanford University, Acuity Ventures

Competition

MeasureUp, TrainingNet, NETg, SmartForce, KnowledgeNet, DigitalThink

DOCENT, INC. ▲ FIRST PLACE WINNER

WWW.DOCENT.COM

2444 Charleston Road
Mountain View, CA 94043
T: (650) 934-9500

Revenues:	**NA**
Employees:	**~100**
Founded:	**1997**
CEO:	**David Ellen**

Highlights

- Docent's strategy is to stay focused on its core competencies in the technology segment and partner with major content, technology, and service companies to deliver integrated end-to-end online learning solutions.

- In a recent independent evaluation of seven leading learning management systems organized by PC Week, Docent's Enterprise 4.0 was the only system to receive grade A for its strong capabilities to create online course catalogs, track student progress, schedule courses, establish learning paths, match students correctly with the courses they need, align training with job performance, offer flexible payment options, and support multiple languages.

- Docent was one of the pioneers to offer a delivery architecture that is flexible enough to allow users to download content to handheld devices, such as palmtops, supporting just-in-time training and information delivery to mobile employees or field workers.

- Docent's branding strategy, superior product, and established corporate client base make Docent a strong candidate for market leadership in the e-learning technology market.

Company Profile

Docent develops a suite of learning management systems, course assembly tools, and other enterprise-level software for creating, deploying, and managing training over the Internet, intranets, or extranets. The Company's strategy is to offer a complete solution for enhancing customer education and customer interaction through sales, service, and support organizations targeting Global 2000 corporations, primarily in the technology, financial services, and healthcare industries. With its Docent Enterprise 4.0, the Company provides a framework for companies to design and deliver seamlessly integrated courseware along with results measurement and integration into other enterprise applications. Enterprise 4.0 allows students to register, manage their personal learning plans, and track their progress without third-party intervention while allowing managers to administer courses, track and assess student needs, and monitor performance. The product is based on a highly scaleable open architecture, supports all Web standards, and does not require client-side plug-ins.

Enterprise 4.0 consists of five integrated modules: 1) Docent™ Learning Management Server (LMS) manages all aspects of learning administration such as manager and employee self-service for enrollment, competency management, profiling, curriculum management, notification, and results tracking. The

Docent LMS manages both online and traditional instructor-led training events; 2) Docent™ Content Delivery Server hosts the client's library of online content and assessments, and includes detailed tracking of course statistics, assessments, and student activity through standard browsers; 3) Docent™ Desktop for Developers assembles and publishes customized, Web-based courseware that can integrate existing company materials, e.g., CBT courses, Word documents, and PowerPoint presentations. It includes two components, Docent Outliner and Docent Publisher; 4) Docent™ Mobile aims at providing remote and mobile users with the same learning experience as networked users via offline or disconnected course delivery and CD-ROM course distribution. Student data is captured locally offline and synchronized with a Docent Server when a student reconnects with the network; 5) Docent Reserve provides optional integrated resource management, scheduling, conflict resolution, and optimization. Enterprise 4.0 is priced on a seat basis. Cost per user for 1000 users is $90 plus an annual maintenance fee of 20% of the purchase price.

To create customized learning solutions, Docent also offers consulting services, integrated resource management, PDA integration, customized ecommerce and assessments, user interface modifications, standard and customized client education, and technical support. In addition, Docent recently introduced a complete application-hosting service, adding an LSP function to the Company's product mix. For a monthly service fee, the Company's Application Service Program provides companies with a complete turnkey hosted online learning solution, including Docent applications, technology infrastructure, and day-to-day management of the hosted environment. Docent's partners include Hewlett Packard, Ariba, Portera, Miller Heiman, IBT Financials, C^3i, and The Richardson Company. The Company maintains offices in Mountain View, California, Plano, Texas, Burlington, Massachusetts, and Amsterdam, The Netherlands.

Major Clients

Microsoft, Schering-Plough, Pitney Bowes, Merrill Lynch, Lucent Technologies, Sun Microsystems, Boeing, McKesson HBOC, MicroAge, LSI Logic, Beckman Coulter, TIAA-CREF, Informatica, Royal Dutch Shell, AXA

VC/Affiliation Partners

Norwest Venture Capital, Advanced Technology Ventures, BancBoston Ventures, Credit Suisse First Boston, Invesco, Gilde Ventures, Arcadia Partners, Comdisco Ventures

Competition

Saba Software, Click2Learn.com, WBT Systems, Lotus Development Corp., Teamscape, Pinnacle Multimedia, KnowledgePlanet (formerly KnowledgeSoft)

EMIND.COM, LLC ▲ MANDATORY CONTINUING EDUCATION WWW.EMIND.COM

4077 Redwood Avenue
Los Angeles, CA 90066
T: (310) 823-6692

Revenues:	**NA**
Employees:	**100**
Founded:	**February 1998**
CEO:	**Howard Marks**

Highlights

- eMind.com is a leading online provider of education to the financial services and healthcare industries. The Company's strategy is to partner with clients in order create virtual corporate universities by offering a complete e-learning solution that includes an optimized mix of content, learning management, and services.

- Exclusive partnerships with professional associations, academic institutions, and other publishers of content enable the Company to offer online testing & certification, licensing, and credit.

- By targeting the mandatory continuing education market, the Company captures a source of recurring revenue that is more stable than one-time course sales.

- eMind.com pursues an aggressive growth strategy that includes international expansion and acquisitions. Along with its branding strategy and its differentiated product, this makes eMind a key player in its market niche.

Company Profile

eMind.com (formerly Yipinet) develops highly interactive, Web-based training courses in collaboration with academic institutions and associations. Course topics include accounting and taxation, insurance, banking, securities licensing, and professional development. eMind also acts as a learning portal, aggregating and distributing content from third-party developers in the areas of IT, marketing, and personal development. The Company currently offers a total of over 1000 courses, with a strong vertical focus. In early 2000, eMind will add a healthcare offering and an OSHA offering to its library of course titles. Virtually all of the Company's offerings consist of off-the-shelf content; however, custom-built courses are available to the Company's largest clients. eMind's target markets are Fortune 2000 companies and the consumer segment. Currently, about 65% of revenues stem from enterprise products, with the remaining 35% of revenues coming from individual customers.

The Company creates and manages "Knowledge Hubs," which are industry-specific Web destinations for the learning and information needs of working adults. They are targeted to professionals seeking mandatory continuing education. The purpose of these Knowledge Hubs is not only to offer courses but also to provide professionals with industry information and enable chats with experts in various fields

through "Ask the Experts" and "Leaders" features. Knowledge Hubs also include research tools, news, and job banks. The Company's goal is to be more than an e-learning portal by taking a broader approach to learning and offering more value-added services. Through its Knowledge Hubs, eMind is also pursuing ecommerce, advertising, and sponsorship revenue opportunities. In addition, the Company offers consulting, hosting, implementation, and content conversion services, as well as an in-house developed learning management system and authoring tool, which are free to eMind's corporate clients.

