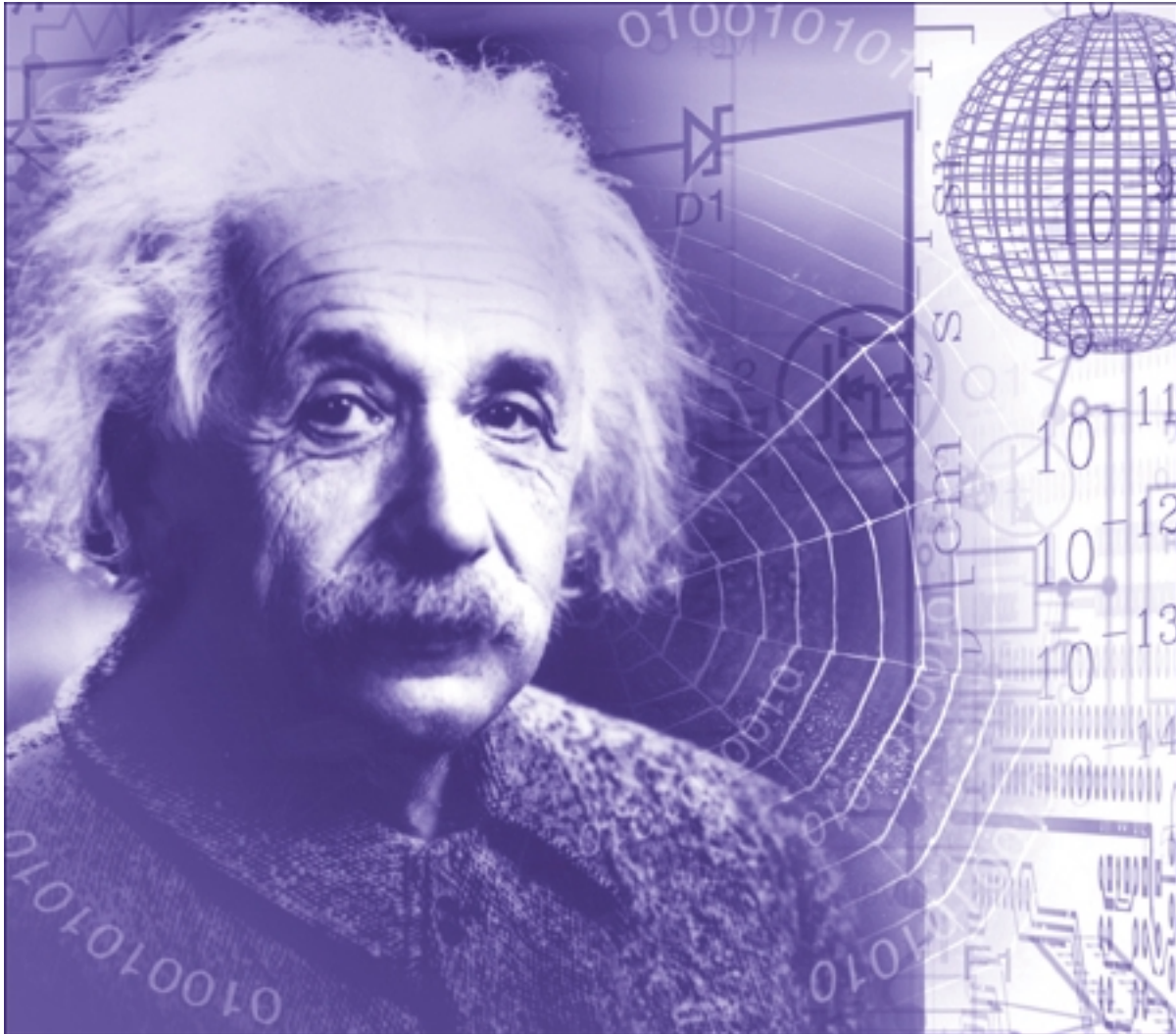# Merrill Lynch

23 May 2000

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The Knowledge Web

Part 2: Generation i – The K-12 Market

Highlights:

$675 Billion Market Catalyzed by the Internet

Content Combination of Richness & Reach
Creates a Huge Opportunity in the K-12 Space

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Generation i – The K-12 Market

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11. Generation i – @Home, @School, @Play

K-12 e-Learning Market Statistics

Size of U.S. Addressable Market:	$375 Billion
U.S. Online Market Size 1999E:	$1.3 Billion
U.S. Online Market Size 2003E:	$6.9 Billion
Online CAGR 1999-2003:	52%

Public Companies Profiled

eSCORE (a division of Kaplan)
Harcourt (H)
Lightspan (LSPN)
NCS (NLCS)
Pearson plc (LSE: PES)
Scholastic.com (SCHL)
Scientific Learning Corp. (SCIL)
ZapMe! Corporation (IZAP)

Private Companies Profiled

Achieva Online	JuniorNet
APEX Learning	LeapFrog
bigchalk	MaMaMedia
Chancery Software	Project Achieve
class.com	schoolbell.com
Classroom Connect	Schoolpop, Inc.
The College Board	Simplexis.com
College Coach	Teacher Universe
Edventions	TestU
Epylon.com	wrcmedia.com
Family Education Ntwk.	wwwrrr.com
Highwired.com	

Source: Merrill Lynch Global Growth Group

Fast Facts

- The number of K-12 schools connected to the Internet has climbed from 35% in 1994 to 96% today. Fifty-one percent of school classrooms have Internet access, up from just 3% in 1994.

- The ratio of school PCs to students has improved from 1 PC for 16 kids in 1992 to 1 PC for 6 kids in 1999.

- 35% of kids spend an hour or more online at school per week up from 24% last year.

- Our K-12 schools spent nearly $7 billion on instructional technology this year, much of it on Internet services.

- Teacher training accounted for only 5% of school technology spending.

- Only 20% of teachers feel very well prepared to integrate educational technology into classroom instruction.

- The number of kids ages 2 to 12 using online services at home is expected to grow from 4.3 million in 1998 to 10.1 million in 2002.

- The number of teens and college students who regularly access the Internet at least twice a week for an hour or more is estimated to rise from 12.0 million in 1998 to 22.3 million by the year 2000.

- Kids ages 8 to18 spend over 19 hours per week watching TV, 10 hours listening to the radio, 5 hours reading, 2.5 hours on the computer for fun and about one hour on the Internet. Those with Internet access at home, however, spend about 5 hours at home online per week.

- When asked to choose which media to bring to a desert island, 33% of children ages 8-18 picked a computer with Internet access.

- Child and teen online spending is expected to increase at a 70% CAGR, to $1.2 billion in 2002, when 16.6 million teenagers are expected to be online.

Megatrends Shaping the K-12 E*Learning Industry

	Trend	Impact
✓	Demographics	Kids today are technologically sophisticated, with many as comfortable on a computer as they are on a bicycle. Although this places additional challenges on schools, it also creates significant opportunities.
✓	Technology	Kids love computers. Technology can democratize education for all kids, enabling them to access the world's greatest library. In addition, technology can help teachers individualize instruction through assessment and tracking as well as increase parental involvement. It may also be the only way for schools to show they are meeting growing obligations to teach at state and local standards.
✓	Globalization	The workers of tomorrow will increasingly find themselves competing for jobs and resources with people in other countries. Developing technology literacy is one component of this. Technology also enables students to access educational resources from around the world, making the globe seem even smaller.
✓	Branding	The K-12 education segment has few brands, although once a brand becomes established, teachers are very loyal to it (Apple Computer is a prime example). On the Internet, brands are crucial.
✓	Consolidation	Providing technology solutions to schools will require some scale, with finding a qualified sales force one of the major problems of companies in this sector. There are hundreds of small providers today, and we expect consolidation in the industry. As with other technology sectors, companies may acquire R&D to speed their time to market, rather than building their own.
✓	Privatization/ Outsourcing	The Internet's rapid-fire rate of change, coupled with the difficulty in keeping good IT staff makes it a prime outsourcing candidate. Teacher training on the Internet can also be done effectively by outside organizations, as can teaching foreign languages and advanced placement and other courses.

12. Generation i – the K-12 Education Market

"Computers are the 'new basic' of American education, and the Internet is the blackboard of the future."

– Richard Riley, Secretary of Education

Today's kids are the Internet Generation – Generation i – and are as comfortable on a computer as on a bicycle. Generation i loves their computers as much as the Baby Boomers love their cars.

Today's kids are the Internet Generation – Generation i – and are as comfortable on a computer as on a bicycle. Generation i loves their computers as much as the Baby Boomers love their cars. The rich, interactive content and the fact that kids can control the machine mean they can be fun and empowering for children. And like a driver's license for a sixteen-year-old, the Internet can mean the freedom to go virtually anywhere for children of any age. A seven-year-old can go to Amazon.com, select the next Babysitter's Club book, and with dad's help (and credit card), buy the book and have it shipped to her at home. All without car keys. For children and teens, the Internet opens a whole new world.

The combination of the Internet and education is not only a natural progression for Generation i, it is a necessity in today's economy. The Information Revolution is really the Knowledge Revolution. Knowledge is the fuel for the New Economy and technology is its second language. e-Commerce is to the Knowledge Revolution what the railroad was to the Industrial Revolution. The web, the world's greatest library, can democratize education, increasing the access, reducing the cost and increasing the quality of education for billions of the world's citizens.

Knowledge is the fuel for the New Economy and technology is its second language. e-Commerce is to the Knowledge Revolution what the railroad was to the Industrial Revolution. The web, the world's greatest library, can democratize education, increasing the access, reducing the cost and increasing the quality of education for billions of the world's citizens.

In K-12 education, this means not only providing children with an understanding of technology but also using technology in ways that help children learn new things in new ways.

We believe a huge business opportunity clearly exists in this market. We estimate that the K-12 e-learning market today is $1.3 billion and that the opportunity extends well beyond what we can capture and quantify today. We categorize this market into five areas: Content, Commerce, Community, Infrastructure and Supplemental Services. Each of these areas has tremendous potential, in our opinion. As a consequence, we believe that pulling all these big pieces together into an education hub is **the** opportunity in K-12 education. The network effect of 53 million children, 23 million families and 3.1 million teachers can be extraordinarily powerful.

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The K-12 e-Learning Landscape – Content, Commerce, Community, Infrastructure & Supplemental Services For Huge Market

CONTENT
Kid Sites
Parent Sites
Teacher Training
Online Courses
Online Degrees

COMMUNITY
Teens, Parents,
Teachers

14,000 districts   120,000 schools
3.1 million teachers   53.0 million children
23.0 million families

SUPPLEMENTAL SERVICES
Fundraising, e-cash,
College Planning &
Admission

INFRA-STRUCTURE
Hardware, Admin.
Tools, Teacher
Training, Online
Testing

COMMERCE
Products (Books, etc.)
Services (Tutoring, etc.)
Procurement

Source: Merrill Lynch Global Growth Group

The K-12 e-learning business opportunity is magnified by the Internet's own unique characteristics of network, community and leverage.

The K-12 e-learning business opportunity is magnified by the Internet's own unique characteristics of network, community and leverage. First is the network effect – the more teachers use online services, for example, the more parents and students will look to those resources for themselves, and the amount and quality of these resources will grow.

"Our national commitment to connect every classroom in school in the country to the Internet will be the greatest advance in quality and equality of education in this century."

Reed Hunt
– Former Chairman of the FCC

"Network Effect" At Work in K-12 E-Education
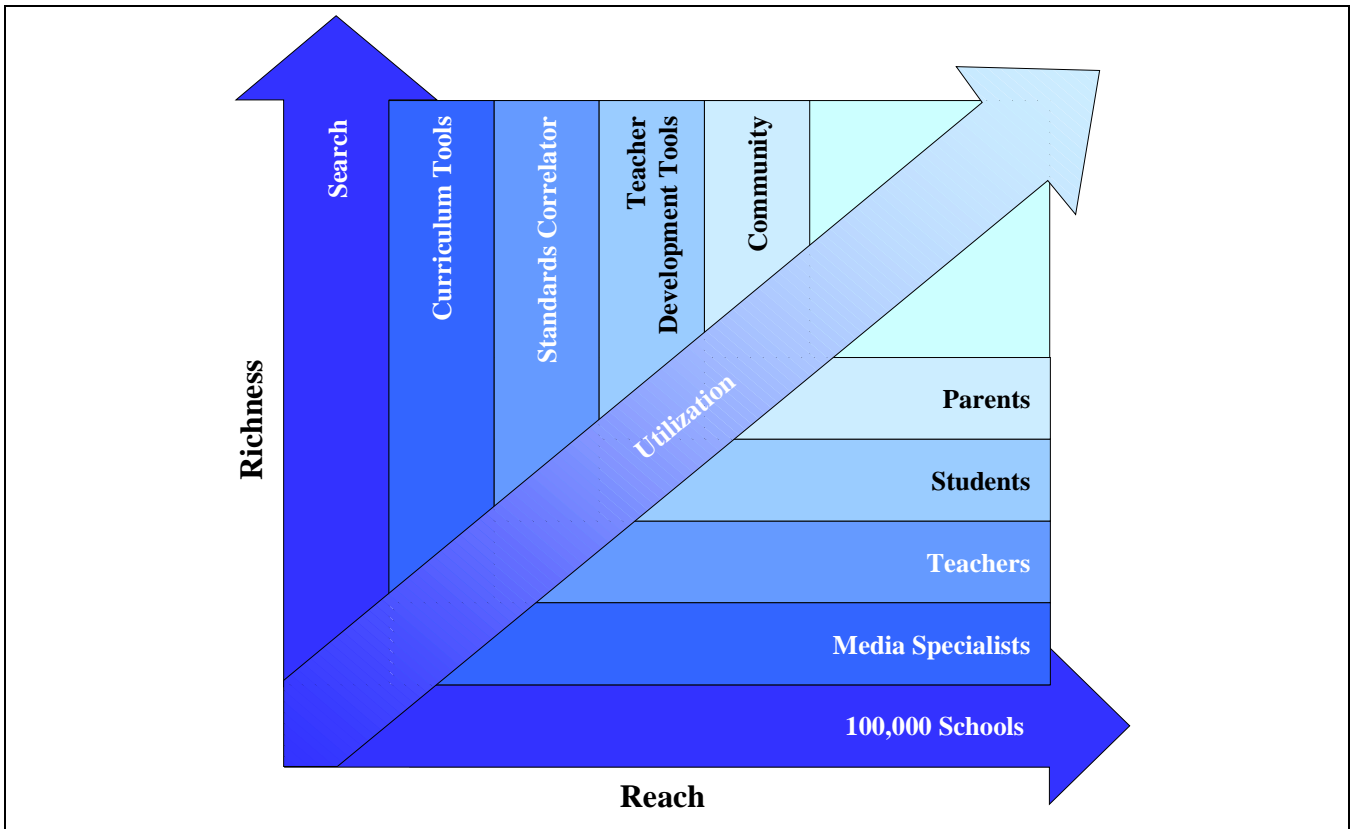
Source: Merrill Lynch Global Growth Group

Second, the ability of the Internet to create community expands the school-to-home connection, increasing the level of communication between parents, teachers and students and positively impacts student achievement. Finally, the ability to leverage digital content can dramatically expand the accessibility of this content. This, coupled with the fact that the cost of Internet access devices is plummeting, and will soon be zero or close to zero, should soon erase the "digital divide" between those who have technology and those who don't.

The Power of The Network Creates A Huge Opportunity in the K-12 Space
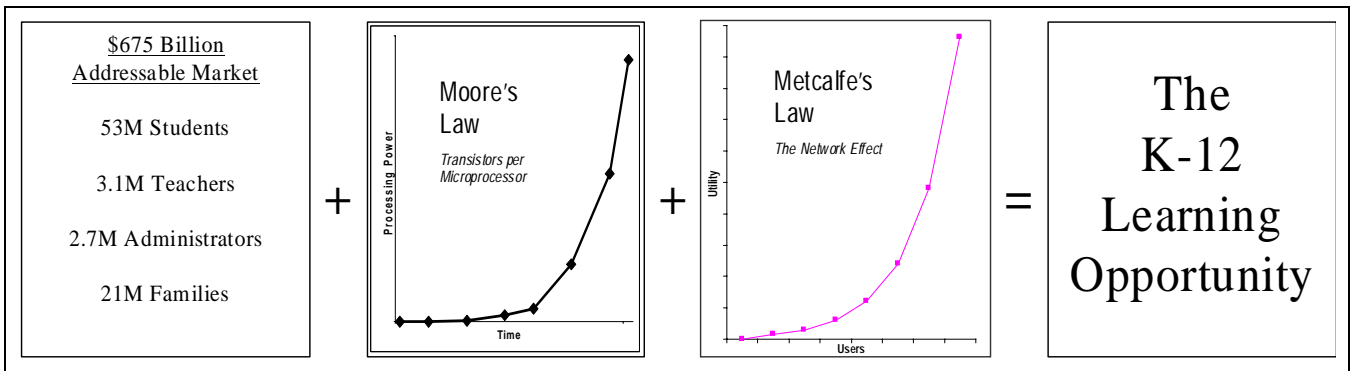
Source: Merrill Lynch Global Growth Group

The K-12 market e-learning market is poised for dramatic growth. The Internet reached a 25% market share in only seven years. This wildfire adoption is seen in the home market too, with 37% of homes, 41% of teens and 30% of children currently online. By 2003, we believe these percentages will double, to 67% of homes, 67% of teens and 55% of children.

Internet access in schools has also bounded forward, driven by its compelling value proposition and policies to promote Internet connectivity. Nearly every school in the U.S. today has some form of Internet access, and student accessibility through classroom access is growing rapidly.

Nearly every school in the U.S. today has some form of Internet access, and student accessibility through classroom access is growing rapidly.

A Tidal Wave in the Making – Internet Penetration From 1997 to 2003

2003	
Schools	100%
Classrooms	90%
Homes	67%
Teens	69%
Kids	55%

1999	
Schools	89%
Classrooms	51%
Homes	37%
Teens	41%
Kids	30%

1997	
Schools	65%
Classrooms	14%
Homes	25%
Teens	18%
Kids	6%
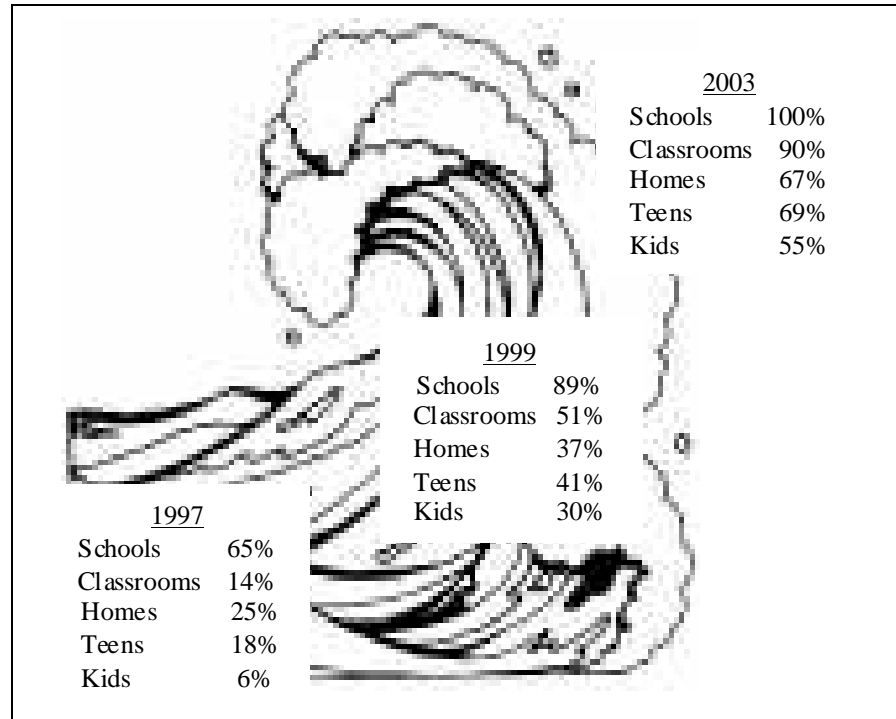
Source: Merrill Lynch Global Growth Group

K-12 e-Learning companies are targeting these three major markets: schools and teachers, parents and kids. While a year ago these companies may have been considered ahead of the market, schools and homes are increasingly seeking Internet solutions to education's woes, rapidly driving this market forward.

