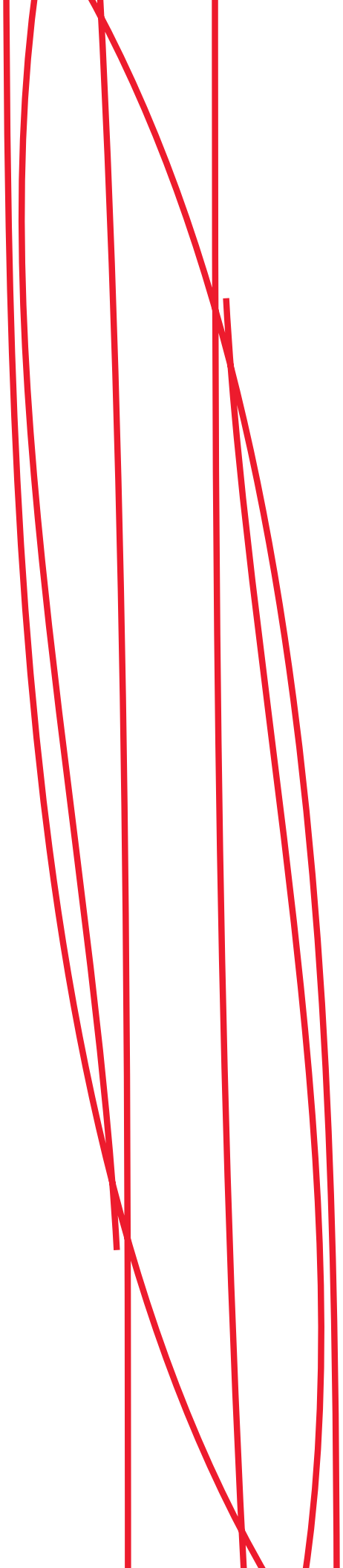

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Re-Learning e-Learning

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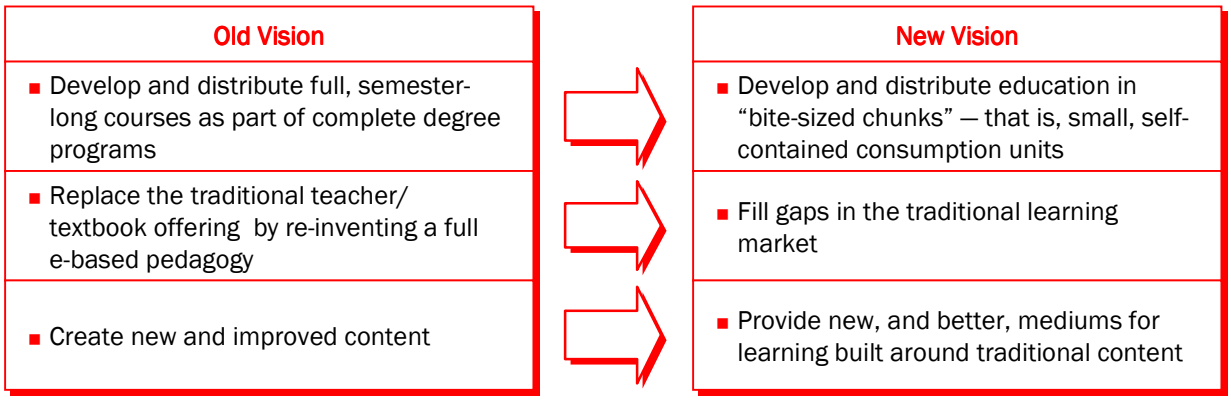
As the dust drifts down around us from the remains of the dot-com demolition, viable e-commerce business models can seem more rare than a snowball in Silicon Valley. And like many other over-hyped "revolutions" of the halcyon bubble days, e-Learning has fallen on hard times.[1] We took this opportunity to look back at the click-and-drag curricula and virtual classrooms of the Internet-enabled learning era just past. What did the dozens of failed e-Learning businesses do wrong? We believe most were based upon a skewed understanding of exactly *who* consumes education in the US, *what role* education plays in their lives, and *what factors* influence purchase decisions.