Individual users buy courses on a per-course basis or through an unlimited annual license. Course fees range from $40 to $120, depending on the number of units offered. Prices for enterprise products are negotiated on a case-by-case basis, varying between $20,000 and $1MM per contract, depending on course usage. eMind has established several relationships with professional associations, such as state CPA associations, and is certified by the National Association of State Boards of Accountancy (NASBA) to offer continuing education credits. The Company's content partners include SkillSoft, NETg, Edward Fleur Financial Education Company, University of Massachusetts Medical School, AICPCU, Grant Thornton, and Dearborn. eMind maintains offices in Los Angeles, CA, Princeton, NJ, and Toronto, Canada.

Major Clients

Arthur Andersen

VC/Affiliation Partners

Rader Reinfrank & Co., Knowledge Universe

Competition

Click2learn.com, TrainingNet, Headlight.com, HungryMinds.com, Learn2.com, University.com

HEADLIGHT.COM ▲ TARGETING SMB MARKET

WWW.HEADLIGHT.COM

540 9th Street, 2nd Floor
San Francisco, CA 94103
T: (415) 306-0222

Revenues:	**NA**
Employees:	**50**
Founded:	**June 1998**
CEO:	**Peter Mellen**

Highlights

- With nearly 3000 online courses in 19 learning channels in the areas of IT training, IT certification, and business skills, Headlight.com has aggregated one of the largest collections of training courses available on the Internet.

- Headlight's Web-based learning management system allows managers and individuals to personalize training curriculum from multiple publishers and track course progress of their employees and/or themselves. The Company's goal is to create a one-stop-shop that simplifies the purchase and management process by eliminating a manager's need to use multiple sites for training.

- Through new partnerships, Headlight.com is expanding into Europe and Asia and expects to offer content to businesses in those regions within twelve months.

- Headlight.com has the potential to secure a first-mover advantage in the content consolidation business. By targeting small- and medium-sized businesses, which employ approximately 60% of the U.S. workforce and tend to adopt e-learning more quickly than large corporations, Headlight.com is attacking a huge, under-served market. Given the Company's large number of course offerings and strong branding strategy, Headlight.com is a candidate for market leadership in its segment.

Company Profile

Headlight.com is a leading e-learning portal targeting small-to medium-sized corporations (SMB) and the consumer/continuing education market. The Company has aggregated nearly 3000 off-the-shelf training courses on a variety of business-related topics, including IT certification, programming, operating systems, network administration, database management, Internet literacy, desktop training, sales, finance, strategic planning, general management, and personal development. Headlight.com also provides tools that enable companies and individuals to effectively manage and track the learning process.

Headlight.com courses do not require any downloads or installations and are delivered from the Company's servers to the user's Internet browser, requiring a 28.8kbps modem. Headlight.com's database is searchable by price, bandwidth, learning approach, and publisher. This, combined with the creation of a unique user profile, enables Headlight.com to offer its "custom learning paths," which allow for courses to be tagged and tailored to individual users. Free skills assessment offered on the site generate specific course recommendations tailored to each user's unique learning needs, so that content is provided only in

areas with which users are unfamiliar. The Company's free "My Profile" allows a student to keep track of recommended courses, courses in progress, completed courses, and assessment results. The user can start and stop courses as often as needed, and then return to review them as desired. In addition, Headlight.com offers registration, enrollment services, and free learning management services, enabling customers to track the progress of their employees and assess the effectiveness of the training programs. These tools, along with "My Team," are offered to managers to facilitate purchasing, assigning, and tracking training efforts.

Course fees range from $12 to $149, which includes tracking tools. Additional revenues are generated through sponsorships, advertising, and ecommerce. To gain access to content, the Company enters distribution agreements with leading content providers serving small- and medium-sized businesses, with whom it shares resulting revenues. Headlight.com has partnerships with leading publishers of content, including Ninth House Network, NETg, Ziff-Davis Education, and SkillSoft. Moreover, Headlight.com teams up with portals and LSPs, such as Learn2.com and Brainbench, to give its customers access to additional training content and IT certifications. Some of the Company's distribution partners driving traffic to Headlight.com through links and marketing promotions include Compaq, NBCi, Alta Vista, Office.com, and Concentric Networks.

Major Clients

Hundreds of small and medium-sized businesses

VC/Affiliation Partners

Draper Fisher Jurveston, Silicon Valley Band of Angels

Competition

Click2learn.com, TrainingNet

INTERWISE ▲ VIRTUAL CLASSROOMS **WWW.INTERWISE.COM**

2334 Walsh Avenue
Santa Clara, CA 95051
T: (408) 748-7800

Revenues:	**NA**
Employees:	**150**
Founded:	**1994**
CEO:	**Hillel Kobrinsky**

Highlights

- InterWise's strategy is to develop an Internet-based architecture that focuses on optimal use of bandwidth to deliver course content, two-way full duplex audio, and live applications sharing in a real-time online classroom to students over any connection speed.

- The Company pioneered the use of studio-type production and recording capabilities that allow companies to capture, edit, and re-purpose recordings of live online classes delivered through InterWise. This allows businesses to produce and distribute reusable instructional segments and self-paced lessons with "instant" turn-around time and low development costs.

- InterWise recently won a Crossroads 2000 A-List Award for its instructor-led online learning product Millennium 2.0.

- The Company's highly interactive, flexible, and scaleable delivery platform and its aggressive international expansion should allow InterWise to reach critical mass of market share quickly.

Company Profile

InterWise develops virtual classroom technology targeting mostly multinational corporations and academic institutions. The Company's flagship product is Millennium 3.0, a suite of software products and services enabling live, synchronous instructor-led training over the Internet. It consists of four integrated software components: InterWise Instructor, InterWise Student, InterWise Campus, and the Millennium Server. InterWise Instructor enables instructors to take advantage of the same broad range of instructional techniques and interactivity they would use in a physical classroom. Content materials can be developed in formats, such as PowerPoint, Microsoft Office, Web sites, video/audio clips, CBT, PDF files, or any other desktop application. The materials are presented to student desktops via a whiteboard with live drawing tools. Instructors interact with students via public or private two-way audio, written notes and online polling, questions, and tests. InterWise's Class-at-a-Glance user interface allows the instructor (and students) to see and monitor each student as they would in a traditional class. In addition, the system supports breakout sessions during a class, multiple instructors, remote application sharing, and peer-to-peer interaction through threaded messaging.

The InterWise Student interface comprises five buttons allowing students to raise their hands, write a note to the instructor or a co-student, anonymously flag the instructor to speed up or slow down, and take control of the whiteboard pointer when given the floor to speak. Students can view materials presented on their whiteboard with an optional streaming video of the instructor and be given multiple opportunities to respond to formal and on-the-fly polls, questions, and tests. Other technical features include: 1) push

capability (course materials are automatically and invisibly downloaded to student desktops in advance of class, keeping live streaming at class time to a minimum and allowing students with 28.8 modem connections to have the same experience as students on T1 lines); 2) multi-stream unified time code (enabling complete synchronization among audio, video, and data so individual student experiences will not vary with connection speed); 3) proxy tree architecture (allowing the system to scale to an unlimited number of concurrent students around the world); 4) InterWise Servers (automatically use the appropriate protocol combinations to support students connecting through dial-up connections and students behind firewalls with various configurations), and 5) e-business integration (embeds live or prerecorded e-learning sessions into clients' Web sites to reach customers, partners, and employees).