K-12 e-Learning companies are targeting these three major markets: schools and teachers, parents and kids.

Schools: Our public school system is failing to successfully educate millions of the children who continue to progress through it. Nearly half the students that enter the California public university system are not ready for college-level reading and math, and this sad scenario is repeated in state after state. Schools have made significant investments in technology infrastructure; now they need to make those investments pay off in increased learning. Companies like Classroom Connect, ZapMe! and Teacher Universe are bringing Internet tools to schools to help teachers successfully integrate technology into teaching and learning.

The web can be a powerful learning tool, in that it is ideally suited for project – or team-based, exploratory learning experiences. The more involved and engaged children are in the education process, the more they actually learn and retain.

"Why bother with education when ignorance is instantaneous?"

– Calvin & Hobbes

How People Learn

Learning Method	% Learned
Teach Others	90%
Learn By Doing	75%
Discussion Groups	50%
Demonstration	30%
Audio Visual	20%
Lecture	5%

Source: Andersen Consulting
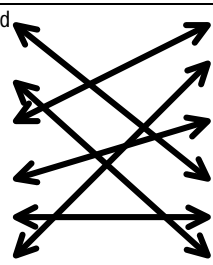
Parents: Concern over educating our youth has escalated to crisis levels, and parents are increasingly taking matters into their own hands. Parents are often willing buyers of technology-based educational content. Companies like FamilyEducation Company, SmarterKids.com and TutorNet are appealing to parents with online content and e-commerce, using the Internet to offer products and services individually tailored to help families help their children succeed in school and beyond.

The ability of the Internet to amplify the already viral nature of youth popular culture has powerful implications for e-learning companies.

Generation i: Kids and teens just want to have fun. They want to discover, get smart, talk, play games, shop, create, be important. Most kids also want to do what's cool. Trends among teens and kids spread like wildfire—blown along by word of mouth, with Pokemon and Beany Babies being the most recent beneficiaries. The ability of the Internet to amplify the already viral nature of youth popular culture has powerful implications for e-learning companies. The ability to combine education and entertainment and the ability to leverage the highly social aspects of today's youth has tremendous potential for e-learning companies. Sites such as Leapfrog, ZapMe! and MaMaMedia reflect these aspects.

Where on the Web? – A Matching Game

Kid-Cool Characteristic	Company Site
Escher-like graphics on a Zowie Blue background	Classroom Connect
Surfin' music at the start-up page	Headbone Interactive
e-Postcards to send	GirlTech.com
e-Gadgets like a voice-recognition locking diary	MaMaMedia
Live help with trigonometry at 11:00 pm	TutorNet
An e-Pager alerting you to friends on line	Bonus.com

Source: Merrill Lynch Global Growth Group

The size of the K-12 market, the push to reform U.S. education, the Internet's powerful network effect and the intense appeal of technology to children are combining to create significant opportunities for companies in the e-learning arena:

"When I was a kid my parents moved a lot, but I always found them."

– Rodney Dangerfield

Internet Opportunities in K-12 Schools

Charter and other public schools with a family-as-customer mindset creating online communities of parents

Technology-based assessment enabling targeted instruction and creating greater teacher and school accountability

Training and other services offered to teachers increasing teacher preparation and effectiveness in the classroom

Teacher usage and endorsements leading to viral-like spread of programs to homes and families, dramatically expanding market size and opportunity

Rich educational content engaging children in activities where they learn by doing

Global reach of Internet facilitating communications between students, teachers and experts around the world

Online buying communities leveraging school financial resources

Colleges and universities reaching K-12 students with rich content and targeted recruiting

Schools increasing fundraising effectiveness by taking programs to the virtual world

Source: Merrill Lynch Global Growth Group

We believe large and exciting companies will be created, as they capitalize on the unique combination of education and the Internet.

"Someday, in the distant future, our grandchildren's grandchildren will develop a new equivalent of our classrooms. They will spend many hours in front of boxes with fires glowing within. May they have the wisdom to know the difference between light and knowledge."

– Plato

13. Kids with Clout: K-12 Marketplace is Huge

With 53 million school children, three million teachers and 23 million families, the K-12 marketplace encompasses a huge number of potential users. Adding to this the fact that nearly 20 million kids and teens use the Internet at home results in a major market with tremendous opportunity.

With 53 million school children, three million teachers and 23 million families, the K-12 marketplace encompasses a huge number of potential users.

We aren't just talking eyeballs alone. America's youth has money to back up their muscle – spending by and for America's kids and teens far exceeds $500 billion. Moreover, this generation influences another half trillion in parental spending. Add to this the fact that children and teens are a powerful force in shaping trends in music, entertainment, fashion and culture, and that brand preferences can be established early and sustained, means there is intense interest in capturing these young consumers.

- *Teens*: The average American teen spends $128 per week on clothes, entertainment and personal items. In total, teenagers account for more than $150 billion of annual spending, with over 70% spent on discretionary items. These 27 million 13-19 year olds also influence another $450+ billion of parental spending.

America's youth has money to back up their muscle – spending by and for America's kids and teens far exceeds $500 billion.

  Teens are ready and able to shop online. Increasingly armed with their own credit cards or enabled by e-wallet technologies such as iCanBuy, or DoughNet, teens are buying everything online, from clothes, shoes, accessories and cosmetics to music, event tickets, sporting goods and magazines. Jupiter Communications estimates that teen online spending will increase from $53 million in 1999 to $1.2 billion in 2002, still reflecting just 1% of total spending by this group.

  The ability of teens to set trends and spend on them, coupled with their tendency to carry brand loyalties established at a young age into adulthood, has made this demographic an attractive one for marketers. The Internet can be a very effective, if not the most effective, way to target direct marketing messages to this group.

Jupiter Communications estimates that teen online spending will increase from $53 million in 1999 to $1.2 billion in 2002, still reflecting just 1% of total spending by this group.

- *Kids*: There are more than 43 million 2-12 year-olds in the U.S. Kids under 13 spend an estimated $14 billion of their own money each year and influence household expenditures of nearly 10 times as much, or $132 billion per year.

  The number of children using online services will nearly triple over the next five years. Jupiter Communications projects that the number of kids aged 2 to 12 using online services will grow from 4.3 million in 1998 to 10.1 million in 2002, and is predicting that consumer spending for online access, content, advertising, and transactions will grow to over $22 billion by 2002. Direct spending by children online is expected to top $100 million in 2002.

Kids & Teens Have Economic Power, and Can Take it Online

	Own Spending	Influenced Spending	Online Spending (1999)	Online Spending (2003)
Teens	$141 billion	$450 billion	$53 million	$1.2 billion
Kids	$17 billion	$130 billion	NM	$100 million

Source: Online spending: Jupiter Communications, 1999, Kids Disposable Income: Kalorama Information & Children's Market Research Inc. Teen Spending: Teenage Research Unlimited.

Kids under 13 spend an estimated $14 billion of their own money each year and influence household expenditures of nearly 10 times as much, or $132 billion per year.

- *Schools*: As a nation, we spend $360 billion on K-12 education annually, an arena in which there is clear opportunity for improvement and enrichment through technology. Of this $360 billion, $7.0 billion was spent directly on technology during the 1998 school year, a figure that is growing at 18% annually. Another $3.6 billion is spent on supplemental materials and $3.0 billion is spent on textbooks. These three areas offer particular opportunity for e-learning companies. In addition,

we estimate that the nation's 3.1 million K-12 teachers spend about $200 of their own money on supplemental products each year, contributing another $620 million to this pie.

- *Families*: Parents have tremendous influence over their children's education, and many spend their time and money accordingly. We estimate that spending on products for children, like educational software, supplemental materials, toys and books and services (such as tutoring and test prep), totals another $8 billion.

We estimate that the nation's 3.1 million K-12 teachers spend about $200 of their own money on supplemental products each year, contributing another $620 million to this pie.

Schools and Parents Spend Big Money on Education

	Education Spending	Ed. Products & Services	Online Spending (1999)	Online Spending (2003)
Schools	$360 billion	$70 billion	$75 million	$2 billion
Parents	---	$7 billion	$50 million	$750 million

Source: Merrill Lynch estimates

Market Size of $7 Billion in U.S. by 2003

Calculating the current market size for e-education solutions, let alone its future market size, is a challenge. For starters, we can no longer rely on school or consumer spending data alone to calculate these values, because they do not capture advertising or, in most cases, e-commerce spending. A bottoms-up analysis is problematic as well because there are very few public e-education companies (particularly those with 100% of their revenues coming from e-learning activities) and private companies are hesitant to share current revenue estimates. Besides, many private companies that look as though they will be significant players have little in the way of revenue today. Either they are very early stage companies, or, in their quest to capture users, are giving away their products for free. Monetizing that audience will come later. Finally, the Internet opens opportunities (and revenue streams) that were inconceivable before, and hence we expect it will grow the market at much faster rates than have historically been the case.

We estimate that spending on products for children, like educational software, supplemental materials, toys and books and services (such as tutoring and test prep), totals another $8 billion.

We calculate that the addressable market for Internet companies competing in this market is nearly $700 billion.

This being said, we think the opportunity in the K-12 arena is undeniable. We calculate that the addressable market for Internet companies competing in this market is nearly $700 billion.

K-12 Learning Opportunity

Segment	Addressable Market	Current Online Market	Growth Rate	Market in 2003
Portals & Hubs	$50 million	$50 million	100%	$800 million
Content	$4 billion	$20 million	40%	$80 million
E-Commerce	$657 billion	$175 million	120%	$4 billion
Infrastructure	$7 billion	$1 billion	20%	$2 billion
Supplemental Services	$5 billion	$10 million	50%	$50 million
Total	$673.5 billion	$1.3 billion	80%	$6.9 billion

Source: Merrill Lynch estimates

We will discuss each of these five areas in detail in following sections. First, however, we describe the state of technology readiness and use in both homes and schools.

"Parents never appreciate a teacher unless it rains all weekend."

– Anonymous

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14. Investment Opportunity – Valuation

The attractiveness of the e-learning market is compounded by the "winner take all" environment of the Internet. Clearly, any meaningful share of this $360 billion industry would yield a significant company, and hence many are racing to stake their claim. We believe that once the leaders are identified and become public companies, we will see the same valuation characteristics that have accrued to other leading Internet companies.

These valuations, while dramatic compared to many offline companies, may indeed prove to be reasonable when compared to the size of the opportunity in this market, the potential for early leaders to accrue a significant share and the high gross margins they enjoy.

The attractiveness of the e-learning market is compounded by the "winner take all" environment of the Internet.

Market Value = Market Size * Market Share * Gross Margins

Companies that are able to capture and keep users early should enjoy a powerful "First User Advantage." The importance and value of visitors is clear as demonstrated in the following comparisons of market-cap and users.

Market Cap Per User

Company	No. of Users (mil)	Mkt Cap ($bil) as of 5/15/00	Mkt Cap per User
EBay	10.0	$16.7	$1,673
Healtheon	2.7	3.2	$1,199
Amazon	16.9	20.9	$1,236
AOL	23.8	131.2	$5,513
Yahoo!	120.0	74.1	$617
Excite@Home	51.0	8.7	$170

Source: Company earnings reports. Users as of 12/31/99, except for Healtheon. Healtheon data pre-merger with Web-MD. AOL figure excludes ICQ users which total 53.1 million.

Given this, we expect to see a powerful drive for users over the next 12 months, with users coming at a higher priority than either revenues or, without question, earnings.

"Education both sows and reaps the benefits of The Long Boom."

— Peter Schwartz
Wired Magazine, The Long Boom

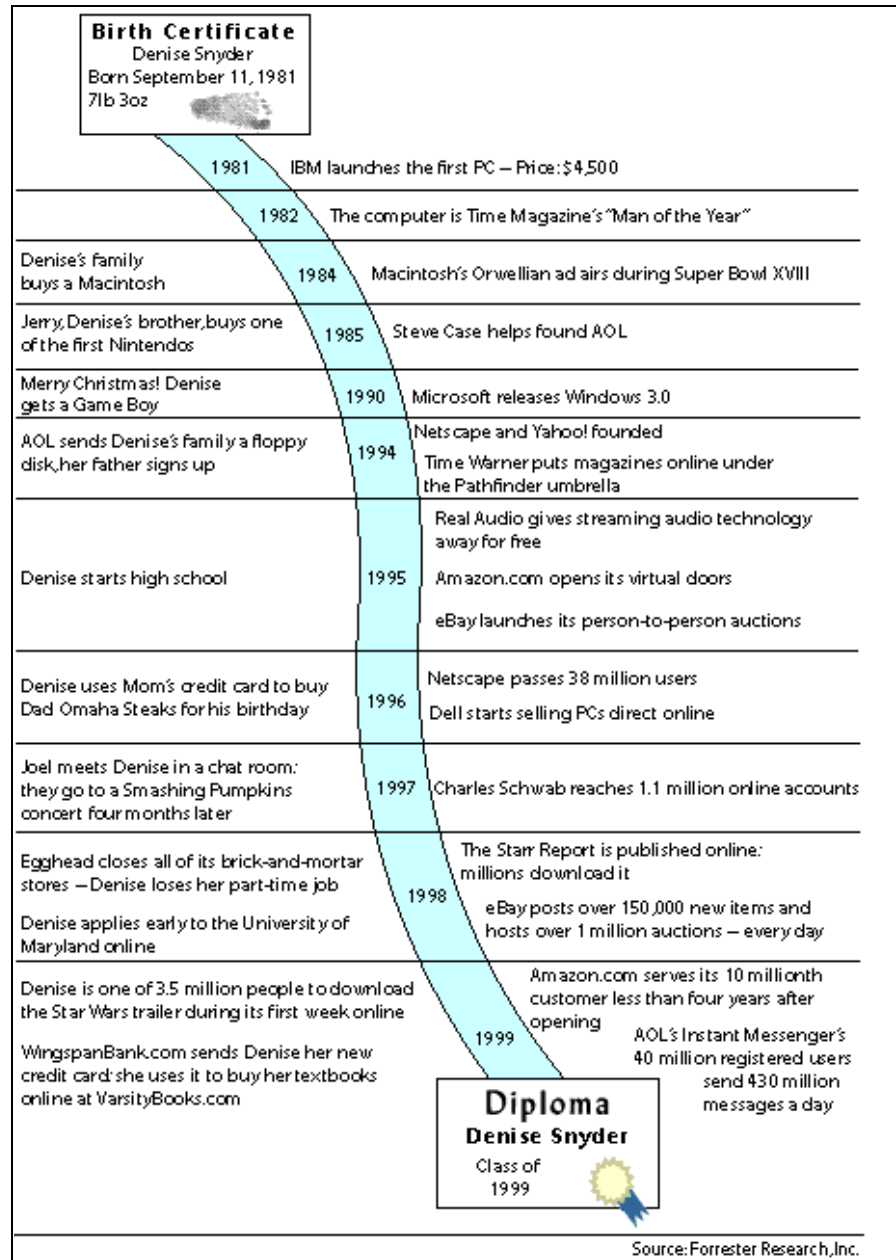## 15. Today's Children Are Web Savvy "Clickerati"

America's youth have embraced the computer and the Internet as their own. Half of all kids age 8 or older use the computer every day. Nearly 75% of all children 8 or older have a computer at home. In fact, 8% of these children have three or more computers at home. These remarkable statistics for a relatively new technology point to the Internet's status as the new media for the 21st century kid.

Nearly 75% of all children 8 or older have a computer at home. In fact, 8% of these children have three or more computers at home.

To Generation i, the computer's technology is practically invisible. Like the telephone, it has become a household appliance. An appliance that, a shown in the scenario below, has begun to infuse every aspect of life for children ages 2-19.

Generation i – @ Home, @ School, @ Play

To Generation i, the computer's technology is practically invisible. Like the telephone, it has become a household appliance.

Birth Certificate
Denise Snyder
Born September 11, 1981
7lb 3oz

Event (left)	Year	Event (right)
	1981	IBM launches the first PC – Price: $4,500
	1982	The computer is Time Magazine's "Man of the Year"
Denise's family buys a Macintosh	1984	Macintosh's Orwellian ad airs during Super Bowl XVIII
Jerry, Denise's brother, buys one of the first Nintendos	1985	Steve Case helps found AOL
Merry Christmas! Denise gets a Game Boy	1990	Microsoft releases Windows 3.0
AOL sends Denise's family a floppy disk, her father signs up	1994	Netscape and Yahoo! founded / Time Warner puts magazines online under the Pathfinder umbrella
Denise starts high school	1995	Real Audio gives streaming audio technology away for free / Amazon.com opens its virtual doors / eBay launches its person-to-person auctions
Denise uses Mom's credit card to buy Dad Omaha Steaks for his birthday	1996	Netscape passes 38 million users / Dell starts selling PCs direct online
Joel meets Denise in a chat room: they go to a Smashing Pumpkins concert four months later	1997	Charles Schwab reaches 1.1 million online accounts
Egghead closes all of its brick-and-mortar stores – Denise loses her part-time job / Denise applies early to the University of Maryland online	1998	The Starr Report is published online: millions download it / eBay posts over 150,000 new items and hosts over 1 million auctions – every day
Denise is one of 3.5 million people to download the Star Wars trailer during its first week online / WingspanBank.com sends Denise her new credit card: she uses it to buy her textbooks online at VarsityBooks.com	1999	Amazon.com serves its 10 millionth customer less than four years after opening / AOL's Instant Messenger's 40 million registered users send 430 million messages a day

Diploma
Denise Snyder
Class of 1999

Source: Forrester Research, Inc.

Source: Forrester Research. Reprinted with permission.

Merrill Lynch

Population of Kids and Teens Online to Expand by 33% Annually

Internet usage among teens and children has been rocketing upwards, more than doubling last year, and growing by more than 50% this year.

Teens ages 13 to 19 have been particularly quick to adopt the Internet. In 1998, 8.4 million teens were online, nearly doubling the number from the previous year. While just under 20% of the teen population was online in 1997, we expect 18.5 million teens, or 72%, to be online by 2003, a CAGR of 25%.