What we have learned from the past e-Learning era is that electronic pedagogy is manifestly *not* a substitute for real teachers in real classrooms. Rather, we believe e-Learning will realize its true value as a *supplement to and enhancement of traditional methods*. By re-learning e-Learning, we can shift focus away from an irrationally exuberant vision to a new, more achievable one — one that outlines three principles that we believe can guide e-Learning providers towards success in the future.



Source: Booz Allen Hamilton

The Classroom: Segmenting the Education Market

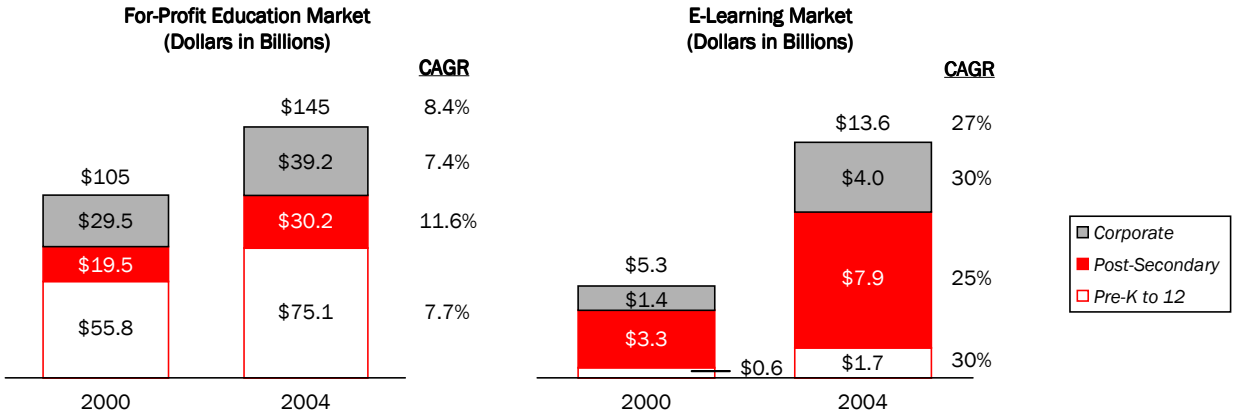
The for-profit education market in the U.S. is over $100 billion in revenue and is dominated by K–12. The key segments of on-line, post-secondary and corporate training constitute a $4.7 billion market — not including an additional $3 billion corporations spend on CD-ROM-based modules. While growth rates have been scaled back somewhat since last year, forecasters predict the total e-Learning market will be in the $12–14 billion range by 2004 (See Exhibit 1).

Consumers of education — "learners" and "educators" — can be usefully divided into five broad segments: School, Higher Ed, Professional, Corporate, and Lifelong Learners (See Exhibit 2). Each has a distinct set of customers and needs, leading in turn, to a different role for e-Learning. In the most simplistic view, the goal of education is to impart knowledge from the educator to the learner. However, there are a wide range of goals in the education space (e.g., social status, earning employment credentials, personal enrichment). The

[1] For the purposes of this Viewpoint, we define e-Learning as any network-hosted content and applications intended to impart knowledge, as well as any content in digital form requiring responses from the learner (e.g., educational CD-ROMs).

importance of these factors varies across segments resulting in a differential impact on purchase decisions. At the same time, constraints on both time and resources are often key decision factors.