In addition to its Millennium platform, the Company offers LiveCycle Services, a suite of services that include needs assessment, project planning, implementation management, product training, instructional design for live e-learning, event preparation, just-in-time support, and on-air event monitoring. InterWise also provides a customized, fully-hosted solution of its Millennium product suite. Millennium 3.0 is priced based on named users or usage, with quarterly, annual, or perpetual licenses starting at $15,000, depending on scale. In 1999, the Company moved its headquarters from Tel Aviv, Israel, to Santa Clara, California. In addition, InterWise has offices in New York, Switzerland, Germany, France, Greece, Israel, Singapore, Japan, and South Africa.

Major Clients

Applied Materials, SAP, Bank Leumi, Bristol-Myers Squibb, DDS, Ford, Institute for Law and Justice, PelelPhone Communications (Motorola), The Tefen Group

VC/Affiliation Partners

NA

Competition

Centra Software, LearnLinc Corporation, Lotus Development, PlaceWare, WebEx

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11490 Commerce Park Dr., Suite 400
Reston, VA 20191
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Revenues:	**$6 MM (CY 99)**
Employees:	**~130**
Founded:	**December 1999**
CEO:	**Alan Todd**

Highlights

- KnowledgePlanet.com is the first company to offer a technology platform – the KP2000 Workforce Performance Management System – integrated with a B2B eLearning Marketplace where training and HR professionals can evaluate and purchase training products and services provided by a variety of training vendors. The key feature of the Company's eLearning Marketplace is that it provides quality ratings for courseware from different content providers.

- The Company's goal is to bring together suppliers and buyers of e-learning content, remove inefficiencies in the training purchasing and deployment process of large corporations, and provide a total solution for workforce development and performance improvement under a single contract.

- KnowledgePlanet.com is positioned to become a key player in the e-learning industry through its ability to provide a complete e-learning solution comprised of a scaleable enterprise management platform, custom content, and professional services.

Company Profile

KnowledgePlanet.com, a company recently formed through a merger of four companies: KnowledgeSoft, Kobbix, MindQ, and Interactive Studios, aggregates and custom-designs content, develops learning management systems, and provides application hosting and other services to Fortune 1000 companies. The Company's main products, KP 2000, a Workforce Performance Management (WPM) system, and eLearning Marketplace are sold together on a subscription basis. eLearning Marketplace is a portal site where organizations find thousands of Web-based training courses, mainly in the areas of IT training, that have been adapted to run on the Company's KP 2000. eLearning Marketplace is designed to streamline the evaluation, purchasing, implementation, and tracking processes associated with implementing third-party content. The site organizes content and communities by business channels, such as IT or Leadership and Management, and by vertical industry channels such as Financial Services. On the Marketplace Web site, subscribers can locate, try, and evaluate courseware from various vendors and read ratings assigned by KnowledgePlanet's analysts and other Marketplace members. While KnowledgePlanet's offerings are targeted towards large corporations, any individual can make course comparisons and evaluations on the Web site. Members can also learn about trends in workforce training and collaborate with other professionals responsible for workforce performance issues.

The key difference between KnowledgePlanet and e-learning portals is the underlying KP2000 WPM system that focuses all workforce development activity on attaining skills and desired performance levels required by an organization's business strategy. Each member's secure WPM system is customized to integrate the organization's business rules, workflow, management approval, and internal human resource management system. KP2000 consists of three modules: Performance Management, Assessment Management, and Learning Management. Performance management delivers a personalized competency profile to every employee based on his/her current and required skills and the proficiency level at which a person should be performing on the job. Assessment management coordinates 360-degree evaluations and objective assessments to monitor subject knowledge as well as observations of performance improvements on the job. Learning management coordinates online learning and other training activities to help people close performance gaps. The Company offers its Web-based KP2000 WPM system in combination with the eLearning Marketplace course content primarily as an application hosted solution. If preferred, organizations can also license content and hardware and install the system on their own infrastructure.

The Company's services package includes implementation and project management, competency and skill modeling, process reengineering, systems integration, content development services, and internal marketing. KnowledgePlanet's solution is offered through a membership subscription that ranges in price from $5 per user per month to less than a dollar per user per month, based on the number of people enrolled. Customers get billed only for the courses their employees have actually used, broken down by vendor. The Company's content partners include SmartForce, NETg, DigitalThink, CyberStateU.com, DPEC, SkillSoft, eMind.com, Dearborn, and FST. KnowledgePlanet also has strategic alliances with Productivity Point International (PPI) and PeopleSoft. The Company maintains offices in Reston, Virginia, Chicago, New York, San Francisco, Dallas, Minneapolis, Atlanta, and Mechanicsburg, Pennsylvania.

Major Clients

Goldman Sachs, Morgan Stanley Dean Witter, Prudential, Fidelity Investments, Wachovia, Zurich Financial Services, Chevron, Saudi Aramco, Acxiom, Hershey Foods, Marsh Mercer, Glaxo Wellcome, Rite Aid, PeopleSoft, AMS, Convergys, Highmark, Silicon Graphics

VC/Affiliation Partners

HarbourVest Partners, Knowledge Universe

Competition

TrainingNet, Click2Learn, SmartForce, DigitalThink, NETg, KnowledgeNet, Saba, Docent, Syscom

ninth house network

NINTH HOUSE NETWORK ▲ BROADBAND COURSEWORK WWW.NINTHHOUSE.COM

550 Fifteenth Street
San Francisco, CA 94103
T: (415) 575-0950

Revenues:	**NA**
Employees:	**150**
Founded:	**December 1996**
CEO:	**Jeff Snipes**

Highlights

- Ninth House Network is the first e-learning company to provide corporate learning via a broadband media network, which may give it a significant first-mover advantage.
- The Company offers a highly interactive, movie-style e-training solution designed to create a "learning experience" within a long-term learning community.
- Ninth House Network's strategy is to build a strong brand name in the business skills arena and to integrate content, technology, a portal, and communities into a value-added, one-stop-shopping business model.
- With a high-quality product, strong management team, and a highly scaleable business model, Ninth House is uniquely positioned to become a leader in the emerging e-learning market.

Company Profile

Ninth House Network is a broadband multimedia learning network providing online business skills learning programs to Fortune 500 companies and government agencies. The Company currently offers six online learning channels accessible from the corporate desktop: leadership, management, team effectiveness, communication, project management, and business essentials, each of which include various courses on the topic. Ninth House creates personalized, highly interactive, and cinematic learning experiences using teaching techniques such as story-telling, role-playing, simulations, complex behavioral modeling, streamed videos, personalized mentor reinforcement, and case studies. All of the Company's learning programs are developed internally.