Internet usage among younger children should grow even faster, as content expands to reach this group. Just 6% of all children ages 2-12 had online access in 1997, and only a fraction of these had ventured onto the Internet. By 1998, 8.4 million kids were online, more than tripling the prior year's number. By 2003, we expect that 56% of all kids 2-12 will be online, a 43% CAGR over this period.

Kids & Teens Online Growing to 42 Million by 2003
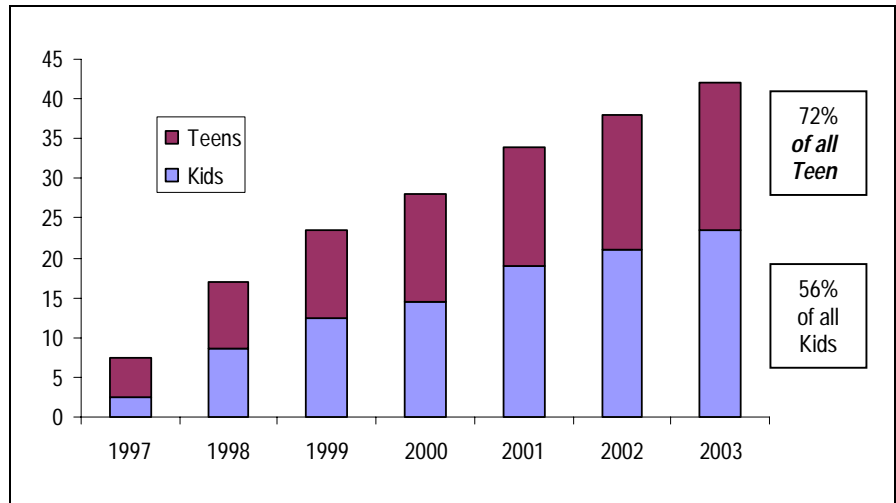
Source: Jupiter Communications, 1999

Overall, the annual growth rate for children and teens joining the Net is anticipated to be 33%. During this period, of course, the online audience is increasing dramatically, growing from 60 million users in January 1998 to a projected 157 million users in January 2003. Yet, as rapidly as the Internet continues to penetrate homes, usage among kids and teens is growing even faster. The result is that teens and kids as a percentage of the total Internet audience is expected to grow from 15% in 1998 to 27% in 2003. Hence this sector provides tremendous opportunity for companies with entertaining and educational online content directed at these groups.

"By the time my kids are in college, using a PC to write term papers and access the Net will be equivalent to flying a hot-air balloon to the corner market. Instead, simple and cheap devices will rent the latest software off the Net."

– Scott McNealy
CEO, Sun MicroSystems

Kids and Teens Capturing An Increasing Share of Online Market

Source: Jupiter Communications, 1999.

Internet Still Bows to TV, But Stay Tuned . . .
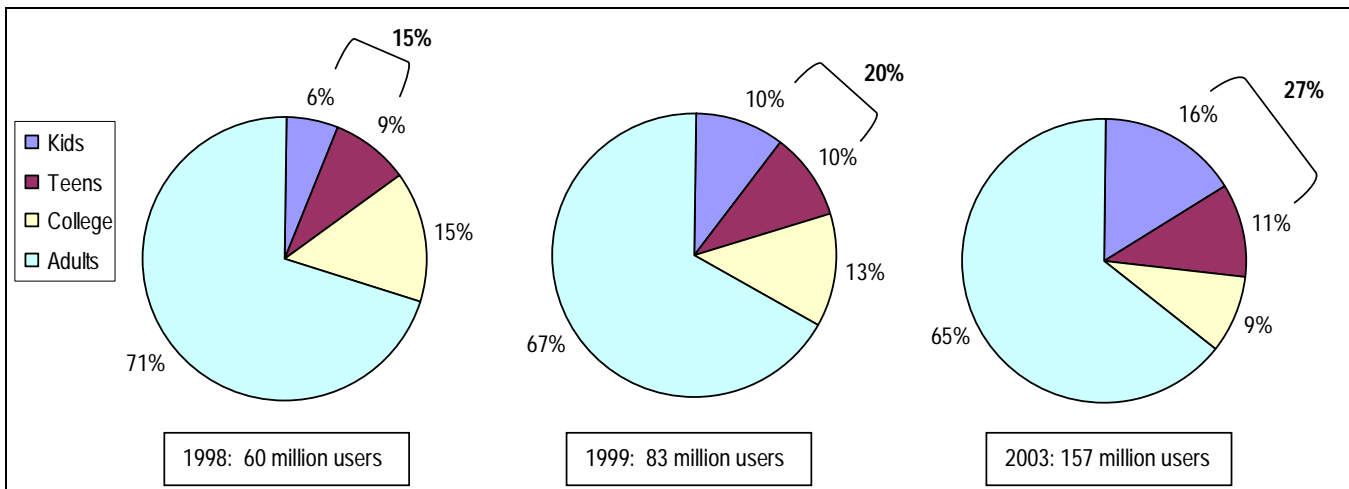
Kids in the U.S. spend about 40 hours per week using media in its various forms, according to a recent survey by the Kaiser Family Foundation. Put another way, watching TV, playing video games, listening to music and surfing the Internet essentially comprise a full-time job for the typical American child. The Internet will clearly capture a greater share of these 40 hours over the next several years. We also predict that the Internet will make student media use a richer, more entertaining and more educational experience.

So far, of course, kids spend the most time with TV. Kids spend over 19 hours per week watching TV, 10 hours listening to the radio, 5 hours reading, 2.5 hours on the computer for fun and about one hour on the Internet.

Average Number of Hours Kids Spend Each Week Using Various Media

Media	Hours/Week
Watching TV	19:19
Listening to Music	10:04
Reading	5:15
Using a Computer for Fun (Includes 56 minutes of Internet time)	2:29
Playing Video Games	2:17

Source: Kaiser Family Foundation. November 1999. Study based on nation-wide sample of 3,155 children. Weeklong averages are based on mean times with each medium separating out weekday and weekend reports.

But ask children what their favorite media is, and the Internet-enabled computer scores big responses. When asked to choose which media to bring to a desert island, 33% of children ages 8-18 picked a computer with Internet access.

bigchalk.com – The Education Network

Bigchalk.com achieved instantaneous scale in the K-12 Internet education market when it was created through the combination of Bell & Howell's K-12 Internet business and Infonautic's Electric Library school and library business. The combined company already reaches 40,000 schools serving 25 million students across the country. In late February, bigchalk.com acquired additional content and reach with the addition of HomeworkCentral.com, which had 320,000 unique visitors and 4.5 million page views that month.

In addition to its significant reach and "sticky" content sites, we believe bigchalk is poised to benefit from the Internet's network effect. The company accesses all participants in the K-12 market, providing them with a broad spectrum of educational Internet services, online research and reference services to teachers, students, parents, librarians and school administrators in the K-12 educational and public library markets. Bigchalk.com also offers students and teachers remote home access to its services to provide maximum

opportunity for research and enable students to pursue class assignments and personal study after hours. Relationships with all these user groups can be leveraged through the addition of products and services and e-commerce, creating a comprehensive Internet hub.

Unlike many companies in the e-learning industry that have traded revenues for reach, bigchalk.com has been able to successfully monetize this huge audience through subscriptions to its research and reference services, Electric Library and ProQuest. With these services, the company provides broad access to content from more than 3,500 publications and data sources including newspapers, magazines, books, periodicals, dissertations, out-of-print books and other scholarly collections, wire service television and radio transcripts, photo archives and maps.

The subscription-based business model can be complemented with professional development fees, e-commerce and other revenue streams.

The Power of the Network

Founded: 2000	**Revenue Components:**
Headquartered: New York, NY	**Content:** X
Public/Private: Private	**Commerce:** X
URL: bigchalk.com	**Advertising:**
Claim to Fame: Reaches more schools today than any other company.	**Service:** X
Key Investors: Goldman Sachs Group, Blumenstein/Thorne Information Partners, Patricof & Co. Ventures, Inc., Core Learning Group	**Network Effect:** X
	Hub/Portal Strategy: X
	Metrics to look for: Number of Users/Students/Clients

We Don't Want Our MTV – Internet Ranks Higher
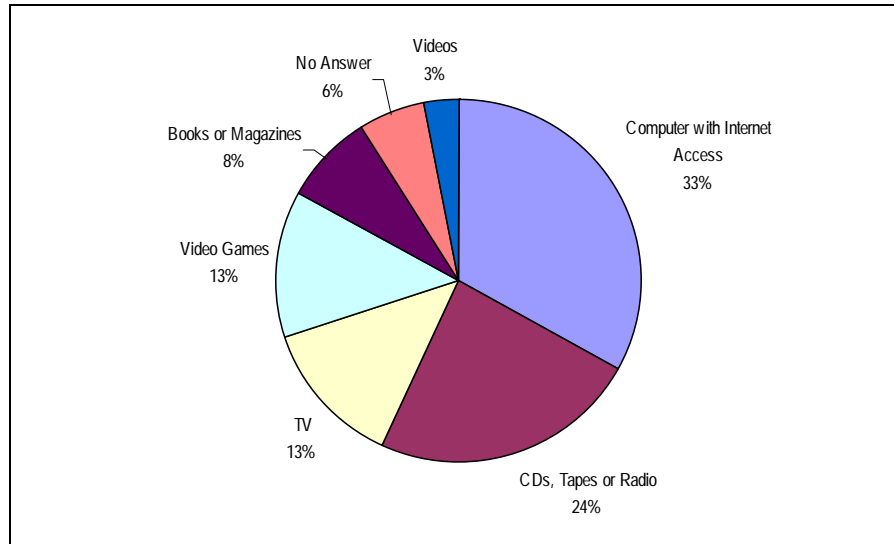
Source: Kaiser Family Foundation, November 1999. Media selected by children aged 8-18 when asked to choose which media to bring to a desert island.

The above statistic is all the more impressive when combined with another attitude children have towards these media. Twenty six percent of 8-18 year-olds say they learn interesting things "most of the time" when they use the computer, versus 20% for TV. This is despite the fact that they spend nearly 10x as much time watching TV than using the PC or Internet. The Internet's ability to both entertain and educate at the same time is critical to driving its penetration in homes and schools.

The Internet's ability to both entertain and educate at the same time is critical to driving its penetration in homes and schools.

For traditional media companies, particularly those serving up the 19 hours per week of television to the typical American child, the Internet can be either a threat or a promise. The computer will either overthrow them or serve as a tremendous complement to their current brands. Several Internet upstarts are offering high-quality, rich content online, seeking to capture a greater percentage of a child's media time, in effect seeking to "dethrone Disney" and other media companies with tremendous mindshare among youth. Indeed with increased Internet use, TV loses out. Jupiter surveys find that just over 20% of "light" Internet users watch less TV now than before. But among "heavy" users, more than 55% watch less TV.

We see smart traditional media companies responding with a variety of Internet-based offerings and partnerships that are educational and entertaining. In addition, many are seeking to neutralize the growing effect of Internet use among children and teens by creating Internet content that is to be used as a complement to or even in tandem with their other offerings. For example, vote on MTV's website for the top stories of the year, preview new music and rank it, or request your favorite music videos. All these activities promote an interest in tuning back into the station to hear the results that one helped create.

Why Kids Web

Generation i is particularly attracted to Internet sites that are tailored to their unique interests and tastes. More than any age, this list is headed by the desire to stay connected. This drives demand for communications tools such as chat, e-mail, and instant messaging, tools which, not surprisingly, are spread through the viral influence of teens' social nature.

Teens want content that is created for them, but, as importantly, by them. Community sites where Generation Y can share their ideas, express their opinions and develop their interests in music, relationships, fashion, entertainment, astrology, celebrities and sports are increasingly popular.

Over 80% of intended family household PC buyers cited their children's education as the primary reason for purchase.

Characteristics of "Cool" Websites

What's Cool?

Big, Bright Graphics	✔
Lots to Do	✔
Fun, with a Club-like Attitude	✔
Ease of Navigation	✔
Information, especially the "Inside" Scoop	✔
Frequent Updates	✔
Games	✔
Chat	✔
Downloads	✔
Freebies	✔

Source: Paul Kurnit, President & COO, Griffin Bacal.

The Bottom Line For Parents Is Education

Connected kids may like cool, fun content, but parents see greater value in the Internet than simple entertainment or communication. For parents, computers are about education. Households with children have greater PC and Internet penetration levels than do households without children, and the biggest reason for that is to help kids learn. Over 80% of intended family household PC buyers cited their children's education as the primary reason for purchase.

Indeed, the Net is an important research, homework and study resource for these students. Of those using the Internet, 88% said they did so for special reports and 50% said they used it for nightly homework.

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The Internet Is A Homework Resource

Type of Homework	% Students
Special Reports	88%
Reference Source	85%
Nightly Homework	50%
Standardized Test Prep	13%

Source: NPD Online Research. % Students who are online and used the Internet for these specific uses.

In addition to being heavier Web users than their childless counterparts, families with children have recently achieved a significant online purchasing presence. Prior to mid-1998, families were less inclined to buy online than other Internet-using groups. This has rapidly changed. In the last six months of 1998, nearly 60% of online buyers were families with children, according to research by The Industry Standard and market research firm Odyssey.

Families With Children Have Significant Online Presence

- 36% of households in the U.S. are households with children
- PC and online service penetration among households with kids is 30% higher than in households without kids, at 60% and 42%, respectively
- Households with kids use online services by 2 more hours per week than households without them.
- 58% of purchasers on the Web in the last six months of 1998 were online families
- Only 13% of online families with kids would consider purchasing a brand online they had never heard of before

Source: The Industry Standard and Odyssey. "What's Driving the Kids' Market?" based on a summer 1999 study. Reprinted with permission.

Online families are extremely brand sensitive, and have been historically unwilling to purchase unfamiliar brands online.

Importantly, online families are extremely brand sensitive, and have been historically unwilling to purchase unfamiliar brands online. This is a critical consideration for e-commerce providers targeting the home market, such as SmarterKids.com and School Specialty. In particular, many education brands are not well known to the general parent community. For those that are, such as Scholastic or Leapfrog Toys, the Internet holds sizeable potential.

**Favorite Bookmarks of Stacy Boyd,
Founder and CEO of Project ACHIEVE**

www.google.com
www.thehungersite.com
www.nytimes.com
www.greatschools.com
www.epicurious.com

K-12 Community: Home – School Connections

Community	**Content**
Classroom Connect	Classroom Connect
Family Education	Lightspan
Big Chalk	RiverDeep
Lightspan	Boxer Learning
KidsEdge	CCC.Net
Copernicus.net	CompassLearning

K-12 Community

Enterprise	**Infrastructure**
NCS	ZapMe!
PROJECT Achieve	HighWired
Chancery	N2H2
Edventions	Blackboard
PowerSchool	epylon
iMind	Simplexis

Services
SchoolPop
eScore
Embark
PROJECT Achieve
DoughNet
APEX

Source: Merrill Lynch Global Growth Group

MaMaMedia and JuniorNet

The Internet has tremendous potential for improving children's learning through interactive and engaging activities. Two sites that are providing fun, kid-oriented educational content are MaMaMedia and JuniorNet. Both have excelled at developing sites that children will enjoy, while their business models and appeals to parents are significantly different.

MaMaMedia is the benchmark in the children's educational entertainment field. It's an old-timer, at five, with a distinct philosophy and style. Founder Idit Harel, mom of three and former researcher at the MIT Media Lab, believes that in today's modern society, the three "Rs" need to be complemented with the three "Xs." Reading, wRiting and 'Rithmetic are invaluable, although Harel believes, "the most important skills we can foster in our children are what I call the three X's – eXploring, eXpressing and eXchanging ideas using the new digital media." The company develops most, if not all, of its content in-house. MaMaMedia is a free service, sponsored by advertising, with partnerships (particularly with AOL) driving traffic and awareness.

Founded in 1996, JuniorNet partners with leading brands to take their content online, or provide a greater online audience. Partners include Weekly Reader, Highlights for Children, Zillions by Consumer Reports, Ranger Rick, Sports Illustrated for Kids, and Jim Henson Interactive's Bear In The Big Blue House. The company also distinguishes itself through its commercial-free philosophy – it's supported by subscriptions—and broadband-like delivery made possible through its hybrid CD ROM/Internet technology.

We believe there is room for multiple approaches to the consumer market. As for the financial success of these two models, that will depend in large part on the impact of their consumer marketing strategies. MaMaMedia benefits in this arena from its partnerships with AOL, the Go Network and Earthlink. It also spends for online advertising and has a relationship with General Mills for unique offline advertising, such as on fruit snacks envelopes. JuniorNet's advertising free service will appear to some parents, particularly of young children. The company will need to blanket the market with its CD-ROM, AOL-style, to capture the subscriber-base necessary to cover the cost of its rich content development. Primary competitors are those vying for children's attention on the net, including media company sites like cartoonnetwork.com, Nickelodeon (Nick.com, Nickjr.com) and disney.com.

MaMaMedia	JuniorNet
URL: mamamedia.com	**URL:** juniornet.com
Claim to Fame: Incorporating constructionist learning philosophy. Coined term "clickerati" to refer to today's tech-savvy kids.	**Claim to Fame:** Brand name content in an advertising-free setting
Background: Founded in 1995 by Idit Harel, Ph.D., who had previously spent 15 years at Harvard and MIT researching children, learning and technology. "Good learning tools are just like a paintbrush or building blocks. Web experiences for kids should be about learning by doing within a multidimensional creative process, rather than being confined by linear stories or questions and answers."	**Background:** Created in 1996 for kids 3-12. The subscription-based online service has no advertising and does not enable children to access the Internet. E-mail can also be controlled by parents, meaning JuniorNet is a safe online "sandbox" where children can explore and learn without the need for parental oversight. A separate parent's area includes an online store.
Activities: Play around, build and write things in Surprise! See what other kids are up to in Buzz. Customize your mamamedia.com screen with the buttons and wallpaper you want in Zap. Build your very own town in Presto! Send e-cards to friend.	**Activities:** Test your memory in Dig Dog Dig. Improve visual discrimination in Spot the Difference. Work on vocabulary and spelling with the Z-Coder. Learn to manage money with Escape from Planet Z Grow a virtual garden in Feed Me.
	Financial Backing: RCN Corporation, Euclid Partners, New World Ventures, Boston Capital Ventures, Silicon Valley Bank, Dominion Ventures
Key Partnerships: AOL, AT&T, Barnesandnoble.com, General Mills, Infoseek, Earthlink, Toys-R-Us, WebTV, Yahoo!	**Key Partnerships:** Highlights for Children, Weekly Reader, Zillions, (Consumer Reports for kids), Ranger Rick, Jim Henson Studios, Sports Illustrated, SmarterKids.com
Metrics: Unique Users:. (Sept. 99): 650,000 / month	**Metrics:** Unique Users
Coolest Feature: What's the Story? Kids create a crazy scene, then write about it. May get posted as the "Story of the Week".	**Coolest Feature:** Make It! Kids can design their own animal masks to print out, color and wear.