Exhibit 1
Education Market



Notes: Post-Secondary includes Higher Ed, Professional, and Lifelong Learning; Corporate excludes internal development & delivery; Corporate e-learning training includes $3 billion CD-ROM based training.
Source: Eduventures, IDC, US Bancorp Piper Jaffrey, Booz Allen Hamilton

Exhibit 2
Education Segment

Segment	Description	Key Needs of Learners and Educators
School	▪ Pre-K to 12th grade students and teachers	▪ Teacher training, full curriculum matched to state standards, textbooks, supplementals, diagnostic tools, testing, assessment
Higher Ed	▪ College and university students earning first post-secondary (e.g., A.A., B.A., B.S.) degree	▪ Textbooks, supplementals, testing, full course curriculum across broad range of subjects
Professional	▪ Professional degree seekers ▪ Professionals requiring continuous professional education to maintain accreditation or advance professionally	▪ Specialized advanced degree curriculum, up-to-date content, standardized test preparation
Corporate	▪ Students seeking specialized, job-related training–provider directly, sponsored or reimbursed by their employers	▪ Customized/specialized instructional materials and courses
Lifelong Learners	▪ General interest or leisure students, seeking education for personal enrichment	▪ Instructional materials/delivery across broad range of subjects

Source: Booz Allen Hamilton

In the School market, opportunities for e-Learning are abundant. Education is at the top of a Bush-era political agenda pushing programmatic learning and routinized assessment. This by-the-numbers approach yields an opening for e-Learning to ease test administration, grading, and even some teaching through automated diagnostic tools, customized tutoring and test preparation aids. The *sine qua non* for would-be providers is credibility: many districts have strict approval criteria for learning tools and must be convinced of their quality and pedigree.

E-Learning entrants have so far proved unconvincing. ZapMe! sought to establish itself as a full-service portal for K–12 schools, aggregating content targeted to the classroom. MamaMedia, launched with great fanfare and $50 million in funding in 1999, targeted the at-home under-12 market with so-called “edutainment” learning products. Both services ultimately failed in part due to a backlash against the encroachment of “commercialism” into education.

In the Higher Ed and Professional segments, e-Learning models stand to benefit from the growing level of technical sophistication demanded by employers. The wage gap between high school and college graduates continues to grow, graduate degrees are becoming more necessary, and continuing professional education has expanded to virtually all areas of the service sector (e.g., engineering, law, etc.). As a consequence, those

consumer segments most likely to value e-Learning — working adults who have little time but desire higher education for career advancement — continue to expand.

Unfortunately, e-Learning's early incarnations aped traditional post-secondary institutions. For example, the UNext consortium of top business schools offers diplomas from a newly-accredited institution called Cardean University. UNext spent over $1MM per course on development, but has enrolled only 3,000 students thus far and is re-negotiating its deal terms. Similarly, textbook publisher Harcourt's online "college" offered full curricula and intended to grant degrees; instead, Harcourt U dismissed class forever in July 2001.

These early attempts at Higher-Ed ignored what an economist would call the "signaling" value of education — the obvious fact that people get degrees for reasons in addition to the sheer joy of learning. Even with an identical curriculum, a degree from, say, Yale would be worth more in the job market than a degree from ABC U. or Cardean University — even if it does have brand-name partners such as Columbia University (Harcourt's online college never even received accreditation to grant degrees). These products mimicked the form, but not the function, of traditional venues; without the ability to deliver a "brand name" degree, they were all but doomed.

Looking forward, we believe the greatest opportunities for e-Learning lie within the Professional and Corporate segments, delivering highly targeted, efficient curricula designed to impart specific skills to accomplish job-related tasks. Depending upon the scope and content of the requirement, e-Learning will either fully replace or function alongside methods currently used by Professional and Corporate consumers.

The Curriculum: Three Principles of e-Learning

Having outlined the segments, channels and growth areas of e-Learning, we can now set forth what we believe to be three guiding principles that have emerged from the first phase of the industry's evolution (See Exhibit 3).