The goal of the network is to create collaborative intra-company learning communities and transform coursework into a continuing learning process. The learning channels are constantly updated with new interactive movies to encourage learners to come back regularly to play or take more courses. To provide instant learner support and develop relevant programming, Ninth House partners with leading thinkers in the business field, such as Tom Peters and Ken Blanchard, and offers Q&A features as well as personalized digital mentors, which customize the program according to each employee's learning style. In addition, the Company offers a number of value-added services, such as skills gap assessment, custom curriculum design, performance tracking and evaluation, ongoing reinforcement and mentoring, knowledge base management, systems integration, hosting, and consulting services.

Ninth House uses a scaleable deployment system and sells its complete service package on a per-seat basis for approximately $500 per annual subscription. A subscription gives the client access to the broadband environments (simulations, role-playing, interactive videos, personalized mentor reinforcement), learning programs (courses, exercises, animated case studies, and games), performance support (Web casts, instant advice feature, author talks, communities), and editorial content (articles, tips, tools). Ninth House recently formed a content partnership with best-selling author Larraine Segil to create a learning program on internal and external corporate alliances.

Major Clients

Hewlett Packard, Intel Corporation, TechData, First Union National Bank, Texaco, Black & Decker, Empire Blue Cross/Blue Shield, MediaOne, U.S. Navy, the State of New Mexico, Software Spectrum, Excite@Home, ConEdison, Insight Direct, U.S. Department of Justice

VC/Affiliation Partners

Chase Capital Partners, Merrill Lynch, Hambrecht & Quist, Arena Capital, WR Hambrecht + Co, Meta Group, Ken Blanchard Co.

Competition

Teach.com, SMGnet, Cognitive Arts, SkillSoft, Pensare, UNext.com, Provant, SmartForce

PENSARE

PENSARE, INC. ▲ KNOWLEDGE COMMUNITIES **WWW.PENSARE.COM**

5150 El Camino Real, Suite C32
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T: (650) 967-5000

Revenues: NA
Employees: ~70
Founded: Summer 1996
CEO: Douglas E. Donzelli

Highlights

- Pensare is a pioneer of the e-learning business model based on long-term partnerships with top-tier academic institutions, such as Harvard Business School, Duke University, and The Wharton School of Business. These partnerships allow Pensare to leverage this quality brand content into new channels.
- The Company's strategy includes integrating content, technology, and services to offer an interactive, complete e-learning solution and create knowledge communities tailored to specific organizations.
- The international brand recognition of Pensare's content partners positions Pensare to capture significant foreign market share.
- Pensare's branding strategy and strong partnerships, combined with short time-to-market capabilities and a highly scaleable distribution model, should enable Pensare to leverage its first-mover advantage and be aggressive in capturing the corporate market.

Company Profile

Pensare offers online business skills training in the areas of management and leadership, innovation, marketing, sales, business essentials, e-business, and finance to major corporations via the Internet. The five defining elements of Pensare's strategy are branded content, performance and applied learning tools, human interaction, cultural adaptation, and learning community platform technology. The Company uses an innovative Internet delivery technology that incorporates knowledge capture and sharing, multi-user simulations, online discussion groups, interactive exercises, courseware, and knowledge libraries. The goal is to enhance employee performance by forming intra-company "Knowledge Community™" teams, where learners share information, collaborate in study and project groups, and learn from each other. Pensare's Knowledge Community Platform is the foundation of its solution. As an Internet-native solution, it uses open standards, facilitates multi-user simulations and role-playing technology, and allows integrated customization of communities, corporate knowledge mining, and distributed action planning.

In collaboration with over 45 major brandholders among academic institutions, such as Harvard Business School (HBS) Publishing, Fuqua School of Management (Duke University), Wharton School of Business (University of Pennsylvania), University of Southern California, corporate universities, and leading authors, such as Anthony Parinello, the Company is developing a wide range of courses, including the first complete online MBA curriculum from a top-ten business school. As part of many of these agreements, Pensare will be able to resale the curricula it develops with its business school partners into other academic institutions, corporations, and corporate training and university programs, thereby increasing the scalability of the business model.

The Company's prices range from $300-$600 per seat, with discounts based on volume. Pensare also custom-designs training courses on a turnkey basis and provides hosting services, Web collaboration tools, performance support and tracking tools, mentoring, "My Learning Community" personalization, virtual events organization, and other value-added services. The Company is currently building a large online library of courses, from which corporate universities can choose and create their own customized certificate and degree-granting programs. Universities that want to start selling their own courses online will also be able to turn to Pensare to provide the needed technology.

Major Clients

Unisys, Fujitsu, Hallmark, Equistar

VC/Affiliation Partners

GE Capital (Equity Services), MediaTech Venture, AVI Management Partners, Battery Ventures, Imperial Ventures, WR Hambrecht + Co., Duke University

Competition

UNext.com, University Access, Cognitive Arts, Teach.com, eCollege, SkillSoft, SMGnet, Ninth House Network, KnowledgePlanet.com, Apollo Group (University of Phoenix)

SABA SOFTWARE, INC. ▲ LAUNCHING E-COMMERCE PLATFORM WWW.SABA.COM

2400 Bridge Parkway
Redwood Shores, CA 94065
T: (650) 696-3840

Revenues: **$6.7 MM (CY 99)**
Employees: **~300**
Founded: **April 1997**
CEO: **Bobby Yazdani**

Highlights

- With more than 2 million people licensed to learn on Saba's learning management systems and over 20,000 learning offerings, Saba is one of the early leaders in the technology segment of the e-learning market.
- The Company's Saba Learning Enterprise™ system recently won a Crossroads 2000 A-List Award in the Strategic Software Platforms category as the best, newly proven technology for "Technology Infrastructure."
- Saba's platforms are highly scaleable, standards-based, and content-neutral. They support the procurement, deployment, and management of learning in many languages.
- Saba provides a well-rounded combination of branded e-learning infrastructure and value-added services. Coupled with its aggressive international growth strategy, Saba is well positioned to expand on its market leadership.

Company Profile

Saba Software offers an integrated range of Internet-based learning network products and services to Global 5000 companies, government agencies, and learning providers. The Company's three product groups include Saba Learning Enterprise™, Saba Learning Provider™, and Saba Learning Exchange™. Saba Learning Enterprise is an open, Internet-based learning management system that allows corporate customers to establish knowledge and competency goals, assess the learning needs of individuals and organizations, select and purchase online and off-line learning materials and programs, measure and track individual learners' progress, and manage enterprise-wide learning initiatives and processes. Saba's goal is to enable clients to cost-efficiently procure and deliver learning and to close knowledge and competency gaps throughout client companies' extended enterprises, including customers, suppliers, partners, and employees. Saba Learning Enterprise is also available as a completely outsourced, Saba-hosted solution, called Saba Learning e-Enterprise.