Source: Merrill Lynch Global Growth Group and company documents

LeapFrog – The Invisible Computer – Enabling Educational Products and Learning Tools Through the Internet

LeapFrog is using technology to transform toys and learning aids into smart and engaging, Internet-connected educational products. The company currently manufactures a line of award winning educational products that are distributed in retail outlets, specialty toy stores, educational supply stores, major catalogues and to schools through the company's own sales force. The company's education division also distributes its educational products to schools throughout the U.S. The company's K-3 phoneme awareness program was recently adopted by the state of California

One of the company's more popular products is the interactive LeapPad which uses touch-sensory technology. When the LeapPad stylus is touched to a page, the LeapPad responds, providing information, reading stories, sounding out words, playing games, even bringing illustrations to life with sound effects.

The LeapPad and its underlying patented technology, NearTouch, have broad applicability. With the LeapPad, children no longer need to rely on adults to sound out words or letters as they learn to read. Not only could this be used at home, it has the ability to leverage a teacher's classroom time. The same technology could be used to teach adults. For example, adults who can't read are often too embarrassed to get help from others. The $49 LeapPad is an affordable alternative for learning in private. The technology could also be used to teach foreign languages to people of any age. Consider China, for example, where the government hopes to develop 100 million English speakers over the next several years. LeapPad's simple, easy to use technology could provide a low cost option.

Leapfrog also has the opportunity to Internet-enable the LeapPad, to allow for tracking and monitoring of student progress. This assessment component can aid parents and instructors as they seek to improve student learning.

Many of the company's educational toys could also be internet-enabled. This would allow children to download new or customized programs for their toys and enable them to play the toys with children who may be miles or countries away.

With one of the next waves of technology development in "wired objects" we think educational products and children's toys have tremendous potential. Leapfrog is focusing its resources to become one of the leaders in developing "the invisible computer."

Founded: 1995

Headquartered: Emeryville, CA

Public/Private: Private

URL: leapfrog.com

Claim to Fame: Smart technology with broad application

Coolest Feature on the Website: The flash demo of LeapPad

Key Investors: In October 1997, LeapFrog merged with Knowledge Kids Enterprises for an undisclosed amount. Knowledge Kids Enterprises is a subsidiary of Knowledge Universe LLC.

Key Partners: Knowledge Universe, KidsEdge

Key Clients: Toys'R'Us, Wal*Mart, KMart, FAO Schwartz, Target, Service Merchandise, Zany Brainy and NoodleKidoodle

Revenue Components:

  Content: X

  Commerce: X

  Advertising:

  Service: X

  Other:

Network Effect: No

Hub/Portal Strategy: No

Metrics:
Units sold: 4 million (1999)

16. K-12 Education Is Ripe for a R*e*volution

America's public education system is in crisis. It is failing to educate millions of the children who attend each year. With big problems, however, comes the potential for big solutions. We see e-learning as part of a tremendous sea change in the way our schools are managed and our children are educated.

Clearly, students are ready for more technology in schools. But schools are behind, in infrastructure, learning methods and teacher training. Fortunately, this is rapidly changing. After five years of investing in hardware and connectivity, we believe software, Internet services and teacher resources will soon experience the next wave of growth in schools. The Internet allows for unique instructional techniques, and, as its presence grows, we think the benefits will not be limited just to individual students who are learning more and better, but should also extend to society at large.

"In the first place, God made idiots. That was for practice. Then he made school boards."

– Mark Twain

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After five years of investing in hardware and connectivity, we believe software, Internet services and teacher resources will soon experience the next wave of growth in schools.

Trends in U.S. education, the Internet's powerful network effect and the intense appeal of technology to children are combining to create significant opportunities for companies in the e-learning arena: Charter and other public schools with family-as-customer mindsets are creating online communities of parents. Technology-based assessment enabling targeted instruction and creating greater teacher and school accountability. Training and other services offered to teachers increasing teacher preparation and effectiveness in classroom. All of these opportunities are shaping the new American classroom. Changes this dramatic may not have been seen in classrooms since the introduction of the Socratic Method or the Gutenberg printing press.

Charter and other public schools with family-as-customer mindsets are creating online communities of parents.

Transforming Ideas in Education

The Socratic Method   The Printing Press   The Internet
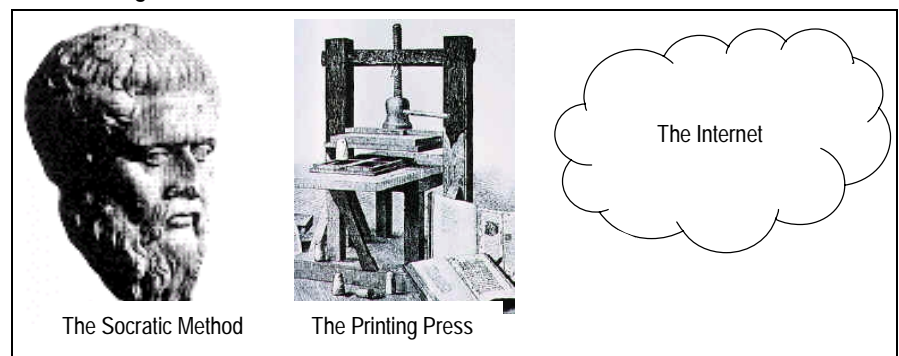
Source: Merrill Lynch Global Growth Group

Current State of Education In U.S. Demands New Solutions

The educational picture in the U.S. today is not pretty. While there are some exceptional public schools, millions of children are being underserved by the educational system. International comparisons show U.S. students graduating at the bottom of their class in math and science. Not only do we fare poorly on a relative basis, and on an absolute basis, our children are not achieving our basic requirements. Forty percent of 11th graders can't compute with decimals, simple fractions and commonly encountered percents. The vast majority can't write coherent paragraphs in response to essay questions. Just ask teachers and

While there are some exceptional public schools, millions of children are being underserved by the educational system. International comparisons show U.S. students graduating at the bottom of their class in math and science.

admissions staff at the college level. They know this – nearly half of all students entering the California State University system last year were not ready for college-level English and Math, and this dismal pattern is repeated from state to state. Parents, business leaders and politicians see this too, and are demanding change. Indeed, the poor standing of American K-12 education is among the leading social and political issues in America today.

Nearly half of all students entering the California State University system last year were not ready for college-level English and Math.

Millions of Children Are Ill Served by the Current Education System

- 43% of our fourth-graders can't pass a basic reading test.

- Nineteen percent of Americans over age 25 do not have a high school diploma or equivalent, and even today, one in five young Americans drops out of high school.

- Nearly half of all high school graduates have not mastered seventh-grade arithmetic. Forty-one percent of 17 year olds (high school juniors) cannot "compute with decimals, simple fractions and commonly encountered percents," nor are they proficient in basic geometry.

- Only 7% of 17 year olds are proficient in multi-step problem solving, can solve routine problems involving fractions and percents, recognize properties of basic geometric figures, work with exponents and square roots and solve basic algebra problems.

- One-third of 17-year-olds cannot place France on a map of the world. Only about one in 10 high school graduates can write a reasonably coherent paragraph.

- Approximately 50% of all students entering the California State University system are not ready for college-level English and math.

- Up to 42 million adults in this nation are functionally illiterate. Nine in 10 Fortune 1000 CEOs believe illiteracy is a problem in the American workplace, and the U.S. Department of Labor estimates that illiteracy costs U.S. businesses about $225 billion per year in lost productivity.

- The U.S. Department of Education reports that one-third of high school math teachers, nearly one-quarter of high school English teachers and nearly one-fifth of high school science teachers are teaching without a college major or minor in their subjects.

Source: U.S. Departments of Education and Labor

Bringing market forces such as competition, choice and capitalism to schools is at the center of the inevitable change in how education is delivered in America. The number of charter schools that give parents the ability to choose which publicly-funded school their kids attend has zoomed from two in 1992 to nearly 1,700 today, and 36 states now have charter legislation.

Technology Rapidly Reaching Schools

Technology has the potential to lead American education into the 21st century, but first we need to bring schools into the 20th century.

Technology has the potential to lead American education into the 21st century, but first we need to bring schools into the 20th century. Until recently, the technological revolution had largely sidestepped our education system. Fortunately, this is now rapidly changing. When we add the power of technology to improve education to the growing infusion of market forces in our public education system, we see the result being a shift of money toward technology and other solutions that work to educate kids.

While schools have been slow to add computers, there is now a landslide of public support for technology in the classroom. Access to information technology is growing as schools add more equipment and link libraries and classrooms to the Internet. The ratio of students per computer has improved dramatically, from 16 to one in the 1992-93 school year to 6 to one in the 1999-2000 school year.

The number of schools using the Internet has grown from 35 percent in 1994 to 89 percent in 1999. Research and database company, Quality Education Data, expects nearly every school to have Net access by the end of the 1999-2000 school year. Finally, the number of classrooms connected to the Internet has zoomed, from 3% in 1994-95 to 51% in 1998-99.

Merrill Lynch

Students per Computer Declining And Internet Connectivity Increasing
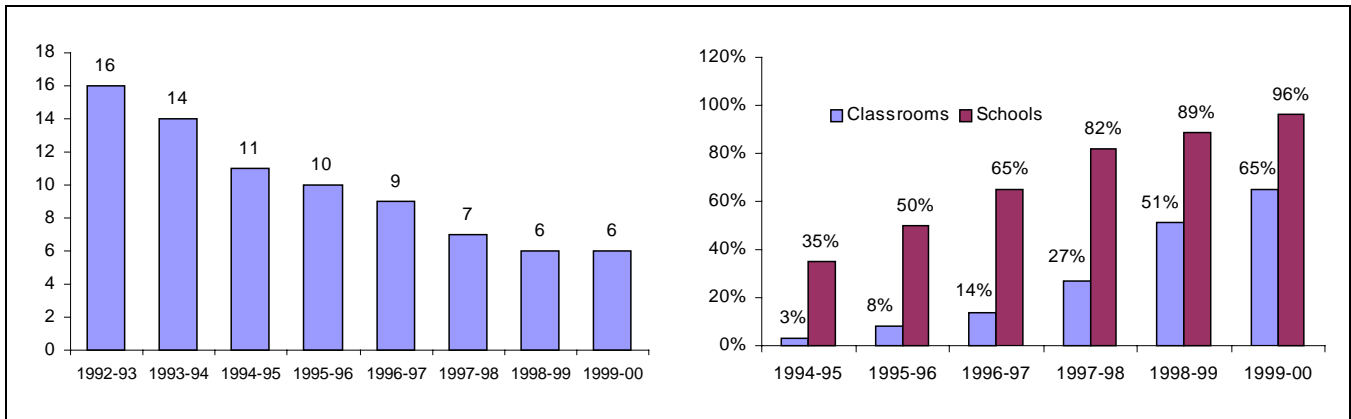
Source: Quality Education Data for Students-Per-Computer. 1999-2000 figure is estimate from Market Data Retrieval. Internet Connectivity from U.S. Department of Education, National Center for Education Statistics through 1996-97. 1997-98 actual and 1998-99 estimate from Quality Education Data. QED and N2H2 estimate that every school will have Net access by the end of the 1999-2000 school year. Merrill Lunch Global Growth Group.

Thirty-five percent of school children spend one or more hours online at school per week, up from 22% last year.

K-12 students are actually using the Internet at school, too. Thirty-five percent of school children spend one or more hours online at school per week, up from 22% last year.

Students Getting Online at School
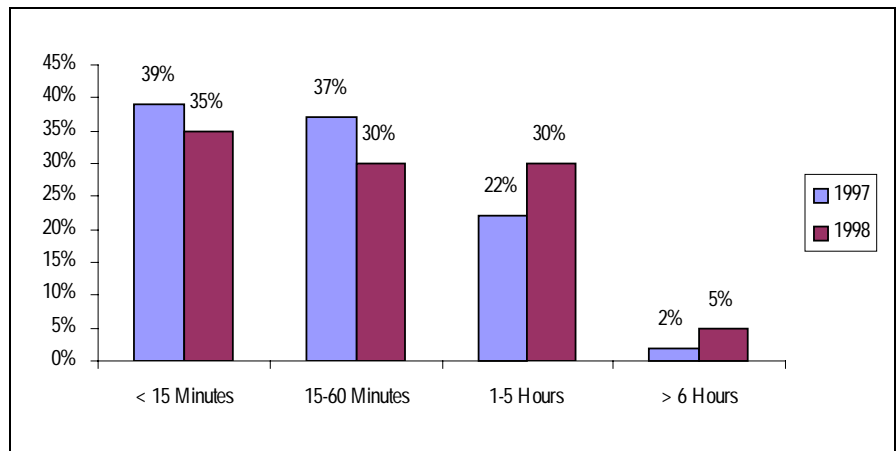
Source: QED. Internet Usage in the Public Schools, 1998

Underlying this in a significant increase in technology spending, up an encouraging 18% annually, from $2.1 billion in 1991-92 to $6.7 billion over the past seven years, including a substantial funding jump last year as a result of new funding sources, such as the federal e-rate. With public school expenditures exceeding the $330 billion mark, however, this still only represents 2% of the total spending on K-12 education.

Educational Technology Funding is Up in K-12 Schools ($billions)
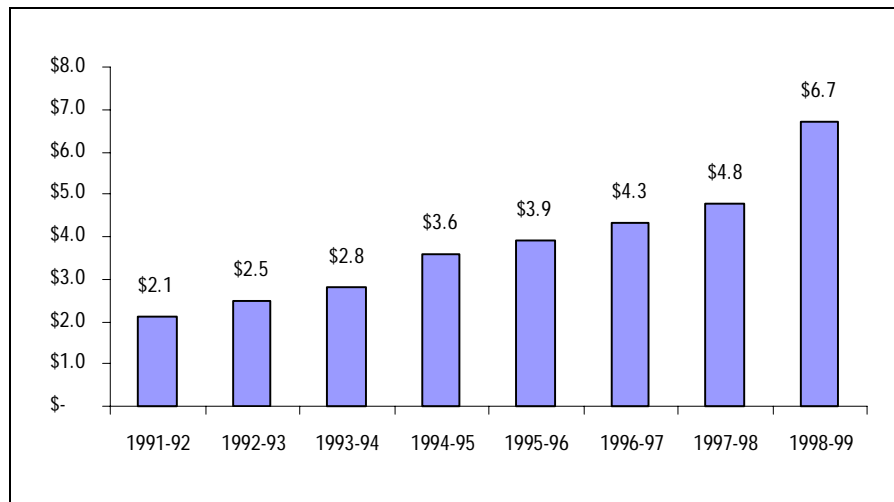
Source: Quality Education Data. Spending in the 1998-99 school year was particularly strong due to new funding sources, such as the e-rate. QED expects spending to decline in the 1999-00 school year as school technology develops beyond the level funded by federal dollars.

Technology has the potential to democratize education, uncoupling the relationship between rich educational content and wealth.

We think that potential and power of technology will continue to drive spending in these areas, particularly as market disciplines demand increased accountability and results from our schools. As described in the table below, those solutions we believe work best have a combination of the following key characteristics:

Characteristics of Effective Technology Solutions

	Characteristic	Representative Companies
✔	High Expectations	APEX Learning, NCS
✔	Effective Teachers	Teacher Universe, Classroom Connect
✔	Involved Families	ProjectAchieve, Family Education
✔	Technology in Every Students's Hands	ZapMe!, Leapfrog
✔	Engaging, High-Quality Content	Classroom Connect, JuniorNet
✔	Sufficient Learning Time	Lightspan, eSCORE

Source: Merrill Lynch Global Growth Group

Schools with fewer resources can now participate as well, with virtual visits to the Giant Pandas at the San Diego Zoo or tours of the stained glass at Chartres cathedral in France.

Technology has the potential to democratize education, uncoupling the relationship between rich educational content and wealth. With the Internet, well-funded schools can still sponsor live field trips to the world's historical and cultural sites, but schools with fewer resources can now participate as well, with virtual visits to the Giant Pandas at the San Diego Zoo or tours of the stained glass at Chartres cathedral in France.

Democratizing Education – Expanding Access to the World's Greatest Content
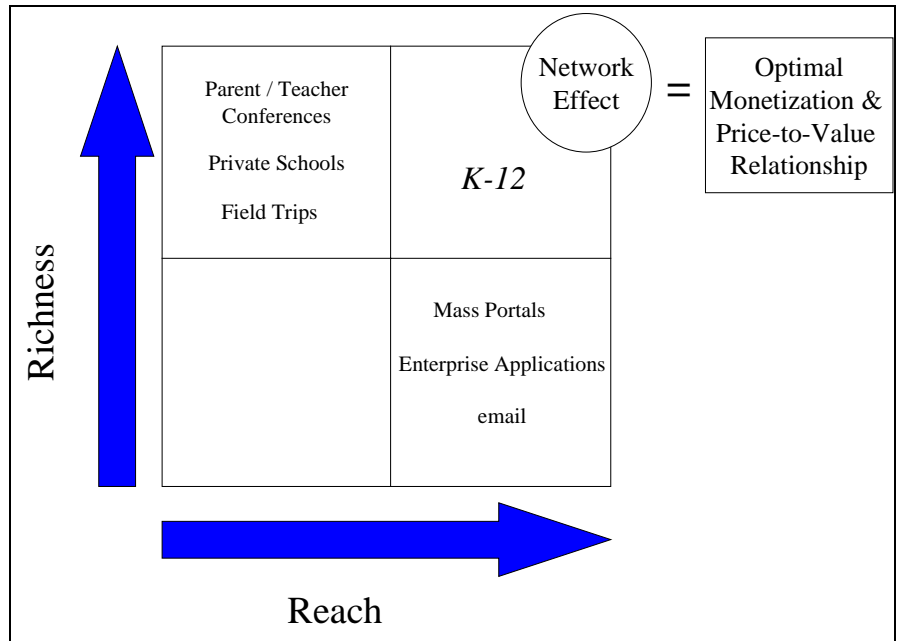
Source: Merrill Lynch Global Growth Group

In addition to expanding the access to and lowering the cost of educational content, there are many additional benefits of using technology in the classroom, as shown in the following table.

Test Scores and More: The Benefits of The Internet in Instruction

Even if there is a PC for every child, in the classroom these will simply collect dust if teachers are not trained to use them in instruction.

Increases student motivation. Kids love computers. A 1997 survey of 1,000 teachers who used computers in class found that 61% of teachers believed computers resulted in a "great improvement" in student motivation. An additional 33% said technology provided some improvement in student motivation. Many teachers indicated that technology increased student attendance, while others said that discipline problems decreased.

Improves student achievement. A growing number of studies are quantifying the benefits of technology in the classroom. Using technology to support instruction improved student outcomes in language arts, math, social studies and science, according to a 1995 review of more than 130 academic studies conducted by the Software Publishers Association. Students performing at below-average levels often see the greatest gains.

Encourages higher-level thinking. Effective use of technology in the classroom can transform the learning process. The computer can facilitate more "real-world" inquiries that require students to use higher-order skills such as problem solving, collaboration, statistical analysis and simulation. These types of projects require greater student initiative, meaning kids take a more active role in learning.

Involves parents. Parental involvement has long been recognized as an important contributor to student success. The broadcast nature of e-mail makes it easier and less time-consuming for teachers to communicate with parents on a regular basis, not only when problems arise. School-provided technology in the home can also increase the amount of time parents spend with children on homework.