Exhibit 3
Three Principles of e-Learning

Principle	Description	Example Products
Distribute Education in "Bite-Size" Chunks	▪ Short course or modular teaching aid/ instructional device that is highly customizable to individual teacher and student requirements	▪ Single distance learning course ▪ Learning module on single topic/unit (e.g., Gettysburg Address, genomics) ▪ Audio or visual clip illustrating specific concept (e.g., "I Have A Dream" speech clip, video of first moon landing)
Fill Gaps in Traditional Education Market	▪ Instructional materials or delivery that are outside traditional models (e.g., in-person instruction based on standard published textbook)	▪ Assessment and diagnostic tools ▪ Custom workbooks/problem sets ▪ Distance learning courses for working adults ▪ Continuing professional education
Provide Better Delivery Devices	▪ Electronic version of print-based products, with added features/functionality	▪ Hyper-linked reference materials ▪ Tests, with instant scoring and customized lesson plans to aid study ▪ Class syllabi ▪ Homework assignments

Source: Booz Allen Hamilton

Principle I: Deliver Education In Bite-Size Chunks

Above all, the e-Learning consumer is practical and task-focused. Learners enroll in a virtual program to master a particular skill and most have limited time — education must be intricately scheduled within a complex *chiaroscuro* of family, work, commuting, and hobbies. Much as the milk industry goosed up its stagnating sales a few years ago with single-serve containers for on-the-go thirsters, e-Learning companies would be well advised to cultivate "single-serve" product offerings.

What is "single-serve" education? Put simply, it is education focused on a single clear subject with relatively limited scope. In many cases, it is a "learning object" — a unit or module focused on teaching a single concept. For example, a teacher might locate, download and display a short video clip illustrating a key historical event

in minutes. Or a corporation might piece together the modules required to get technology staff up-to-date on a customized CRM solution. Or a student might identify a weakness in, say, calculating sines and cosines and obtain a special tutorial.

For example, a Booz Allen-led study for MIT's Council of Education Technology found that MIT alumni were most interested in obtaining "knowledge updates" rather than degrees. Such updates could take the form of research papers, relevant articles or mini-tutorials. For the most part, these knowledge updates were desired to keep alumni up-to-date professionally and most were willing to pay for these services.

The ability to develop, manage, and distribute such a collection will be a key asset in the emerging e-Learning market. Netg, an e-Learning provider focused on the corporate training market, has already begun to reap the benefits of such capabilities. It has built a library of over 75,000 learning objects, and in the process, built valuable relationships with companies such as Daimler Chrysler and Procter & Gamble.[2]

Principle II: Fill Gaps In Traditional Education Market

We believe that traditional channels will continue to play a dominant role in the lives of most young learners in the pre-secondary market (i.e., under 22 years old) — they offer an immersive learning experience and fill a critical role in socializing young adults that could never be duplicated on-line. For these and more mature full-time students, e-Learning will only succeed to the extent that it *supplements* these channels and *fills gaps*.

Supplemental learning has existed for decades (think correspondence courses). It emerged in response to needs traditional education channels proved unable, or unwilling, to fill. Examples of learning that thrives on the margins today are test preparation programs, continuing professional education, vocational and technical training, part-time degree, and extension courses.

Principle III: Provide Better Delivery Devices

In health care, a delivery device is the mechanism through which a given therapy is administered — say, a syringe or an I.V. tube. Like therapeutic substrates, new thoughts and ideas are introduced into a learner through education "delivery devices" such as lectures, textbooks, workbooks, videos, etc. e-Learning can in some instances provide a better, more interactive and more cost-effective delivery device.

In particular, e-Learning tools are a viable substitute for print media. Advantages include easier customization, greatly expanded indexing and word-search functionality, and supplemental features such as video and audio clips, hypertext links and real-time test scoring.

The Campus: A New Model of e-Learning

Think about the three principles for a moment. Together, they posit a far more constricted view of the potential domain of e-Learning than the go-go dreams of the past. Yet, by applying the Three Principles across the learning segments outlined above, we can begin to lay out a reasoned roadmap of what lies ahead for e-Learning.

School

The role of e-Learning in the classroom will be largely supplemental — products designed not to replace teachers and textbooks, but make them more effective. In the short-term, digital classroom materials will be used primarily for presentation purposes, with teachers accessing content clips or simulations to enhance lectures and illustrate key concepts. Longer term, tools will transition to learning software used by a single or small group of students. Even more promising is the use of electronic assessment and diagnostic tools to identify weaknesses of individual students, and then create custom assignments and even tutorials. Virtual classrooms, though a relatively small opportunity, have two potential target segments: home-schoolers and rural school districts.