Saba Learning Provider is an Internet-based learning network that enables internal and external learning providers to develop, sell, and distribute online and off-line learning content and programs to organizations worldwide. Using Saba's software, providers can access demand, market their content to organizations, transact with ecommerce capability, deliver online learning, manage classrooms and supplies for off-line learning, and take advantage of multiple reporting capabilities to better manage their businesses. The system also manages and allocates learning resources such as registration, classroom and

instructor availability, instructional material fulfillment, and online learning delivery. Moreover, Saba recently launched Saba Learning Exchange, a global, Internet-based B2B learning marketplace, designed to enable businesses, governments, and learning providers to buy and sell learning offerings and collaborate within learning communities. Product features include comprehensive search capabilities, access to private learning networks and offerings via secure pass codes, chat rooms and discussion groups, and ecommerce capabilities. Saba also offers a full range of management consulting, business process reengineering, technical implementation consulting, education, and support services.

To achieve a high content compatibility with its learning management system, Saba has built a large network of content partners, including SmartForce, SMGnet, NETg, DigitalThink, Cognitive Arts, SkillSoft, Provant, Headlight.com, TrainingNet, Catapult, and IEC. The Company's facilities are located in 13 major U.S. cities and in Australia, Canada, Germany, India, and the UK.

Major Clients

Cisco Systems, Lucent Technologies, DaimlerChrysler, Ford, GE, Hyundai, 3Com, Procter & Gamble, Qwest Communications, BMC Software, Adobe, Paine Webber, Wells Fargo, PriceWaterhouseCoopers, Continental Airlines, US West, Anheuser-Busch, U.S. Dept. of Veterans Affairs

VC/Affiliation Partners

Sequoia Capital, Crosslink Capital, Internal Investors, Comdisco Ventures, BancBoston Robertson Stephens, Berkeley International Capital Corp.

Competition

Docent, Click2Learn.com, KnowledgePlanet (formerly KnowledgeSoft), Lotus Development Corp., WBT Systems, Pinnacle Multimedia, Teamscape

smgnet

SMGNET, INC. ▲ SYNCHRONOUS LEARNING WWW.SMGINC.COM/SMGNET

3624 Market Street
Philadelphia, PA 19104
T: (215) 387-4000

Revenues:	**$4MM (CY 99)**
Employees:	**~60**
Founded:	**November 1996**
CEO:	**Robert Brodo**

Highlights

- SMGnet's strategy is to create long-term strategic performance development systems by integrating competency design & measurement, learning experiences featuring highly interactive multimedia business simulations, learning communities, career development, and performance management.
- The Company has built a strong network of partnerships and alliances in the areas of content development, technology, and online distribution.
- SMGnet focuses on its market niche and does not plan to be everything to everybody. Through its parent company, however, SMGnet has access to a large, international customer base and complementary products, such as instructor-led training and consulting services.
- By delivering branded, value-added training programs, SMGnet has the foundation to emerge as one of the key players in the content segment.

Company Profile

SMGnet is an online training company that focuses on performance improvement. The Company is the e-training arm of Strategic Management Group (SMG), a global training and consulting firm that has been in business since 1981. SMGnet targets Fortune 500 companies and small and medium-sized businesses. The Company focuses on client functions that drive business performance, such as R&D, Sales, and Marketing. Its product mix consists of seven different product groups: 1) Finance Iqnet; 2) Project Management Iqnet; 3) PEAT (Project Environment Assessment Tool), measuring organizational climate for successful project management practices; 4) Performance 21, providing performance management courses; 5) CLEO (Continuous Learning and Education Online); 6) CareerPoint Internet, providing career and personal development planning; and 7) Business Side of e-Commerce, a business simulation and online workshop that teaches how to implement an ecommerce strategy.

SMGnet's learning modules also entail skills assessment and mastery tests. Training is delivered in small, 20-minute modules, mainly via Internet. In addition to asynchronous learning, Centra's Symposium™ platform enables the Company to offer synchronous course delivery in the form of virtual classrooms and Web-based, follow-up seminars. Although all of the Company's learning modules are off-the-shelf, SMGnet provides customization of content, needs identification, and measurement, as desired by clients. In addition, SMGnet is currently creating a "Leadership Development System," which is a combination of learning experience, learning community, and 24x7 mentoring/coaching online and includes performance development tools as well. The Company hosts all of its training services.

The Company's strategy is to provide the learner with an engaging and entertaining learning experience through multimedia simulations, streamed audio and video clips, animations, expert advice, and case studies. The goal is to make learning a part of employees' everyday life and form intra-company learning communities. The Company's performance management system is integrated into employees' e-mail and calendar system and provides both guidance and learner support on an ongoing basis. Courses are sold for $25 – $200 per user, based on volume per organization and type of course. The Company maintains offices in Philadelphia, San Francisco, Chicago, Atlanta, Washington, the UK, and Germany.

Major Clients

Boeing, IBM, Motorola, Intel Corporation, Cisco Systems, Hewlett Packard, Sun Microsystems, Federated Department Stores, U.S. Postal Service, Dow Chemical, Sprint, Exxon, GTE, Net Life, Rockwell

VC/Affiliation Partners

NA

Competition

Ninth House Network, Teach.com, Cognitive Arts, SkillSoft, Pensare, UNext.com, Provant

TEACH.COM ▲ ONE-STOP-SHOPPING **WWW.TEACH.COM**

25 Northwest Point Rd, Suite 1025
Elk Grove Village, IL 60007
T: (847) 545-0100

Revenues: NA
Employees: 150
Founded: October 1998
CEO: Elisabeth Tomaszewicz

Highlights

- Teach.com offers a full suite of off-the-shelf and custom-built e-training courses in the areas of desktop training and business skills, integrating content, technology, and services into a one-stop-shopping business model.

- Teach.com's key differentiator is its state-of-the-art courseware development infrastructure and delivery technology offering a high degree of adaptability and flexible adjustment of bandwidth without losing media quality. Its strategic relationship with Dell allows the Company to offer servers pre-configured with its SmartTrainer® architecture and training solutions.

- Teach.com is one of the strongest and most diversified players in the corporate e-learning space. Its solid client base, long experience in content development, and innovative technology and services make it a leader in the market.

Company Profile

Teach.com provides technology-delivered performance improvement training targeting Global 2000 companies, governments, and universities. The Company develops both off-the-shelf courseware, accounting for 60% of revenues, and custom-designed solutions, making up 40% of revenues, in the areas of business skills and desktop application training. Its large library includes multimedia courses in customer service, finance and business management, leadership, interpersonal skills, sales, sales management, performance management, general management, telemarketing, MS Office, MS Operating Systems, Internet browsers, and Lotus, which are deliverable through the Internet, intranets, and CD-ROM. Customized instructor-led training is available on request, but accounts for a very small part of the Company's business.

In addition, Teach.com provides skills and needs assessment, performance tracking and support tools, training effectiveness measurement, hosting, consulting, and other value-added services and tools to clients. Through a combination of instructional methods and technology, including streamed videos, multimedia simulations, role plays, scenarios, client-specific case studies, live application practice, mentoring, and guided instruction, the Company's products provide a high level of interactivity and can also be customized to employees' learning styles and situational needs. Teach.com's SmartTrainer® engine is a comprehensive self-study learning environment that incorporates a behavioral modeling approach in a Show Me-Try It format, providing pre-and post-training skills assessments and continuing performance support in the form of a Help Desk function, even after the course is completed. Learners have the option to access only those course lessons for which they did not demonstrate mastery during the pre-test.