Gives teachers tools to improve instruction. In business, management information systems have become critical to the efficient operations of every large company. In education, similar systems can give teachers powerful tools to monitor, guide and assess the progress of their students. Learning information systems can be used to track student performance—real time and over time. Teachers can also use technology to access resources to supplement instruction and exchange ideas with other teachers and professionals. Just as management information systems have become essential to the efficient functioning of successful businesses, learning information systems have the potential to become a permanent "teachers aide" in the classroom.

Utilizes the resources of the whole wired world. It has been said that it takes a village to raise a child. The Internet allows us to access the resources not just of our local community, but of the entire "global village" to educate our children. Whether kids live in Minot, North Dakota, Murfreesburo, Tennessee or Manhattan, they will be able to access the same resources on the Internet. These include museums, universities and even other school-aged children who may share unique interests.

Expands learning time. School-provided technology in the classroom encourages kids to continue learning after they leave school, mostly because it is fun. We have evidence that if you create engaging educational content, kids will spend time with it, rather than watching more TV. More time to practice subjects or explore interesting ideas enables children to improve their skills and develop creativity.

Prepares kids for the future. We live in a knowledge-based economy. The winners in this society will be those who can rapidly receive, filter, process and utilize information whenever and wherever it is desired or needed. The Department of Labor estimates that new and expanding technologies will account for 80% of new jobs in the next 10 years. We cannot let our children graduate from high school without full language literacy or technology literacy. We know that more than 350,000, or 10%, of IT jobs are presently unfilled. This percentage is expected to increase to 20-30% over the next five years. Technology proficiency will be a significant determinant of future economic success both for an individual and our nation as a whole.

Source: Merrill Lynch Global Growth Group

Limited State of Teacher Training a Challenge to Effective Technology Use

To implement technology solutions that will scale in schools, teacher preparation takes on particular urgency. Even if there is a PC for every child, in the classroom these will simply collect dust if teachers are not trained to use them in instruction.

Teacher training, then, becomes a major idea in K-12 e-learning.

Teacher training, then, becomes a major idea in K-12 e-learning. The logic surrounding teacher preparation is compelling enough that we predict a significant redirection of money toward teacher technology readiness. The Internet will supplement teachers in the classroom, with enhanced content from the world's greatest library, learning information systems and teacher community tools to learn from each other. We expect major grants, both federal and private, will contribute to the explosive growth of teacher tools and training resources.

Of the $4.2 billion our schools spent on technology in 1996, 61% was for purchases of hardware and 15% for software and online services. Another 18% was spent on supplies, service and "other." Teacher training accounted for only 6% of the total.

Merrill Lynch

Just 6% of K-12 Technology Spending Was on Training
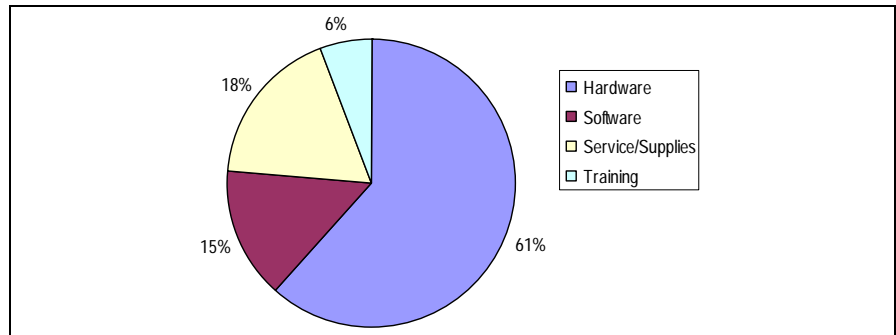
Source: The CEO Forum on Education and Technology. 1995-96 school year

As many as 65% of teachers had never used a computer before being introduced to one in the classroom

An evaluation of school technology budget for 1998-99 suggest that lack of focus on teacher training continues to be an issue, with just 5% of technology budgets dedicated to training. This amounts to less than $100 per teacher spent on technology training. Given the scope of the problems in education and the potential of technology as one solution, this amount is clearly insufficient.

The lack of teacher training is an impediment to making technology ubiquitous in schools. As many as 65% of teachers had never used a computer before being introduced to one in the classroom. Sixty-seven percent of our teachers are over age 40, and another 22% are between 30 and 39, meaning that most, if not all, were educated without the benefits of technology or at least acknowledgement of its potential in the classroom.

Distribution of Teacher Ages, 1993-94
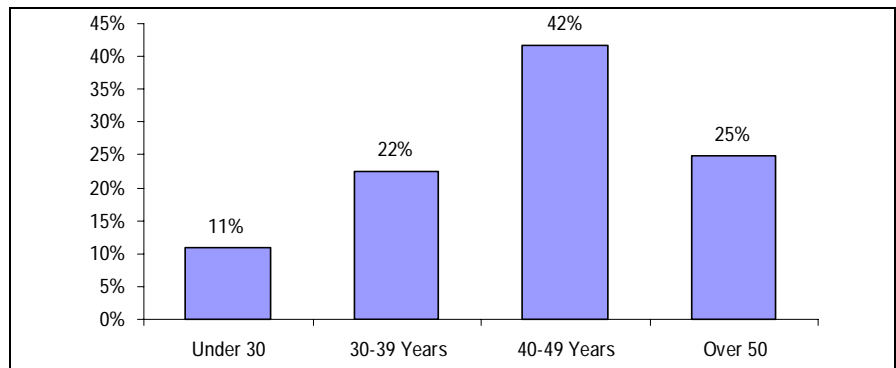
25% of teachers are over age 50, and another 42% are between 40-49.

Even today, only 24 states require computer education as a condition of licensure. Not surprisingly, a recent survey found that only 20% of teachers feel very well prepared to integrate educational technology into classroom instruction. In light of these demographics, such an attitude among teachers is hardly surprising.

Only 20% of Teachers Feel Prepared to Integrate Technology into the Classroom
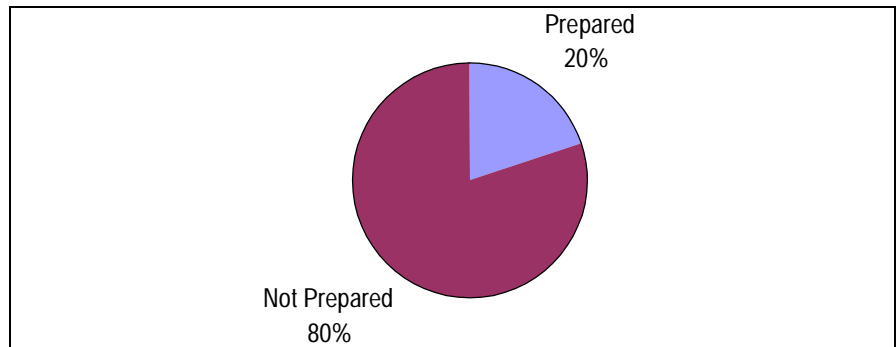
Source: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Teacher Survey of Professional Development and Training, 1998.

Helping teachers effectively use technology in instruction goes way beyond simply teaching them how to use Microsoft Office. Fundamental changes in classroom strategy and management are required, as shown in the following comparison between a traditional classroom and one capturing the potential of networked technology.

Technology Creating New Learning Environments

Traditional Learning Environment	New Learning Environment
Teacher-centered instruction	Student-centered learning
Single sense stimulation	Multisensory stimulation
Single path progression	Multipath progression
Single media	Multimedia
Isolated work	Collaborative Work
Information delivery	Information Exchange
Passive learning	Active/exploratory/inquiry-based learning
Factual, knowledge-based	Critical thinking and informed decision making
Reactive response	Proactive/planned action
Isolated, artificial context	Authentic, real-world context

Source: International Society for Technology in Education (ISTE) NETS Project, National Educational Technology Standards for Students, June 1998.

Technology can be a tremendous timesaver, but its real potential lies in providing teachers with rich information about their students' abilities and performance.

We believe companies that can help teachers make this cultural transition are facing a significant market opportunity.

Another area where we believe teachers are underserved is in the absence of technology tools, such as telephones and computers; tools their peers in other professions receive as a matter of course.

At its most basic level, technology can be a tremendous timesaver, but its real potential lies in providing teachers with rich information about their students' abilities and performance. At the most fundamental level, a junior high school in Richardson, Texas, installed telephones in classrooms so teachers could reduce time walking through hallways to communicate. This basic change saved teachers 15.5 days of time each year (CEO Forum, 1999). Think of the increase in time and improvement in effectiveness possible when teachers can complete administrative paperwork online, share lesson plans, assess student abilities and diagnose specific areas for improvement and communicate quickly and easily with parents.

Just as Management Information Systems (MIS) have become essential to the efficient functioning of successful businesses, Learning Information Systems (LIS) have the potential to become permanent fixtures in schools and classrooms.

Schools are only starting to use technology in this way, the way businesses have been doing for years—to automate operations, manage information, and improve (or even customize) service to customers. Just as Management Information Systems (MIS) have become essential to the efficient functioning of successful businesses, Learning Information Systems (LIS) have the potential to become permanent fixtures in schools and classrooms, providing teachers and administrators with tools to improve their performance and, in the process, student learning.

"A synonym is a word you use when you can't spell the word you first thought of."

– Burt Bacharach

Classroom Connect

Classroom Connect is a leading and pioneering provider of Internet-based curriculum products and teacher training/development programs for K-12 education. Since 1994, the company has offered products that bring the world into the classroom through the power of the Internet.

Combining intimate familiarity with grassroots educator and student needs with its management's technological, marketing, distribution and service savvy, Classroom Connect harnesses the Internet in two major ways, providing:

Real-time and interactive online classroom instruction content and experiences that express the curiosity of teachers and students (one is its Quest adventure series that takes students on live expeditions around the world, during which they interact with expedition leaders and other participating classrooms worldwide; another featuring curriculum reinforcing themes is Classroom Today) . . . all in a manner that is absorbed quickly and easily into a teacher's daily routine.

The company provides self-paced, anywhere anytime online Connected University as well as at coast-to-coast Connected Classroom Conferences) . . . all as Continuing Education Unit (CEU) credits are earned.

Founded: 1994

Headquartered: Foster City, CA

Public/Private: Private

URL: classroom.com

Claim to Fame: Helping teachers get online.

Investors: Brentwood Associates, Media Technology Ventures, MediaOne Ventures, Intel, U.S. Trust, Waller Sutton Media Partners Hillman, Cambria Grou

Partners: Pepperdine University, American Museum of Natural History, Discovery Channel School, CNN, J.L. Hammett, ZapMe! Princeton Review, Yahooligans!

Coolest Feature: The Quest learning adventures. Vote with your class on where the Quest members should pedal next.

Revenue Components:

    Content Sales: **X** (both curriculum and teacher education)

    Commerce: **X**

    Advertising:

    Service :

    Other: **X** (Sponsorship of Quests)

Hub/Portal Strategy: Yes

Network Effect: Yes

Metrics to look for:
Unique Users

Competitors: Minerva, APEX Learning, Teacher Universe

Teacher Universe, Inc. – The hub for teachers

Teacher Universe, Inc. is a teacher-centric hub with a strong technology and career development focus. The hub offers resources to improve the deployment of technology in schools, including instructional tools and resources that help teachers integrate technology into the classroom, teacher technology training and assistance in developing long-range technology plans. The site will also have a grant database and application guide to help schools implement their plans. The website currently features grants and funding links.

Teacher Universe will also provide tools for teachers seeking to advance their careers, from online professional development to mentors to teacher job placement services. Professional development, licensing and certification are all means by which teachers can increase their salaries and eligibility for promotion. By adding recruiting-style services, Teacher Universe is able to provide the full spectrum of teacher professional development services – assessment, training and job placement.

The company is the exclusive distributor of Galaxy Classroom, a dynamic learning curricula via interactive video for students K-5. Galaxy Classroom combines many best practices in teaching and learning together with an extensive array of resources including hands-on and minds-on investigations, take home extensions, interdisciplinary connections and teacher learning opportunities with on-going professional support. Many of the Galaxy Classroom curricula are in both English and Spanish and many videos are also available as open-captioned. Galaxy Classroom currently serves over 700 elementary schools nationwide.

Founded: 1999

Headquartered: Emeryville, CA

Public/Private: Private

URL: teacheruniverse.com

Claim to Fame: Focus on teachers for technology and career development

Investors: Wholly-owned by Knowledge Universe

Partners: Microsoft, Compaq, IBM, The Learning Company

Coolest Feature: Compilation of research on effect of education technology on student achievement as well as list of certification requirements and links to state agencies.

Revenue Components:

Content Sales: X

Commerce: X

Advertising:

Service: X

Other:

Hub/Portal Strategy: Yes

Network Effect:

Metrics to look for:
Unique Users

Competitors: Classroom Connect

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17. The K-12 e-Education Landscape

Like other industries where the Internet has a strong presence, e-learning companies can be classified into five categories:

- Community
- Content
- Commerce
- Infrastructure
- Ancillary Services

Favorite Bookmarks of Judy Hamilton,
CEO of classroom.com

www.classroom.com
www.amazon.com
www.nytimes.com
www.mercurycenter.com
www.mlol.ml.com

18. Linking Homes and Schools – The Next Online Land Grab For e-Portals & Hubs

Forty-two million kids and teens online at home, not to mention their parents, by 2003 clearly make the home e-education market attractive. The school market is equally compelling, covering 53 million school children and 3 million teachers.

Today the rush is on to own key groups of this market – teachers, students and their parents. The Holy Grail of these efforts is to effectively capture all three through an education hub offering content, services and community. Start up companies and established publishers alike have announced plans to serve this triumvirate.

These so-called "Education Hubs" are more than portals (gateways) to the broader Internet, they are entire education communities. These hubs provide education resources, access to information and interaction with colleagues. They provide a structure in which to share ideas and collaborate. They also serve as repositories of knowledge and skill improvement resources, as well as ideas for fun and engaging ways to use the Internet in class and on one's own.

The lynchpin to many of these efforts is the teacher. Once endorsed by the teacher, these sites can enjoy an audience multiplier effect of twenty to fifty times. One teacher may be able to deliver 25 children, and 25 to 50 moms, dads, and even grandparents. Teachers can have incredible sway over parental decisions about education, influencing, for example, decisions about what books or software to buy. If teachers are online, posting homework, grades or other student or class specific information, you can bet that many concerned parents will log on too. So will kids, interested in tracking their progress on the web. Thus, companies who have locked up the teacher relationship will continue to build their market presence with services for students and parents.

K-12 Education Hub Statistics

Size of Market (1999)
$50 million

Market Growth Rate
100%

Key Players
ZapMe!
Lightspan
Classroom Connect
BigChalk
eSCORE
Family Education

Source: Merrill Lynch Global Growth Group

"Education Hubs" are more than portals (gateways) to the broader Internet, they are entire education communities. These hubs provide education resources, access to information and interaction with colleagues.

"To understand the land-grab strategy, consider an analogy. It is as if Texas suddenly said 'All of our land is free, and whoever builds a fence around a piece of land owns it.' VCs would fund a flurry of fence-laying companies that burn through their cash. In their gut, they would be saying, 'Real estate will have some value.' The fence-layers would have some interesting projections on how they could make money in the future. In contrast, some old-school businesses will raise cattle and fund expansion out of well-managed earnings. They will lose the land grab. Some cynics will sit back and crunch the numbers to argue that the state will soon be over saturated with a glut of cattle. They will properly predict price drops and short the fence-laying companies stock. They will lose their shorts. Meanwhile, some early signs of alternative monetization will crop up-cotton, oil wells, tractor-pulls, etc. Some fence layers will look really prescient for locking up the premium properties in advance."

– Steve Jurvetson
Managing Director, Draper Fisher Jurvetson

Once endorsed by the teacher, these sites can enjoy an audience multiplier effect of twenty to fifty times. One teacher may be able to deliver 25 children, and 25 to 50 moms, dads, and even grandparents.

Classroom Connect has taken this strategy with the release of its teacher-centric "education hub" Teacher Connect. It provides teachers with training, classroom tools and resources, real time curriculum supplements and a community of other teachers who can share with and support each other. In the future, Classroom Connect plans to add content and resources for families and students. Lightspan is taking a similar strategy, releasing PageOne for teachers, with plans to expand into the home, particularly through delivering the rich curriculum product it owns, AchieveNow, with the broadband distribution capabilities of its investor-partners.

Home-School Hub – Lightspan.com's Strategy to Leverage Curriculum Assets

Lightspan

Lightspan
Network

Classroom
Home Page

Parent Store

PageOne

Teacher Store

**Internet
Strategy**

LIGHTSPAN .COM

**Academic
Systems**

**Achieve
Now**
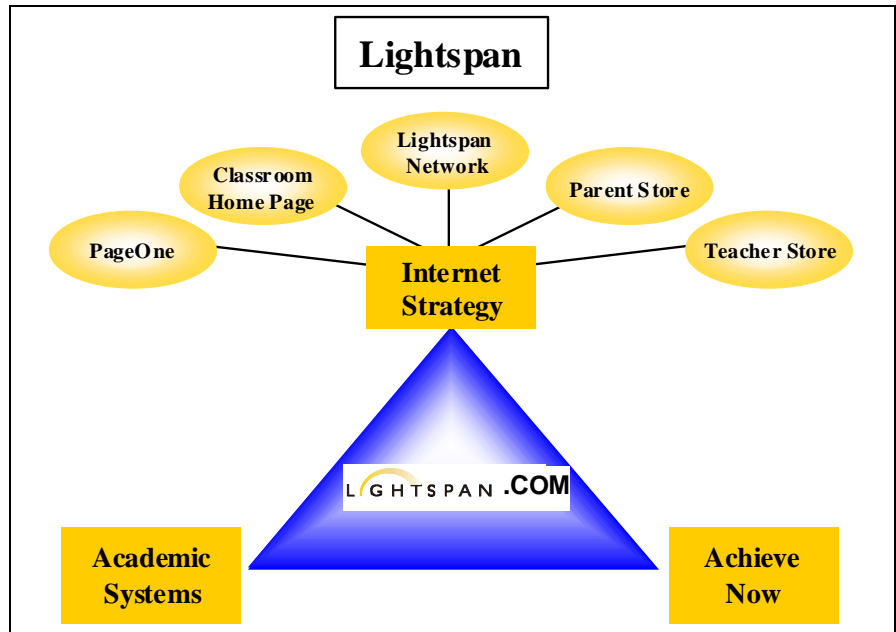
Source: Lightspan

Home-School Hub – Classroom Connect's Strategy Build Teacher, Parent Communities

Classroom Connect

Classroom
Today

Connected
Conferences

Classroom
Products

Classroom
Community

Teacher
Community

Connected
University

Quests

Connected
Teacher

Classroom
Connect
Hub

Newsletter

Future
Products

Family
Community

Future
Communities

Future
Products
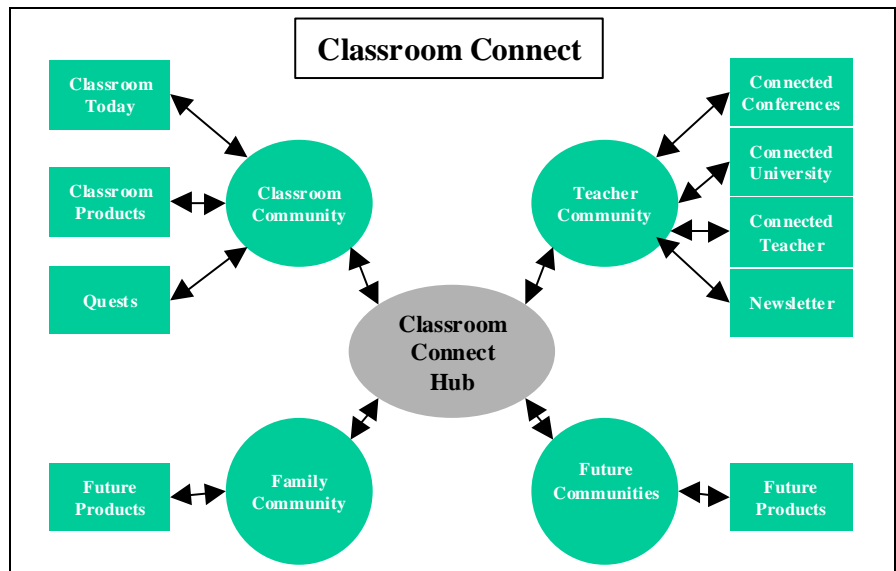
Source: Classroom Connect

ZapMe! is primarily staking its claim around students, but also plans to meet teacher and administrator needs through technology. ZapMe! provides schools with 15 free computers and satellite Internet access, supported by commercial sponsorship. The ZapMe! Netspace is designed for technology-using teens, with features like the e-locker (homework hosting, so work started at school can be completed at home), ZapMail, and ZapPoints, a frequent user program. These programs will encourage teen use at home, providing another opportunity for ZapMe! to build site membership and drive revenues. For administrators, free computers facilitate e-commerce of school supplies and services.