Outside the classroom, teacher professional development is emerging as an opportunity area, driven by a movement toward regular competency testing and accountability for student performance. A key requirement for success in this market is gaining accreditation with state departments of education to ensure that offered courses can be used to fulfill state training requirements. While a dominant leader has not yet emerged,

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[2] "Netg becomes the e-Learning provider for the University of Phoenix" *Business Wire*, March 28, 2001.

Classroom Connect, an e-Learning portal that turned its attention to professional development early on, has achieved some success. Thus far, Classroom Connect has gained accreditation from a number of major states (e.g., Texas, Illinois) and offers a wide range of courses ranging from how-to guides to continuing education units and graduate credit hours. The company was recently acquired by Harcourt, which appears to have learned a lesson or two of its own from its on-line University debacle.

Higher Ed

Full-time. As in the School segment, e-Learning will play a support role here — primarily providing supplemental materials, such as electronic syllabi, course materials and testing. Blackboard is emerging as a player in this market, furnishing tools for managing course websites and campus-wide portals as well as an e-based infrastructure for campus commerce and other infrastructure (e.g., IDs, debit accounts, etc.). So far, Blackboard has built a user base of over 3.5 million students at more than 4,000 schools across the U.S. and globally.

Part-time. This growing market represents a significant opportunity for e-Learning. However, profitability in degree-based e-Learning requires a combination of credibility and scale. E-Learning course development is often an expensive endeavor (witness the $1 million plus that UNext spent per course), requiring a combination of large numbers of students and significant tuition fees to earn acceptable returns.

Some bricks-and-mortar players have used their existing brand name to their on-line advantage. The University of Maryland, for instance, has enjoyed significant success in attracting students, with over 26,000 enrolled in over 70 degree and certificate programs. (The large number of courses raises doubts that revenues exceed costs for the non-profit). [3]

The gold standard in part-time e-Learning for working adults is the University of Phoenix Online, which has succeeded handily in transporting a profitable bricks-and-mortar university into cyberspace. The for-profit, publicly-traded institution offers accredited degree programs for adults in fields such as business and technology. The University of Phoenix Online has been successful in large part due to its narrow focus and its ability to gain scale through a nationwide roll-out; courses are developed centrally and "rolled out" to locations nationwide, maintaining quality control while cutting costs. We believe that the early leadership of the University of Phoenix Online creates a significant barrier to entry for e-Learning start-ups, and in the long run we expect it to be among a handful of competitors dominating this market.

Professional

Vocational/Technical Training. Focused and often "rote" in content, vocational schools would seem to be ideal candidates for a transition to e-Learning. However, many of the courses in this area are not easily transferable to the Web, such as those requiring in-class demonstrations and workshops (e.g., cooking, auto repair). Nevertheless, the bite-sized nature of the training will drive growth niche areas such as technology certificate programs.

Continuing Professional Education. Either for required credentialing or personal reasons, many professionals seek ongoing education within their fields. These courses have often been print-based and generally do not require workshops or practical demonstrations; therefore, e-Learning provides an attractive alternative. The most significant obstacle is gaining the accreditation necessary, in some cases; however, we anticipate that this will not be a major stumbling block and this segment of the e-Learning market will prosper.

Corporate

Corporations spent over $30 billion on training in 2000. Programs range from the highly technical (job-specific skills) to the general (e.g., writing skills). Many of these programs are amenable to virtual treatment since they are both bite-sized and supplemental. As companies become more cost-conscious, e-Learning stands to gain. IBM, for instance, offers 75% of its Basic Blue courses on-line and says reducing travel has pared $350 million from training costs.