Teach.com provides training at different bandwidths depending on the needs and capabilities of its clients. On the Internet, video streams from a separate server than the rest of the course. Content is linked to streaming video at a learner's desktop. Prices for Teach.com products range from perpetual licenses for large corporations of $1 per course per user, depending upon the number of individuals to be trained, to $150 for off-the-shelf products sold to individuals. Teach.com is the result of the 1998 merger of Anderson Soft-Teach and International Learning Systems, two companies with a 15-year history in the education and training business. The Company has offices in Elk Grove Village, Illinois, Los Gatos, California, and Golden, Colorado.

Major Clients

AT&T, IBM, Bell Atlantic, Dell, Oppenheimer Funds, New York Life, the Guardian, Enterprise Rent-A-Car, Smurfit Stone, ServiceMaster, State Farm, Bristol-Meyers Squibb, Excite@Home, Johnson & Johnson

VC/Affiliation Partners

Arch Venture, Ohio Partners, TIA CREF, Tribune Ventures, State Farm Insurance, Allstate

Competition

Ninth House Network, SMGnet, Pensare, Cognitive Arts, Digital Think, SmartForce, SkillSoft, NETg

TRAININGNET, INC. ▲ REVERSE AUCTIONS **WWW.TRAININGNET.COM**

296 Concord Road, Suite 180
Billerica, MA 01821
T: (978) 671-7500

Revenues:	**NA**
Employees:	**~115**
Founded:	**February 1999**
CEO:	**Hemang Dave**

Highlights

- TrainingNet is most likely the largest aggregator of training content in the market, offering more than 100,000 training course events annually in more than 25 soft skill and IT training categories.

- The Company's strategy is to leverage Web and intranet technology to accelerate and streamline the training selection, approval, and purchase process for corporations and professionals through its B2B ecommerce marketplace.

- In an effort to bring buyers and sellers together and make the purchasing process for corporate training more efficient, TrainingNet recently launched RFP Exchange[SM], a reverse auction where buyers can specify what custom training they need, when and where they need it, and what price they are willing to pay.

- Through a combination of an unmatched selection of training courses, various value-added services, aggressive expansion and acquisition strategy, and an experienced management team, TrainingNet is well positioned to be one of the dominant B2B learning portals on the Web.

Company Profile

TrainingNet aggregates and distributes soft skills and IT training from over 1,200 content providers. The Company offers all forms of training delivery, including classroom training (ILT), synchronous and self-paced online courses, computer-based training delivered via CD-ROM or network connection, books and training manuals, and self-study video and audio tapes. Approximately 2,500 of the Company's training courses are Web-based. Courses are organized in eight major channels: management and professional development skills, general business skills, desktop applications, Internet skills, IT training and certification, engineering, law, and industry-specific training for 16 vertical industries. TrainingNet offers its products via its Marketplace 3.0, targeting mainly the corporate segment but also the continuing professional education market. Key features of TrainingNet's marketplace include: 1) search by keyword, category, subject, delivery medium, industry, time, location, and provider; 2) RFP (Request for Proposal) Exchange for finding custom and high-volume on-site training; 3) course evaluations by past participants; 4) course filtering capabilities; and 5) personalization through "My TrainingNet."

For corporate clients, the Company offers customized slices of its online marketplace on their corporate intranets. Customized features include integration of internal and external offerings, company-specific messaging and branding, course filtering, employee personalization, electronic course approval process management, training activity analysis, reporting on spending and course evaluation, turnkey employee communication programs, and RFP Exchange, a proposal exchange designed to find the best training

resources for on-site and customized classroom training, training software and consultants, seminar and conference facilities, and volume purchasing. With its recently launched RFP Exchange, TrainingNet provides a new service that allows buyers to specify all their custom training requirements (including price, preferred providers, and how many proposals they want to receive back and by when). TrainingNet also lets buyers reach a wide range of training providers whose proposal features and prices they can compare side-by-side.

In addition to selling courseware to corporations and individuals, TrainingNet distributes its content through other leading B2B training portals, content sites, and technology companies with extensive reseller channels. These strategic partners provide co-branded TrainingNet marketplaces on their sites and/or integrate them into their products and services. Strategic partners include Dow Jones, Business Week, IDG.net, SuccessFactors.com, HeadHunter.net, Hoovers, and Kaplan Education Centers. Among TrainingNet's content providers are SmartForce, DigitalThink, CyberStateU.com, New Horizons International, ExecuTrain, ARIS Education, Learn2.com, PPI, Provant, Global Knowledge Network, IBM Learning Services, Cornell University ILR, Berlitz, and Oracle. The Company maintains offices in Billerica, Massachusetts and Vancouver, Canada.

Major Clients

Allaire, Bull Information Systems, Carolina Power & Light, CMGi, Diebold, Harley-Davidson, Harvard University, Hill-Rom, Genzyme, Levi Strauss & Co., Lockheed Martin, Lotus, Mercedes Benz, NewsEdge, Sybase, Volvo

VC/Affiliation Partners

Charles River Ventures, Bessemer Venture Partners, Blue Rock Capital

Competition

KnowledgePlanet.com, Click2learn.com, Headlight.com, University.com

UNEXT.COM ▲ ONLINE MBAS

WWW.UNEXT.COM

500 Lake Cook Road, Suite 150
Deerfield, IL 60015
T: (847) 405-5000

Revenues: NA
Employees: 100
Founded: November 1997
CEO: Andrew M. Rosenfield

Highlights

- UNext.com's strategy is to incorporate academic content from premier universities, such as Columbia University and Stanford University, to create executive training and a complete MBA program for multinational corporations seeking to develop and enhance human capital.
- The Company's proprietary technology allows students to form collaborative learning communities utilizing synchronous and asynchronous communication.
- UNext's global strategy, branded content, and scaleable business concept should allow the Company to garner market share quickly, once it has ramped up its operations.

Company Profile

UNext.com was created to provide online business education in the areas of accounting, finance, marketing, international business, and other parts of a standard business curriculum to large corporations. It plans to offer complete MBA programs through its Cardean online university as well as single classes to learners who want to improve specific skills. UNext applies a "learning-by-doing" approach, using highly interactive and media-rich teaching methods, such as multimedia simulations, video clips, collaborative exercises, case studies, real-time online mentoring, and labs, with the goal of creating virtual learning communities. In addition, students work with textbooks, write essays, submit problem-solving assignments, and take exams. The Cardean platform provides tools that allow constant revision and updating of course material, continuous skills assessment, and tailoring of learning interactions to match students' capabilities and learning style.