Communities

Teen Oriented

Alfy.com
Alloy.com
Bolt.com
Freezone.com
SurfMonkey.com
Teens.com
Zeeks.com

School Oriented

American School Directory
ASD
BigChalk.com
Classroom Connect
Copernicus.net
E.D.'s Oasis
eduventions
e-Pals
FamilyEducation Company
Knowledge Universe (KidsEdge, Teacher Universe))
KOZ: Schoolife.net
Lightspan (PageOne)
NCS (ParentConnect)
Netcenter (KidZone)
NSchools
Powerschool
School City
Scientifc Learning (Brainconnection.com)
Teachers.net
Thinkwave
ZapMe!

Still another drive in this land grab takes its first aim at parents and families. FamilyEducation Network, for example targets parents of school aged children by providing them with educational resources and references and connects them to experts and each other to create a community formed around learning. FEN's MySchoolOnline helps schools get online by offering free web-building tools and hosting services. It is currently home to 9,000 schools, teachers and education-focused organizations. The company's most recent move was to introduce TeacherVision.com, where teachers can access free resources and share ideas.

The "Trojan Mouse" – The Power of Free

These education hub and portal sites use various business models in driving traffic and revenues. FamilyEducation Company and ZapMe! rely on advertising. Components of Classroom Connect's site include high-quality content available for free, with additional, supplemental material and teacher training offered on a subscription basis. Lightspan.com will focus on meeting the shared needs of teachers and parents to help students learn while expanding its reach to the valuable consumer audience. Teacher resources are free, but through expanding its reach to the consumer, the company intends to create a stream of traffic to which it can advertise and from which it can generate e-commerce revenue.
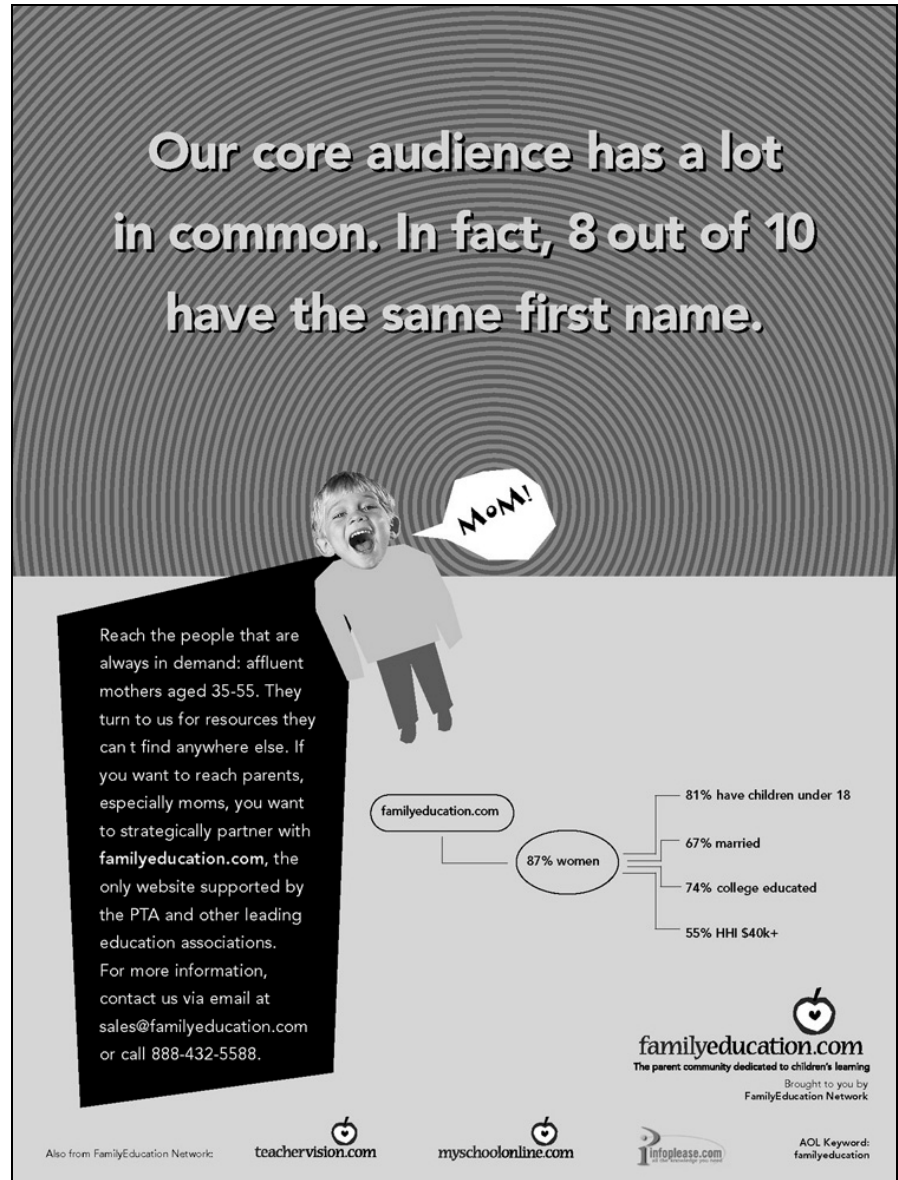
There is one common thread across these business models, and that is FREE. Free hardware, free content, free e-mail and other free services are viewed as critical to capture teachers' attention and quickly expand reach among this group. But FREE is simply the foundation for real revenue streams. The point of these strategies is to JUST GET IN THE DOOR. The Trojans of the New Economy, however, do not come in the form of a horse, they come as a mouse.

"Always remember that this whole thing was started by a mouse."

– Walt Disney (1901-66)

Teachers, of course, aren't the only attractive demographic in this market. Parents too are increasingly concerned about their children's education and are finding ways to become more involved. The Internet is proving to be a powerful source of information for parents, as well as a powerful place to reach this select demographic. The following advertisement from FamilyEducation Network, clearly highlights this point, indicating that 80% of its users have "the same first name."

Creating a Community: One Example

Source: FamilyEducation Company. Reprinted with Permission.

Pre-K

Some companies aren't waiting for children to enter kindergarten, by capturing them and their parents as an audience even earlier. ParentWatch, for example, allows parents to view their kids at pre-school while sitting at their desks at work. These sites give parents a reason to log on by offering highly individualized content, providing the opportunity to create parental hubs around common interests.

FamilyEducation Network

FamilyEducation Network develops and provides parenting and educational resources and services for families, schools and other groups interested in education. The company has built a portal network that includes familyeducation.com (parents,) teachervision.com (teachers, students,) and infoplease.com (reference.) In addition, the company is building a value-added web hosting network (myschoolonline.com) with over 1,400 school districts currently being hosted. The company helps parents use online tools including learning games from FunBrain.com, as well as publications to become more involved in their children's education and development. For educators, the FamilyEducation Network offers schools free customized web sites to create a parent/school connection and a range of interactive learning tools. The company has developed a unique partnership with public sector associations such as The National PTA, National School Boards Foundation and others. The company offers an online e-commerce program that supports school fundraising. The company has also partnered with America Online, Harcourt, and NBC. More than 1,400 districts plus many schools and teachers schools are now using the FamilyEducation Network, schools from 48 states, the District of Columbia and Puerto Rico.

Founded: 1990

Headquartered: Boston, MA

Public/Private: Private

URL: familyeducation.com, infoplease.com, funbrain.com, teachervision.com, schoolcash.com, myschoolonline.com

Claim to Fame: Forging partnerships with education organizations: The National PTA, American Association of School Administrators, National School Boards Foundation, National Education Association

Investors: Harcourt, Sprout Group, AOL, Intel, Jostens, Morningside Ventures

Partners: AOL, Harcourt, JuneBox.com (School Specialty), FamilyWonder.com, Games2Learn, DrKoop.com, national education organization, PTA

Coolest Feature: Quizlab, Math Baseball, WhatWorks

Revenue Components:
  Content Sales:
  Commerce:
  Advertising:
  Service:
  Other:

Hub/Portal Strategy: Yes
Network Effect:

Metrics:
Visits (February, 2000): More than 4 million monthly visits
Page Views (March 2000): Over 56 million/month

Competitors: Lightspan Network

Lightspan, Inc.

Lightspan is building an education network for schools and families. On the Internet, the company offers Lightspan.com, a free K-12 education portal for teachers, parents, and students, providing invaluable resources, research, and grade-specific activities, all in one convenient place. Lightspan.com also includes Your Class Online and Your School Online that allow schools and teachers to create their own customized Web sites quickly and easily. Your Class Online provides teachers with their own starting point on the Internet – a classroom Web site where they can assemble their most valuable Web resources. With Your School Online any school can publish a customized Web site, connecting with families to showcase the school calendar, send school messages, and share favorite Web links. The Lightspan Network® is Lightspan's premier subscription service for classrooms, providing the largest collection of standards-based online learning activities, professional development services, full customer support, and state- or district-level customization.

Lightspan's original foundation is Lightspan Achieve Now™, a comprehensive curriculum software that is proven to increase student achievement in schools across the country. Featuring rich graphics and cartoon characters like Mars Moose, Achieve Now is delivered via PC or a Sony PlayStation. With broadband Internet access, Achieve Now could be delivered over the Internet to homes and families, creating a valuable "premium channel" of educational content.

To become the dominant e*channel, Lightspan needs to be accepted not only by teachers, it must also be "pulled in" by the millions of families with school-aged children. To accomplish this, Lightspan's Internet products link schools and homes with e-mail, calendar tools, homework assignments and educational activities. By providing a fun, simple and effective means for parents and teachers to work together, Lightspan increases a family's involvement in their children's education.

Founded: 1993
Headquartered: San Diego, CA
Public/Private: Public (NASDAQ: LSPN)
URL: lightspan.com
Claim to Fame: Mars Moose, lead character in Lightspan's interactive curriculum software for grades K-6, Lightspan Achieve Now.

Investors: Kleiner Perkins Caufield & Byers, Accel Partners, Comcast, Microsoft, Liberty Digital, Institutional Venture Partners CINAR Films, Cox Communications, Gateway, Sony, Vulcan

Partners: Sony Computer Entertainmnet, CINAR, SmarterKids.com, Yahoo!, Tribune, Cox, Comcast, AT&T

Coolest Feature: Learning Search™, the premier education search tool, containing over 115,000 quality educator-reviewed sites, lesson plans, online learning activities, and encyclopedia articles that are relevant to the classroom and age-appropriate to the student.

FY 2000A Revenues*: $16.9M
FY 2001E Revenues*: $63-65M
Market Value: $349 M (5/15/00)
Revenue Components:
  Content: X
  Commerce: X
  Advertising: X
  Service: X
  Other :   X

Hub/Portal Strategy: Yes
Network Effect:

Metrics (FY 2000A):
Number of Unique Users 426 M:
Number of Visitors 1,009 M
Number of Page Views 4,504 M

Competitors: Classroom Connect, Family Education Network
*FY ends January 31.

Chase Capital Partners Keiretsu

Chase Capital Partners (CCP) is a global private equity organization which provides equity and mezzanine capital financing to private and public companies. Chase Capital Partners invest throughout the entire life cycle of the business development process. The firm's investment mandate permits maximum flexibility in supporting the equity needs of businesses worldwide, and its extensive global network of strategic relationships complements its existing base of investments.

CCP's primary limited partner is The Chase Manhattan Corporation, one of the nation's largest banking holding companies with approximately $357 billion in assets. This source of capital provides CCP with an unparalleled flexibility in structuring and closing a wide variety of transactions. Chase Capital Partners'affiliation with Chase provides a number of competitive advantages ranging from additional deal flow to industry expertise. Through this partnership, CCP is well positioned to adapt to changes and opportunities in the marketplace.

In keeping with the keiretsu theme, Chase Capital Partners also directly leverages its international network to further add value and enhance business opportunities for its portfolio companies. The following are the investments that CCP has made in the education industry:

The Chase Capital Partners Human Capital Keiretsu

Company Name	Company Description
Apollo International	Operator of international post-secondary schools
Advantage Schools	Operator of charter schools
Collegeboard.com	Creates and administers standardized tests for college bound seniors
Eduprise.com	Provides a solution to higher ed. Institutions and corporations for creating on-line courses
JLC Holdings	Provider of educational programs to schools districts
La Petite Academy	Provides for-profit child care and pre-school educational services
Ninth House Network	High-quality, media-rich, on-line learning for corporations
Web CT	Web-based higher education teaching solutions

The Chase Capital Partners Keiretsu
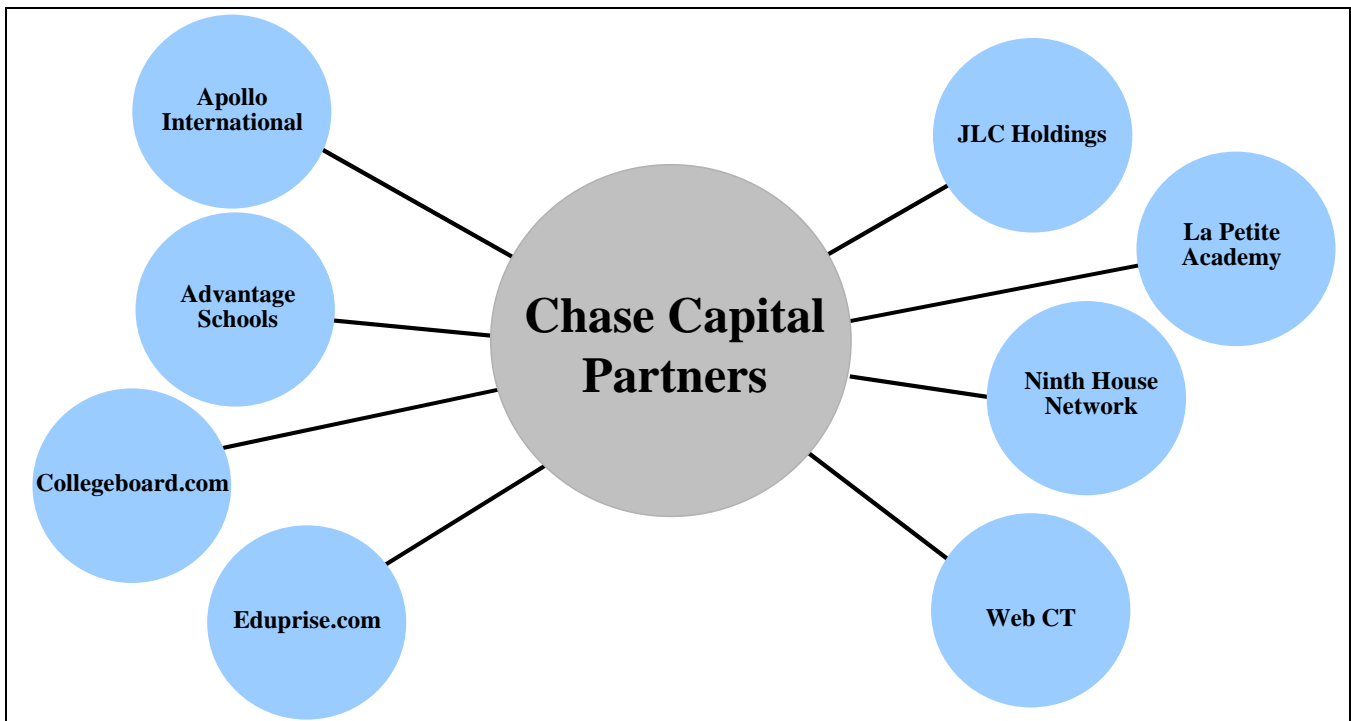
Source: Merrill Lynch Global Growth Group

19. Learning Redefined – Content Goes Digital

Even education hubs will need great content. We see the ability to provide strong educational content in a way that takes advantage of the unique characteristics of the Web as a compelling opportunity. Content that has not simply been repurposed, but has been rethought for Internet delivery, is content for which schools and parents are most likely to pay.

The Internet is the world's greatest library. Even those institutions that held this distinction in the old economy, such as the Smithsonian Library, are digitizing their collections, contributing a tiny, but valuable portion of the enormity of content on the Net.

Undeniably, one of the greatest applications of the Internet in education is providing students with access to this rich content. Paradoxically though, the breadth of content available on the Internet also creates challenges for educators and students. How can they effectively sift through all the information out there?

Among the clearest opportunities for e-learning companies is contributing value-added content to the Internet's expansive portfolio and/or identifying what that content is and how it can be used in enriching student education.

We estimate that the size of the educational content market overall is approximately $4 billion, which represents total U.S. spending on textbooks and instructional technology. Currently only a fraction of that market is captured by online content sales, although we expect the Internet to both capture share from offline content sources, such as textbooks, as well as expand the size of this market overall.

K-12 *Content Statistics

Size of Online Market
$20 million

Market Growth Rate
40%

Key Players
Classroom Connect
APEX Learning

Source: Merrill Lynch Global Growth Group

We estimate that the size of the educational content market overall is approximately $4 billion.

Home-Directed Content

BennySmart
Cartoon Network
Children's Television Workshop
Crayon Crawler
CyberKids/CyberTeens
Disney.com
Headbone Interactive
JuniorNet
KOLA
MaMaMedia
Nickelodeon (Nick Jr. & Noggin)

Source: Merrill Lynch Global Growth Group

Parent-Directed Content

Parent Soup
Parent Time
FamilyEducation Company

Source: Merrill Lynch Global Growth Group

Educational Content Goes Digital

e-Learning companies with content on the Internet are posting it for a variety of reasons and are taking a variety of approaches.