Lifetime Learners

Despite continued growth in this segment, the outlook for success in the e-Learning space remains doubtful. Traditionally delivered to post-college adults in a classroom setting after work or on the weekends, extension programs have been mainstays in the social and intellectual life of major US cities since the 1940s. However, a

[3] "Special Report: e-Learning Guide" *US News & World Report*, October 15, 2001.

number of barriers to profitably translating this to the e-Learning space exist. First, there are a huge range of topics, making scale extremely difficult to achieve. In addition, much of the growth in this segment is driven by retirees — a group perhaps more characterized by an abundance, rather than a scarcity, of leisure time. Lifetime learners also tend to be among the most price sensitive of education consumers. Perhaps most important, such learning typically plays an extra-curricular, social role in these learners lives that e-Learning cannot duplicate.

The Materials Providers

Those providing the materials — the content, equipment, and delivery systems that help teachers teach and learners learn — are the enablers of this emerging market. By pursuing the three principles of e-Learning, players across the market can create a profitable and growing presence. The technology needed to transform the education market is out there. Customers are looking to e-Learning to serve their needs. Now is the time for both old and new providers to create the new products and services that will allow e-Learning to realize its potential.

Content

As the traditional providers of print-based products such as textbooks, workbooks, standardized tests, etc., content providers have the most entrenched position in the education market. As such, they have the credibility required to succeed. Moreover, content providers have no choice but to embrace e-Learning. Many aggressive competitors including Pearson are rapidly building positions in the e-marketplace, in large part responding to increased consumer demand and use of new technologies for learning. The content providers are well-positioned to gain leadership where so few have found success thus far. However, to attain this leadership, players must take a different approach to product development and content management — an approach which abides by one or more of the three principles. For example:

- Re-purpose existing and design new content for use in modular form or units
- Focus development efforts and priorities in the target markets (e.g., technology, continuing education) with the highest potential
- Develop products that maximize the potential of new technology platforms, providing higher value versus traditional products (e.g., integrated testing, diagnostic, and tutorial products)

Equipment/Software

Equipment and infrastructure providers are also well-positioned to take advantage of the emerging e-Learning market, given their expertise with the technology behind potential e-Learning offerings. Providers such as IBM and Apple have long recognized schools and colleges as a powerful forum to influence future purchases. With the rising use of technology in the classroom, other providers have jumped on the bandwagon. However, technology standards are still evolving and equipment manufacturers are recognizing the need to partner with the content providers. As a result, timing is critical for the equipment players. Successful entrants must rapidly develop the tools and devices needed to deliver value-added features and functionality to the basic content; for example:

- Digital asset management tools to convert and store content created before the digital age
- Software designed to manage libraries of learning objects to enable end users to create custom courses and modules
- Tools to enable integration of tests, diagnostic tools, and tutorials

Delivery

Delivery providers such as Sprint and AT&T recognize the value of education content to drive the take up of high speed delivery services. As a result, many have already begun to make significant investments in this arena. As the e-Learning environment matures, the importance of high-speed delivery will become an increasingly crucial part of the value chain. In the short run, the lack of widespread access to broadband delivery means that e-Learning products generally entail delivery of brief video clips, images or sound bites. At the same time, this is generally viewed as a major bottleneck in the industry. As broadband becomes more widely available, however, the potential for delivering full-length lectures, real-time simulations, and multi-media testing will grow and with it, so will the need for reliable, low-cost solutions for delivery.

Conclusion

We believe that e-Learning is destined to find its largest audience outside traditional educational institutions. It will flourish in the interstices and cracks, where traditional structures cannot function — it will fill needs traditional venues cannot fill. Its finest hours will be those during which a specific, somewhat routine, skill must be learned, quickly. Its best customers will be corporations, working adults, and people preparing for certification and examination.

E-Learning will also help existing institutions teach students in new ways, using a wider variety of tools and a more customized approach. Bits and bytes will probably never replace the classroom-based educational tradition in our society, but it will allow that tradition to molt and adapt to a new world in which learning, like life itself, is a part of each one of our days.

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