UNext develops its academic course content in conjunction with leading institutional partners, such as Stanford University, Columbia University, University of Chicago, Carnegie Mellon University, and the London School of Economics. Cardean University is accredited by the Commission of the Distance Education Training Council (DETC), which is listed by the U.S. Department of Education as a nationally recognized accrediting agency. UNext courses have undergone a comprehensive testing process and are constantly reevaluated for quality content and efficacy.

UNext will sell its classes at a certain discount to top instructor-led academic business programs. While the Company currently targets the B2B market, it plans to sell classes to the consumer markets in the future and to expand its course offerings beyond business education. UNext's technology partners include USI, Oracle, and IBM-Lotus. UNext.com was originally funded by Knowledge Universe, which still has a 20% non-voting interest in UNext. The Company maintains offices in Deerfield, Illinois, and Bloomington, Indiana.

Major Clients

IBM, A.T. Kearny

VC/Affiliation Partners

Knowledge Universe, Pritzker Organization, Gleacher & Company

Competition

Pensare, University Access, Cognitive Arts, eCollege, Teach.com, Apollo Group, SMGnet, SkillSoft, KnowledgePlanet.com

WBT SYSTEMS ▲ TOP CLASS **WWW.WBTSYSTEMS.COM**

Reservoir Place, 1601 Trapelo Road
Waltham, MA 02154
T: (781) 839-2800

Revenues: **<$10 MM (CY 99)**
Employees: **~75**
Founded: **1995**
CEO: **Peter Zotto**

Highlights

- WBT Systems is a leading learning management software provider selling its products in over 20 countries worldwide. With 40-50% of its revenue stemming from international markets in Europe, Asia, and Australia, the Company has already a great deal of international visibility, giving it an edge over most domestic e-learning technology providers.

- With its TopClass Server, WBT Systems owns a viable brand product that is one of the most popular training management systems designed for the Internet. It is currently installed on over 600 sites of both large corporations and academic institutions. Around 2 million users have taken courses based on the TopClass infrastructure.

- The Company has built a flexible, open Web-native system based on its "learning objects" architecture that can easily be adjusted to any industry standard that emerges.

- WBT Systems has an experienced management team that is aggressively pushing forward the Company's national and international expansion. In combination with a brand product and a solid client base, this gives WBT Systems a strong foundation to be a market leader in the technology segment of the training industry.

Company Profile

WBT Systems develops the Web-based learning infrastructure platforms and authoring tools that enable organizations to deliver training content to large numbers of learners over the Internet or intranets, and to manage the entire training process, from registration through testing and certification. The Company is targeting Global 2000 corporations, government agencies, and higher education institutions, both in the United States and abroad. WBT Systems' lead brand is the TopClass family of products that include a training management system, authoring tools, certification technology, and support services designed specifically for the Web. The TopClass Server provides course and content delivery and management, administration, progress tracking, and certification and auto testing capabilities to evaluate students and customize their course material based on performance. In addition, WBT offers personalization and collaboration capabilities based on its "learning objects" architecture. TopClass can also be used to assist instructor-led classes.

The Company's new product group, TopClass Publisher Studio, provides a bundle of development and publishing tools to aid the creation of content for delivery using the TopClass Server system. It allows organizations to set up complete environments for creating and testing new courses. TopClass Publisher is an authoring tool that allows the development of courseware created from any Web-compatible content without programming or knowledge of HTML. TopClass Publisher can also use any existing creation tools, such as PowerPoint, Dreamweaver, or FrontPage, to create and edit pages within a course. TopClass Assistants convert Microsoft Word and PowerPoint documents into TopClass courses. TopClass Player allows for offline testing of courses. Through TopClass Training, TopClass Support, and TopClass Consulting, the Company offers a number of professional services to assist and guide clients throughout the implementation process. Services include customization and large scale deployment as well. WBT leases its software on a per employee per annum basis, generally for 3 year contracts. Prices range from $40 per user down to $10 per user per year. A 10 course developer TopClass Publisher Studio license would often be included with the price of the system. Above 10 users, the price is $1000/user.

WBT Systems' strategy is to focus on providing e-learning infrastructure and to leverage its main area of expertise. However, to complement its products and services and provide clients with complete e-learning solutions, WBT Systems has built a large network of partnerships with custom content developers such as NETg and Pinneast.com, publishers such as McGraw Hill and Macmillan; technology vendors, such as Centra Software and Sun Microsystems; and value added resellers, such as RWD Technologies, Edutec (Germany/Switzerland), Hyper (Korea), and New Africa Technology Holdings (South Africa). In the past quarter, WBT has signed agreements with Oracle, Nokia, Deakin Global, and PriceWaterhouseCoopers, which gives the Company access to another 1 million plus users. Originally founded in Dublin, Ireland, the Company recently moved its headquarters to Waltham, Massachusetts. WBT also maintains offices in San Francisco and Dublin, Ireland.

Major Clients

Dow Chemical, Nokia, Oracle, Price WaterhouseCoopers, Deakin Global, The Money Store, McGraw Hill, First Union Bank, Bayer AG, University of Kentucky, State University of New York (SUNY), University College Dublin, University of Technology Sydney

VC/Affiliation Partners

3i Group, Delta Partners

Competition

Lotus Development, Docent, KnowledgePlanet (formerly KnowledgeSoft), Saba, Teamscape, Click2Learn.com

GLOSSARY

Application Service Provider (ASP)

An application service provider is a specialized form of an Internet service provider (ISP) that allows a company to have a software application hosted via a rental fee. An ASP sells access to a "packaged application" that it typically will license from an applications vendor. The software license is paid for up front and/or on a fee basis. ASPs provide IT operations expertise (offering the necessary application functionality, hardware, database and networking services, etc.) and frequently also business operation expertise in a particular market niche or in a particular functional area (such as human resources or logistics management). Sophisticated ASPs bundle value-added content, such as benchmarking data and patent information, and/or service trading communities and other groupings of companies, such as industry consortiums, that want to share information and the cost of technology.

Asynchronous learning

A learning event in which people are not online at the same time and cannot communicate without time delay. Examples are self-paced courses taken via Internet or CD-ROM, Web presentations, videotaped classes, streamed audio/video presentations, Q&A mentoring, online chats and discussion groups, and e-mail.

Authoring tools / authoring systems

Software applications for creating course interactive material. Authoring tools are designed to help the user create online modules that bring together all components of a course: text presentations, graphics, links, questions, and tracking of student performance. They also let the user add materials created in other software, such as video and audio clips, specialized graphics, and animations. Types of authoring tools include instructionally focused authoring tools, Web authoring and programming tools, template-focused authoring tools, knowledge capture systems, text and file creation/linkage systems, etc.

C-learning

See Instructor-led training.

Certification

Professional certification is a screening tool and a measurement of skills and knowledge. Certification credentials give employees and clients proof of an individual's level of specialization in his or her field of work.

Community

See Online community.

Computer-based training (CBT)

Course or educational material presented on a computer, primarily via CD-ROM or floppy disk. Unlike Web-based training, computer-based training does not require a computer connected to a network and does typically not provide links to learning resources outside of the course.