1. Adding online content to supplement offline content: Most publisher websites provide activities and website links that reinforce lessons taught in their formal curriculum programs.

2. Digitize formerly offline-only content: Newspapers, encyclopedias and other reference materials are excellent examples of the benefit of digitizing previously offline only content. Digital conversion of rare books, scholarly texts or general reference material makes these works much easier to access.

3. Some entire books are already available as e-books, digitized versions of their paper-based selves. Currently e-books are loaded onto portable readers. One such reader, the Rocket e-book, has sufficient memory for up to 10 books. The complete works of Shakespeare, for example, can be downloaded from the Internet in about 10 minutes.

    E-books have strong potential to replace paper-based textbooks. Not only would e-books lighten the weight of student backpacks, they can also be kept more up to date than books printed every five to seven years, benefiting students, content authors and smarter "textbook" publishers alike. For textbooks, if not reference materials, however, the real opportunity is transforming paper-based books in a way that takes advantage of rich multimedia, hyperlinks and other technology, not simply supplying the same materials in an electronic format.

School-Directed Content

AbleMedia.com
APEX Learning, Inc.
BigChalk.com (Electric Library)
Bonus.com
Boxer Learning
ChildU
Class.com
Classroom Connect
DiscoveryKids
Eplay
Family.com
FamilyEducation Company (TeacherVision)
FunBrain.com
FunSchool.com
HomeworkCentral
Kaplan (e-score)
Knowledge Adventure (EduCast)
Knowledge Universe (KidsEdge)
Learning Outfitters
Lightspan (StudyWeb, Global Schoolhouse)
MainXChange
MathForum
Mathsoft
N2H2 (Searchopolis)
NCS (Educational Structures, NovaNet)
NetLibrary
New York Times (NYT Learning Network)
Newsbank
On Line Class
Oz New Media
PBS (PBS Online)
Pearson (CCCNet)
Princeton Review (Homeroom.com)
Riverdeep (Logal)
Scholastic
Scientifc Learning
TRO Learning (Plato)
ZapMe!
Encyclopedias: Microsoft's Encarta.com,
   Brittanica.com, Comptons, Groliers
Textbook publishers: Harcourt Brace, Houghton
   Mifflin, McGraw Hill, Pearson, etc.
Educational Software companies: The Learning
   Company, Knowledge Adventure, etc.

4. Create content specifically for the Internet: Some content has never been recorded in print format because there was no way to compile it in a meaningful way or reasonably distribute it. For example, acclaimed authors have agreed to work with Scholastic to provide writing seminars on its website. Students get tips on biography, folktale, mystery or myth writing from noted authors. Some students' work will be published online, along with comments from the authors, based upon what they reveal about the writing process. Other content is much more suited to the Internet's non-linear presentation of information, with hypertext links enabling students to explore certain aspects of a topic before others.

5. Replace offline content: Instead of lectures, books, videos or slideshows, teachers can choose to lead entire lessons with the Internet as guide. The computer can facilitate "real-world" inquiries that require students to use higher-order skills such as problem solving, collaboration, statistical analysis and simulation. These types of projects require greater student initiative, meaning kids take a more active role in learning. In these cases, students often retain more of what they learn.

Adding Value Through Organization

Integrating and organizing this online content is a second means of adding value. The spectrum of content, once organized, ranges from a compilation of related Internet "links" on a particular topic all the way through to a complete high school degree delivered online. Almost every e-learning company participates in the first box on the spectrum, providing links to the "10,000 top educational websites." for example. Many also develop some unique content and post in on their sites. Some companies have aggregated these various content sites into coherent lesson plans.

Few companies have yet pushed beyond this point on the spectrum to integrating content beyond the subject level. The most notable exceptions are APEX Learning, which delivers instructor-led Advanced Placement courses, and I-diploma.com and class.com, which are seeking to deliver an entire suite of courses online that would qualify students for a fully accredited high school degree.

Resources can also be organized for specific groups. Homeschoolers, for example, once isolated from each other, can now access not only a rich spectrum of lesson resources, but also each other. Both the content and the community aspects of the Internet have powerful applications in this market.

Online Content Spectrum

Online Content Spectrum	Links to Content Pages	Content Pages	Virtual Lesson Plan	Virtual Class	Virtual High School
Online Content Providers	All Portals, Most e-Learning Companies	Most Content providers Publishers Classroom Connect	Classroom Connect NCS Homework Central.com	APEX Online Learning	State Initiatives
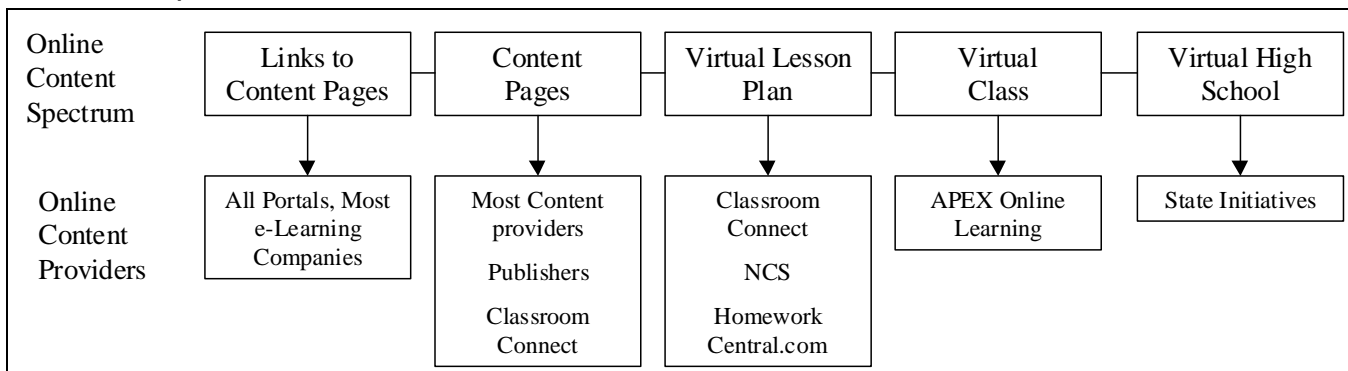
Source: Merrill Lynch Global Growth Group

Portals with Education Verticals

Portal	Education Channel
America Online	AOL Research & Learn
	AOL @ School
Microsoft/MSN	MSN Ref & Ed/Encarta
	Microsoft Classroom Teacher Network
Lycos	LycosZone
	Classroom Tripod
Yahoo	Yahooligans
Ask Jeeves	AJKids
N2H2	Serachopolis (Inktomi)

Homeschool Directed Content

Homeschool Media
Homeschool World
Homeschoolers Curriculum Swap
Homeschooling Zone
Unschooling.com
Home2School.com

The real value in online educational content, in our view, is not in simply putting existing content online, but taking advantage of the Internet's unique attributes to create new content.

Rethinking Educational Content

The real value in online educational content, in our view, is not in simply putting existing content online, but taking advantage of the Internet's unique attributes to create new content. The network effect. Its global reach. Its interactivity. These attributes can be powerfully applied in education. Two examples highlight what we see this as an important content opportunity.

- ePALS is an online version of the traditional "pen pal", but instead of linking individuals, ePALS links entire classrooms. Corresponding with children in other countries can help students learn language arts, cultural, history, geography, social studies, and science in a very personal and immediate way. Remember the country report on Ireland you wrote in 5th grade? Imagine talking with students in that country about what their lives are really like. One 5th grade classroom in New Jersey did just this, linking with a class in Ireland to compare the impact of the great Irish migration in the early 20th century to the U.S. Together, they explored what this meant to Ireland as well as the U.S., adding perspective beyond what most teachers or textbooks alone could ever do. To date, ePALS connects 1.5 million students and teachers in 20,135 registered classrooms from 108 countries. With technological breakthroughs being made in Internet voice and video communications, ePALS classrooms will soon be able to share photographs, images, sound and video clips. Technology will ultimately be able to help students surmount language barriers by offering simultaneous language translation, hence expanding the unique network of the global Internet.

- The Classroom Connect Quest series is another example of how education can be transformed through the power of the Internet. On these adventure learning field trips, a small group of experts – an anthropologist, archeologist, biologist, technologist and team leader – ride their bicycles through the land of an ancient culture, such as Guatemala, the Rift Valley of Africa, or China. The team is seeking answers to a mystery, such as "Did Marco Polo Really Discover China?" Students are invited to theorize along with the experts, and vote on the next moves of the Quest team.

Learning Redefined – Discovering China Goes Digital

Old School	New School
Read about China in a book	Follow a team of experts as they ride through China over four weeks. Map out their daily travels and read about their discoveries.
See a filmstrip on China, if your teacher ordered one ahead of schedule.	Hunt for clues that would shed light on an era in Chinese history.
Listen to a guest speaker who has lived in or visited China, if available.	Learn about Chinese culture through encounters with natives; read observations on biology from an expert.
Look up more information in the Encyclopedia, if still interested.	Ask questions of experts via e-mail and read posts from other students monitoring the Quest.
	Vote on where the Quest team goes next. Log on again to see if the team followed your recommendations or if your class is featured on the site.

Source: Merrill Lynch Global Growth Group

The number of examples like these two is growing, adding a richness, interactivity and perspective that K-12 classes have never enjoyed before.

Show Me the Money – Schools Will Buy Value-Added Content

Will K-12 schools pay for good online instructional content? At the upper end of the content spectrum, the answer is clearly yes. Schools today are paying for value-added content such as virtual lesson plans, online courses or degrees. These may be on a per use basis or subscription form. Classroom Connect has made some of its Quest materials available at no cost, by signing on corporate sponsors to underwrite a portion of the trips. Teacher resource materials and the ability to interact with the Quest team, however, are "premium" services that schools pay for.

"Free" continues to be an operative word in the content side, with e-learning companies using links to content or content pages as "hooks" to drive traffic to their sites. These companies hope to monetize this traffic through advertising or selling products, such as textbooks, portal subscriptions or teacher training to visitors.

Brands are incredibly important online, whether in the business market or the consumer market.

Leveraging and Creating Content Brands

Brands are incredibly important online, whether in the business market or the consumer market. Companies that have existing offline brands are finding some success now in taking their content online. For the most part, these companies are doing so on their own, without infrastructure partners. Interestingly, the opposite has been true in higher-ed markets, where the strongest brands tend to be colleges and universities themselves, and not for-profit companies with strong market orientations.

	Business-to-Business	Business-to-Consumer
Branded Content	Scholastic APEX Learning Classroom Connect	Princeton Review Kaplan
Aggregated Content	BigChalk	FamilyEducation Company

Source: Merrill Lynch Global Growth Group

Previously unknown brands are building them on the net by creating content of their own, or leveraging content of others. APEX Learning and Classroom Connect have found traction by creating strong content and marketing to teachers. Homework Central has taken a different approach, aggregating teacher-created content on one site to create a database of lesson plans that is over 14,000 plans strong.

Teacher Training

Advantage Learning (Gen21)
Apex Learning, Inc.
Apple Computer (Apple Staff Development Online)
Blackboard.com (targeting engine to school)
Classroom Connect (Connected University)
Minerva
Knowledge Universe (Teacher Universe)
Universities with online course offerings
WebEd
wwwrrr.com

We estimate that schools spend $3 billion annually in teacher training.

Teacher Training Online

Teacher training should be an area of tremendous growth in the next few years, as we seek to hire the two million new teachers needed to fill our classrooms, help teachers integrate technology in the classroom and raise standards for academic achievement.

We estimate that schools spend $3 billion annually in teacher training, although today most of that takes place in offline formats. However, as teachers become increasingly familiar with technology, it will become an easy and accessible way for them to learn. Combine ease of access with a very real economic motivation – teacher pay scales are driven in part by certification and education levels – and the result is the likelihood of major growth in online training for teachers.

Another benefit of teacher online training is the opportunity to overcome the isolation of the classroom. Today's teachers spend most of their time with their students, maybe escaping to the teacher's lounge for a 30-minute break for lunch. With the Internet, teachers can meet online with other teachers who share their interests, either professionally or personally. A high school might have just one AP Biology teacher, for example, whereas an online community could connect a dozen AP Biology teachers and use training content to drive an interactive dialog between them.

Mentoring, or the oversight of young teachers by Master teachers, is also recognized as one way to both improve new teacher effectiveness and satisfaction in their jobs. Online training can easily be complemented with mentoring, bringing an ongoing level of support to new teachers. Given that one-third of new teachers leave the profession within the first three years, the ability to reduce this high level of turnover should provide very real benefits to schools.

First Grade Wisdom

A first grade teacher collected well-known proverbs. She gave each child in the class the first half of the proverb, and asked them to come up with the rest:

People in glass houses shouldn't …………………………………………..run around naked.

Better to be safe than …………………………………………………… punch a 5th grader.

Strike while the ……………………………………………………… bug is close.

It's always darkest before ………………………………………….. daylight savings time.

Never underestimate the power of …………………………………….termites.

You can lead a horse to water but …………………………………….how?

Don't bite the hand that ……………………………………………….is dirty.

No news is ……………………………………………………………impossible.

A miss is as good as a ………………………………………………….Mr.

You can't teach an old dog …………………………………………… math.

If you lie down with dogs, you ……………………………………….will stink in the morning.

Love all, trust …………………………………………………………. me.

The pen is mightier than …………………………………………….. the pigs.

You can't teach an old dog …………………………………………….math.

If you lie down with dogs, you ……………………………………….will stink in the morning.

Love all, trust …………………………………………………………. me.

The pen is mightier than …………………………………………….. the pigs.

An idle mind is ……………………………………………………….the best way to relax.

Where there is smoke, there's ……………………………………..pollution.

Happy is the bride who ………………………………………………gets all the presents.

A penny saved is ……………………………………………………. not much.

Two is company, three's ……………………………………………. the Musketeers.

None are so blind as …………………………………………………. Helen Keller.

Children should be seen and not ……………………………………. spanked or grounded.

If at first you don't succeed …………………………………………….. get new batteries.

You get out of something what you ………………………………… see pictured on the box.

When the blind lead the blind …………………………………….. get out of the way.

There is no fool like ………………………………………………….. Aunt Edie.

Laugh and the whole world laughs
with you. Cry and ……………………………………………………. you have to blow your nose.

Source: Perkins Capital Management

APEX Learning, Inc.

Microsoft co-founder Paul Allen began Apex Learning, Inc. in 1997. APEX is an innovative online service providing quality Advanced Placement courses to schools with limited resources for AP instruction. APEX courses enable college-oriented high school students the opportunity to take an AP course not normally offered at his or her school. These courses feature experienced AP teachers working with students over the Internet.

APEX courses are self-paced, but are not independent study. Experienced faculty interact with students online and are also available by telephone. The company, funded by Vulcan Northwest, currently offers two courses: U.S. Government & Politics and Microeconomics. Upcoming courses include Calculus, Physics, Statistics and History. Providing the best content to learners will deliver on the promise of the Internet. The company's website offers crash courses in A.P. exam topics. The company plans to launch a line of AP teacher training products in the summer of 2000, plus a full line of online teacher training products in the Fall. It is now in pilot with over 100 teachers in 5 schools districts plus Edison School Systems.

Founded: 1997

Headquartered: Bellevue, WA

Public/Private: Private

URL: www.apexlearning.com

Claim to Fame:

Investors: Vulcan Ventures; Edison Schools, Warburg Pincus, Maveron Ventures, Kaplan, Inc.

Partners: Kaplan, Inc., Edison Schools, Inc., Michigan Virtual University (MVU)

Coolest Feature: Course demos in Calculus AB, Statistics, U.S. Government and Politics, and Microeconomics

Revenue Components:

Content Sales: X

Commerce:

Advertising:

Service :

Hub/Portal Strategy: No

Network Effect: Yes: More students could mean more course options, as well as richer online class discussions

Metrics to look for:
Unique Users: 500 full enrollments, 18,000 participants in review program
Number of schools: 2000

Competitors: Class.com, CCC, Classroom Connect

Class.com, Inc. – Providing quality education over the Internet to learners worldwide

Class.com, Inc. offers students a fully accredited high school diploma over the Internet. The company delivers its high school course offerings from the University of Nebraska, through its Independent Study High School, founded in 1929 and which, in 1978, became the nation's first fully accredited university-based independent study high school. The high school offers more than 150 courses (36 are Internet delivered) and has over 6,000 students currently enrolled in every state and in 135 countries worldwide. The school has graduated more than 3,200 students since 1968. A student who completes a minimum of 40 required courses receives a full college-preparatory diploma not a high-school-equivalency credential) from the Independent Study High School.

In what we expect will be the company's primary growth driver, Class.com also sells its Internet classes to public and private schools and universities. For these customers, Class.com's offerings enable them to continue to serve and ultimately grant degrees to students who are unable to complete their full education at a physical campus. The state of Kentucky's virtual high school is the company's first major client and has started to purchase Class.com's online offerings for the -spring 2000 semester. In what we expect will be the dominant model for public school systems considering offering classes online, the Kentucky program is designed to complement its high school offerings, not replace them. In addition, the company has recently completed a similar deal with the state of Kansas and is offering its courses to every public high school in that state during the spring 2000 semester.

The Company's stated goal is to provide the highest quality courses that will meet the educational needs of students, parents and school officials together with the support services to ensure student success. Its Internet-based courses use video, graphics, sound, interactivity, and text to encourage individualized discovery and learning, while maintaining the quality demanded of an accredited diploma program, a necessary condition for "education without boundaries" to be successful in the K-12 market.

Founded: 1998 (spun from program founded in 1929)
Headquartered: Lincoln, NE
Public/Private: Private
URL: class.com
Claim to Fame: First Accredited High School Online

Coolest Feature on the Website:

Key Investors: University of Nebraska and Individual Investors
Key Partners: University of Nebraska, Edunexo.com

Key Clients: State of Kentucky, State of Kansas

Revenue Components:
Content: X
Commerce: X
Advertising:
Service:
Other:

Network Effect:
Hub/Portal Strategy: X

Key Metrics: (at 12/31/99)
Number of users/students: over 6,000
Number of employees: 115
Number of Internet courses: 36
Number of page views: 250+m/month
Number of clients

Scientific Learning Corp. – Using its Brain

Scientific Learning develops and markets proprietary science-based software products that help accelerate learning, especially learning to read. The company offers a line of training programs and skill building programs with an emphasis on developing reading skills.

Training Programs: 1) Fast ForWord® was Scientific Learning Corp.'s first product. It is a patented Internet and CD-ROM based training program for young children to improve language and reading skills. 2) 4wd was developed as a result of the success of Fast ForWord®. Both Fast ForWord® and 4wd target a similar stimulus set to improve language and reading skills, but 4wd utilizes more advanced technology and interactive tools to engage a more mature audience of adolescents and adults. 3) Step4Word, a sequel to Fast ForWord® and 4wd, uses interactive exercises to cross-train the brain on a number of skills to rapidly improve listening, thinking, and reading skills.