Content	The intellectual property and knowledge to be imparted. It consists of the course outline, text-based knowledge modules for learning, and multimedia. Content is the most important investment and asset of e-learning. Different types of e-learning content include text, audio, video, animation, and simulation content.
Distance learning	Educational situation in which the instructor and students are separated by time, location, or both. Education or training courses are delivered to remote locations via synchronous or asynchronous means of instruction, including written correspondence, text, graphics, audio and videotape, CD-ROM, online learning, audio and video-conferencing, interactive TV, and facsimile. Distance learning does not preclude the use of the traditional classroom. The definition of distance learning is broader than and entails the definition of e-learning.
E-learning **= Technology-based learning**	Covers a wide set of applications and processes such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio/video tape, satellite broadcast, interactive TV, and CD-ROM. In this report, the term e-learning is used synonymously with technology-based learning.
ERP application training	ERP stands for enterprise resource planning. ERP applications training is an area of IT training which combines training on accounting software, project management software, maintenance management software, and human resource management and payroll software.
E-training	See Technology-based training.
Extranet	A local area network (LAN) or wide area network (WAN) using TCP/IP, HTML, SMTP, and other open Internet-based standards to transport information. An extranet is only available to people inside and certain people outside an organization, as determined by the organization.
Hosting **=Web hosting**	Outsourcing of the technology and commerce parts of a company's Internet-based learning system to an outside organization.
Instructor-led training (ILT) **= C-learning**	Standard face-to-face training in a classroom or lab. The term instructor-led training is used synonymously with on-site training and classroom training (c-learning).
Internet	Worldwide network of networks that are connected using special communication protocols such as TCP/IP and SMTP/MIME. It provides e-mail, file transfer, remote log-in, news, and other multimedia hypertext services. The Internet is also the TCP/IP-based interconnection of servers worldwide that provides communications and application services to an international base of businesses, consumers, educational institutions, governments, and research organizations.

Internet-based training

= Web-based training (WBT)

= Online training

Delivery of educational content via a Web browser over the public Internet, a private intranet, or an extranet (LAN/WAN). Internet-based training provides links to learning resources outside of the course, such as references, e-mail, bulletin boards, and discussion groups. It provides the advantages of computer-based training (CBT) while retaining advantages of instructor-led training. The term Internet-based training is used synonymously with Web-based training and online training.

Intranet

A local area network (LAN) or wide area network (WAN) using TCP/IP, HTML, SMTP, and other open Internet-based standards to transport information. An Intranet is owned by the corporation and only accessible to people working internally in an organization. It is protected from outside intrusion by a combination of firewalls and other security measures.

IT training

Refers to a combination of desktop training and information systems/technical training. It includes training in areas such as: 1) system infrastructure software (network management, security software, system-level software, system management software, middleware, serverware, etc.); 2) application software (word processing, ERP application training, sales force automation, e-mail, groupware, conferencing software, desktop publishing, industry-specific applications, etc.); and 3) application development tools (information access tools and programmer development tools).

Knowledge management

Refers to capturing, organizing, and storing knowledge and experiences of individual workers and groups within an organization and making it available to others in the organization. This includes formal corporate information (policies, procedures, and product information), informal information (documents, reports, presentations, and proposals), and expertise (recorded in documents like lessons learned, stories, and case histories). The information is stored in a special database called a knowledge base.

Learning portal

Any Web site that offers learners or organizations consolidated access to learning and training resources from multiple sources. Learning portals can be grouped into content consolidation portals, embedded technology portals, internal portals, community & collaboration portals, and affiliation portals. Operators of learning portals are also called content aggregators, distributors, or hosts.

Learning Service Provider (LSP)

An LSP is a specialized type of ASP offering learning management and training delivery software on a hosted/rental basis via diverse business models. There are four different types of LSPs: 1) full service LSPs (customizing, implementing, and hosting a complete software solution via a private network); 2) content specific LSPs (licensing content to an organization and providing a level of learning management services to the buyer); 3) tool specific LSPs (licensing and hosting their specific system to an organization); and 4) portal LSPs (hosting a portal site and bundle the learning system in the background). LSPs also include value-added resellers (VAR) and companies providing certification and testing services, online collaboration services, media production and delivery services, and online tutoring.

Multimedia

Encompasses interactive text, images (animated, still, graphics, photographic, streaming), sound, and color. Multimedia can be anything between a PowerPoint slide show and a complex interactive simulation.

Online community

Online communities are meeting places for learners on the Internet designed to facilitate interaction and collaboration among people who share common interests and needs. Most are drawn by the opportunity to share a sense of community with like-minded strangers, regardless of where they live. Intra-company communities can be distinguished by goal: there are communities of practice (employees within the same practice or department sharing information), communities of learning (study groups), and communities of purpose (project groups, product development groups, etc.).

Online learning / training

See Internet-based training.

Portal site

See Learning portal.

Simulations

Highly interactive applications that allow the learner to model or role-play in an actual scenario or business situation. Simulations enable the learner to practice skills or behaviors in a risk-free, simulated environment.

Soft skills training

Encompasses education on specific business areas, such as communications and presentation skills, leadership and general management skills, human resources, sales and marketing, professional development, project and time management, customer service, team building, administrative skills, accounting and finance, purchasing, and personal development, with the goal of improving the knowledge and performance of employees. For the purpose of this report, it comprises all kinds of training that are not related to IT or PC applications training.

Synchronous learning	A real-time, instructor-led online learning event in which all participants are logged on at the same time and communicate directly with each other. Synchronous learning is led by an instructor who maintains integrated classroom control, with the ability to "call on" participants who raise their electronic hands from a distant location. Students and teachers use a "white board" to see work in progress and share knowledge. Content can be delivered using live online courses (virtual classrooms), audio/video conferencing, Internet telephony, and two-way live broadcasts of lectures to students in a classroom.
Technology-based training (TBT) = E-training	Includes the delivery of content via Internet, intranet/extranet (LAN/WAN), satellite broadcast, audio/video tape, interactive TV, and CD-ROM. Technology-based training includes computer-based training (CBT) and Web-based training (WBT). For the purpose of this report, the term technology-based training is used synonymously with e-training.
Text-based training	Includes the delivery of content through books and manuals.
Training	The act of teaching or learning new information, behavior, skills, or actions that can be used to perform job-specific tasks or improve performance.
Training management systems	Internet-based software that deploys, manages, tracks, and reports on interaction between a) the learner and the content, and b) the learner and the instructor. In particular, training management systems perform student registration, track learner progress, record test scores, and indicate course completions, and finally allow instructors/trainers to assess the performance of their students.
Value-added services	Value-added services in the context of the e-training industry include custom training needs assessment and skill gap analysis, curriculum design and development, pre- and post-training mentoring and support, training effectiveness analysis, reporting and tracking tools, advisory services and implementation consulting, hosting and management of Internet/intranet-based learning systems, integration of enterprise training delivery system, etc. Deployment and ranking of value-added services vary between the IT training and soft skills training market segments considerably.
Web-based training (WBT)	See Internet-based training.

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