Skill Building Products: 1) Away We Go! is a skill building game and assessment tool developed by leaders in brain research to improve the critical early learning skills for reading success. 2) Away We Go! Bookshelf is an award winning, multi-media reading kit of original storybooks and stories on CD that offers students a fun early reading adventure. 3) Reading Edge was developed by reading experts from Harvard, Stanford and Johns Hopkins to measure the language and early reading skills that are necessary for success. It is available in educator version and home version.

In addition, there are multiple additional applications for the company's patented, proprietary technology in the areas of human performance and learning.

The company recently launched BrainConnection.com, with the mission to make it the premier site on the Internet for credible, interesting and easily understandable information about how the brain works and how students learn. There is growing popular interest in brain research and its implications for learning and performance at all ages particularly among educators.

For BrainConnection.com, the company will develop and purchase content, as well as partner with relevant players to develop the intellectual content on the site. This includes content from the producers of National Public Radio's The Infinite Mind, Reuters Health, and original articles from noted brain researchers and scientists. The company will also develop online assessment tests and professional development for teachers, and sell a range of science-based learning products through e-commerce engine, including its own proprietary software.

Given its foundation in neuroscience, we believe Scientific Learning is well-positioned to use the Internet to create niche communities around a shared interest, capturing an audience that is highly-focused and, hence, has strong likelihood of a high rate of conversion and a high repeat visit rate.

Founded: 1996

Headquartered: Berkeley, California

Public/Private: Public (Nasdaq: SCIL)

URL: scientificlearning.com / brainconnection.com

Claim to Fame: Research based products based on results. The company holds numerous patents covering a wide range of training methodologies and regimens related to learning and brain plasticity.

Key Investors: E.M. Warburg, Pincus & Co., Lazard Capital Partners, and HLM Management Company

Key Partners: Lichtenstein Creative Media, creators of NPR's "The Infinite Mind," Reuter's Health, Nidus Information Services

Key Customers: Public schools

1999 Revenues: $10.3 M

2000E Revenues: $26.1 M

Market Value: $169 M (5/15/00)

Revenue Components:

Content:	X
Commerce:	X
Advertising:	X
Service:	X
Other:	

Network Effect: No

Hub/Portal Strategy: No

Metrics to look for:
Number of users/students
Number of clients

wwwrrr.com

wwwrrr (pronounced 'whir') stands for World Wide Web reading, 'riting, 'rithmatic. Based in Minneapolis, Minnesota, wwwrrr is an Internet site for K-12 families and schools, and acts as a communications link between schools and homes. The company provides an interactive learning destination on the Internet for parents, teachers and students, and offers a wide variety of innovative products including the wwwrrr@myschool communications platform which provides communications between parents and their children's teachers.

Additionally, wwwrrr offers training for teachers and parents; and learning products for children. The company provides original online learning and training products; that enable teachers, parents and students to use technology to more effectively support student learning. Additionally, the site offers topical editorial content; and consumer goods and services that are utilized on a daily basis, and can assist in organizing fundraising partnerships that benefit schools.

Founded: 1999	**1999E Revenues:** NA
Headquartered: Minneapolis, MN	**2000E Revenues:** NA
Public/Private: Private	**Revenue Components:**
URL: wwwrrr.com	**Content Sales:** X
Claim to Fame:	**Commerce:** X
	Advertising:
	Service :
Coolest Feature on the Web: daily quiz question	**Other:** X
	Hub/Portal Strategy: Yes
Investors: North American Funds of Chicago	**Network Effect:** Yes

20. e-Commerce

Like other markets, we believe the potential for e-commerce in education is tremendous. We estimate that business-to-business commerce in the K-12 education market tops $70 billion in purchased goods and services. Two-thirds of this is products, such as textbooks, technology, office and school supplies, buses, and so forth. The remaining one-third is services such as janitorial, food service and transportation.

23% of School Budgets Directly Spent on Purchased Goods & Services
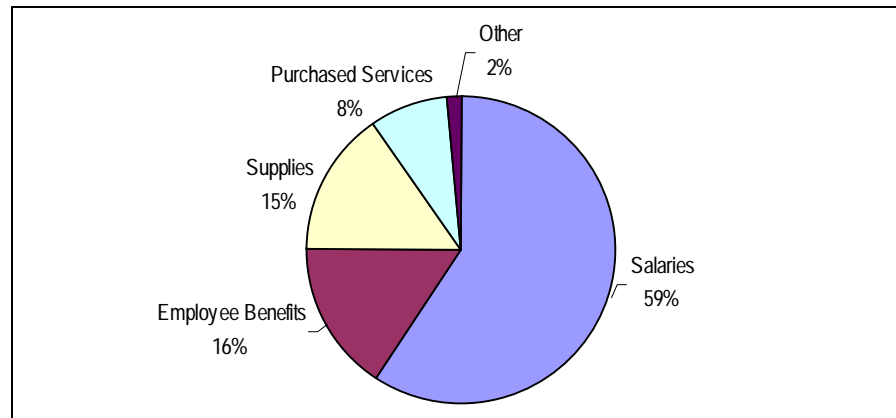
Source: National Center for Education Statistics. Reflects "current" expenditures only, e.g.. excludes capital outlay and interest on school debt.

We estimate that business-to-business commerce in the K-12 education market tops $70 billion in purchased goods and services.

This $70 billion likely understates the market size in that it excludes opportunities for commerce in what comprises the largest component of school current expenditures – salaries and benefits. Clearly there are private market opportunities for training, recruiting, and benefits administration in schools. Moreover, school capital expenditures also lend themselves to e-commerce opportunities.

Consumer-oriented K-12 commerce, at $8 billion, while small by comparison to school e-commerce, is a significant market in an absolute sense. This also includes a mix of products and services, such as toys, games, interactive products, tutoring and test preparation services.

Like our other e-education categories, e-commerce providers are focusing on either the business or consumer market, or are seeking to straddle both. Epylon.com, for example, is exclusively addressing the e-commerce opportunity in the business-to-business category. Companies such as ZapMe! and e-Chalk also intend to capture a portion of school purchases, with plans to leverage their positions as technology providers to schools into e-commerce revenue streams.

Education hubs too, are seeking to monetize their relationships with parents, teachers or children into e-commerce revenues. Many of these portals have or will create store fronts which should serve as powerful distribution channels for e-commerce of education products. Classroom Connect and Lightspan have online retailing capabilities through partnerships with other providers.

"Offline" school supply companies have been leaders in the transition to e-commerce in schools to date. School Specialty and J.L. Hammett, the two largest school suppliers in the U.S. have been the most aggressive about providing online ordering options to schools

"Born on the web" educational e-commerce company SmarterKids.com relies on J.L. Hammett for all its fulfillment, but, in keeping with its web roots, has aggressively sought partnerships. SmarterKids provides the online store for Lightspan.com, for example, in a co-branded initiative.

Partnerships have been important for both online and offline school suppliers, as shown in the following table.

E-Commerce Partnerships

E-Commerce Provider	Content Partner
SmarterKids.com	Homeroom.com (Princeton Review)
	Lightspan.com
	National Computer Systems
School Specialty	Scientific Learning
	ZapMe!
	Games2Learn
J.L. Hammett	Scientific Learning

Source: Merrill Lynch Global Growth Group

In a continuation of the idea that the Internet makes it possible to re-think the delivery of education, we see e-commerce taking on a much stronger relationship to educational content and objectives. The Internet's ability to electronically evaluate a student's abilities and then make specific recommendations for products that can enhance his or her skills is, in our view, a tremendous opportunity.

The Internet's ability to electronically evaluate a student's abilities and then make specific recommendations for products that can enhance his or her skills is, in our view, a tremendous opportunity.

SmarterKids.com was really the first to take its services beyond a simple retailing capability by offering a very simple diagnostic of a child's learning style. It then highlights for parents those toys that would appeal to that child's particular learning method. A more sophisticated example is its partnership with NCS. This jointly sponsored web-site, "WeHelpKids.com," evaluates a student's scores on standardized tests, identifies areas for improvement and recommends specific products to parents using the site. We also expect Scientific Learning's BrainConnection.com to use online assessments, with a possible link to specific products addressing individual needs as identified by the tests.

The e-commerce link for teachers is also an enhanced one. Teachers searching the web for ideas tied to specific lesson plans could, for example, get prompts for products that would enhance instruction of that particular lesson. Teachers, who are typically given a fixed budget from their principal and spend another $200 of their own money for classroom supplies, represent a significant market.

Improving Management of School Resources Through E-Commerce

The administrative aspects of education are also ripe for improvement through technology. The ordering process for school products and services is usually slow and paper-based, with triplicate forms making their way from teacher to principal to school district purchasing agent. The ability to automate purchasing of district products and services could mean significant improvement in the administration of district resources.

The administrative aspects of education are also ripe for improvement through technology.

Epylon.com and Simplexis.com, recognizing the power of a vertical buying portal for education, are aggressively developing an education marketplace where schools and commercial providers can negotiate for products and services and administer those relationships online.

Teachers can benefit too, receiving requested resources at the speed of business, rather than the speed of bureaucracy. The typical delay between the time a teacher fills out an order with School Specialty, and the time that order is placed with the company (once it has moved through all the necessary administrative steps), is three weeks. By the time a teacher gets her materials, a full month has passed. As a result, teachers have to plan way ahead (reducing flexibility in how and when to teach certain subjects), do without certain supplemental materials in class, or purchase herself by spending her own money and time. None of these cases is ideal, and hence we see teachers being one of the beneficiaries of improving the process of procurement through the Internet.

Epylon.com- the marketplace for educational institutions

Epylon.com is creating an online market, a business-to-business e-commerce hub where education buyers meet companies selling products and services into the education market. The school procurement process, especially at the K-12 level, is generally low tech, heavily paper-based and people-intensive.

The online buying community envisioned by Epylon.com would enable schools to better utilize their resources. Not only would schools reduce the time necessary to manage their procurement, they could also benefit from access to a wider range of products and a greater supplier list than before. This should enable schools to find the products and services that best fit their needs, at the most competitive pricing.

Vendors benefit from access to a wider customer base and improved customer service. It could also reduce their order management and fulfillment costs, through its electronic quote and bid systems, better invoicing and payment monitoring and the potential for less seasonal inventory requirements. High-quality suppliers would also be highlighted by favorable customer reviews.

Epylon's five co-founders are experienced in the Internet, finance and education. Co-founder Kelly Blanton, for example, is former superintendent of Kern County Schools, where, as the local paper observed, he was "legendary for his ability to use corporate business practices to expand the services offered to local school districts by his office."

Founded: 1998	**Revenue Components:**
Headquartered: San Francisco, CA	**Content Sales:**
Public/Private: Private	**Commerce:** X
URL: epylon.com	**Advertising:**
Claim to Fame: B2B e-commerce company creating a vertical in the education market	**Service :** X
Investors: Intel, ITVentures	**Hub/Portal Strategy:** Yes
	Network Effect: Yes
Partners: To be announced	
	Competitors: Simplexis and potentially CommerceOne or VerticalNet
Coolest Feature: Site launch in April 2000	
	Metrics to look for: Number of Schools: 50 pilot districts Number of Partners

Simplexis.com – cutting procurement costs to the bones

Co-founded by former Secretary of Education, Lamar Alexander, Simplexis.com is a B2B marketplace for public institutions and their suppliers with an initial focus on public schools. It helps school business officials save money and time when they buy goods and services and offer related content and information for school business operations. Simplexis.com is an e-commerce hub for procurement of the best products and services at the lowest prices simply, and quickly.

Simplexis.com leverages the expertise of its management team and Board of Directors with a solid knowledge base of the public sector, business, e-business, supply chain management and most significantly, education. Some have served at the highest levels of government and played a leadership role in setting educational policies at the state and national levels. Others come from leadership positions in supply chain management with some of the world's most successful companies. Still others were school business officials who worked in the business of education for decades.

Simplexis.com provides school districts with an automated requisitioning process that incorporates all required approvals and audit requirements - reducing procurement costs, increasing service and reducing cycle times. It will enable cooperative purchasing among a large number of school districts across many local, county, and state boundaries - lowering procurement costs through volume discounts and provide suppliers access to a larger customer base and reduces – even eliminates – the paperwork

associated with contract negotiations, order fulfillment and delivery. Furthermore, Simplexis.com will ensure that all participating agencies comply with legal requirements set forth by local and state regulatory authorities.

Simplexis.com launched the pilot program in March 2000 in the Glendale, CA Unified School District. More than 100 school districts that spend an estimated $3 billion annually for goods and services have lined up to use Simplexis.com. More than a dozen public school districts across the county with annual purchases totaling roughly $400 million will join in the pilot program. Completely free to schools, the fully implemented Simplexis.com system will save participants an estimated 10-15 percent of their procurement budget while providing news, content and community for all involved in the business of education.

Through its alliance with application service provider Corio, Inc., Simplexis.com deployed a customized version of Commerce One's BuySite (tm), reducing time-to-market to a bare 40 days. Simplexis.com outsources all installation, setup and maintenance of Commerce One's hosted BuySite(tm) e-procurement application 6.0 to Corio. Corio's solution allows Simplexis.com to give customers a complete, custom e-procurement solution without any installation on customer premises.

Simplexis.com has secured $30 million in capital and operational support from Internet Capital Group (contributing $25 million) and Kaplan, WR Hambrecht & Company, Schoolhouse Partners and Commerce One.

Founded: February, 2000

Headquartered: San Francisco, CA

Public/Private: Private

URL: simplexis.com

Claim to Fame: Uses state of the art technology to "cut procurement costs to the bone"

Investors: Internet Capital Group (ICG), Kaplan, WR Hambrecht & Company, Schoolhouse Partners and Commerce One

Partners: Kaplan, Inc., Corio, Inc., Arius, in2action, e-rate

Revenue Components:

  Content Sales:

  Commerce: X

  Advertising:

  Service :   X

Hub/Portal Strategy: Yes

Network Effect: Yes

Competitors: Epylon.com and potentially CommerceOne or VerticalNet.

Metrics to look for:
Number of Schools: 100 school districts
Number of Partners

Merrill Lynch

Source: Merrill Lynch Global Growth Group

One of the more interesting areas is the evolving online tutoring industry, with a number of companies competing for a piece of this market.

Educational Services Online

Sales of educational services are slowly following sales of educational products online. One of the more interesting areas is the evolving online tutoring industry, with a number of companies competing for a piece of this market. In the corporate training market, companies such as DigitalThink and SmartForce have included online tutoring as a powerful (but free) complement to their content. In K-12, of course, the economics and dynamics are different, and it is primarily start-up companies that are seeking to fill this niche by targeting busy and concerned parents.

These companies use various technologies to capitalize on the Web's unique attributes. As technology and the market progresses, we expect that companies like these will be able to do find even smarter ways to leverage an individual tutor's time.

Tutoring and Homework Help On the Internet

Company	Approach
Tutor.com	Facilitates one-on-one tutoring by serving as a clearinghouse between tutors and interested students. Matched pairs meet offline.
TopTutor	Enables one-on-one tutoring online by matching interested teachers and students and providing the technology platform.
EdPoint	Enables one-on-one tutoring online by matching interested teachers and students and providing the technology platform, an interactive white board.. Helps tutors manage business aspects of online tutoring.
Tutornet.com	Subscribers get unlimited access to online tutors holding "office hours" in math, science and language. Tutoring is one-to-potentially many. No appointments required.

Source: Merrill Lynch Global Growth Group

Test preparation is another service we see migrating to the Internet. Until now, students prepared for high-stakes tests like the SAT, GRE or GMAT by taking an instructor-led class or alone, with a book or software program. We see the opportunity to combine these two instructional methods online, offering the best of both. We may see this model approaching the corporate training model, where self-directed study predominates, supplemented with online tutors and other services.

"Stand firm in your refusal to remain conscience during algebra. In real life, I assure you, there is no such thing as algebra."

– Fran Lebowitz

eSCORE.com – skills assessment for learning fun

eSCORE.com is the online unit of SCORE! Learning, Inc., which provides tutoring and academic enrichment to students in its after-school education centers. SCORE! Learning is wholly owned by Kaplan, Inc., which is a subsidiary of the Washington Post Co. SCORE currently has more than 100educational centers and serves over 40,000 kids. eSCORE.com, founded in 1999, complements and expands upon the services offered in the company's physical locations, creating an integrated "clicks and bricks" strategy.

eSCORE.com's central offerings are services to help parents of children newborn to age 18 understand a child's particular developmental and learning needs. These services include more than 300 online skills and abilities assessments, detailed feedback reports, one-to-one learning consultations with specialists, and topic-specific workshops. For school-age children, eSCORE.com offers diagnostic skills testing, determines areas for academic improvement and then recommends resources, products and services [both online and offline] to address those specific skill gaps. Many of the assessments are directly tied to state standards and are geared to help students build the skills evaluated on state proficiency tests.

eSCORE.com is also developing parent communities around learning issues. Through several collaborations, eSCORE.com offers a suite of tools to serve parents of children with special needs and learning disabilities as well as gifted and talented students. These collaborations with such organizations as LD Online and the National Research Center on the Gifted and Talented offer parents information to identify and address the learning issues relevant to them.

SCORE! recently announced plans to form a strategic alliance with Pearson plc, the world's largest educational publisher, in which the two companies will co-develop technology to provide customized learning experiences for children. eSCORE.com will use the technology as the foundation for its launch later this year of online tutoring services, in which children will work synchronously with a live, online academic coach on math, reading, spelling and other skills. Pearson will give eSCORE.com premium placement on the pre-K through 12 section of its education network, a portal scheduled to launch later this year on the Web and on AOL. The network will be AOL's preferred educational content provider. Pearson also plans to invest at least $20 million in SCORE!.

The company has expanded into the pre-K market with purchase of ParentPartners.com. The purchase of ParentPartners enables eSCORE.com and its customers to access ParentPartners' internationally recognized panel of pre-K child development experts from organizations including Harvard Project Zero and the Brazelton Institute. The acquisition helps eScore.com meet the needs of parents of very young children, providing them with information and resources to understand their children's developmental patterns and enrich their learning and growth.

To round out its offerings, eScore.com also provides a range of other services including information on state education standards, state test resources, skill-building activities, and an Action Planner, an interactive portfolio to track and record recommended products, activities and services. Its e-commerce arm offers an expansive online catalog of educational products: 25,000 book titles, 5,000 music titles, 5,000 video titles, 7,000 toy products, and over 1,000 software products. In addition, the company offers parents a home-delivered subscription to Weekly Reader's 15 publications. By providing products and resources tailored to a specific child's needs, eSCORE.com seeks to solidify these parent relationships and to be their source for all aspects of their children's education.

Founded: 1999

Headquartered: Alameda, CA

Public/Private: subsidiary of Kaplan/Washington Post Co. (NYSE: WPO)

URL: eSCORE.com.

Claim to Fame: First educational services site for parents, with plans to launch children's services such as online tutoring in the near future.

Coolest Feature on the Website: Customization of content, advice and services based on the age, grade, strengths and needs of each child.

Key Investors: Kaplan/The Washington Post Company, Pearson plc (pending final agreement)

Key Partners: Weekly Reader Corp., Dragonfly Toys, LD OnLine, Harvard Project Zero, the Brazelton Institute, Imagine the Challenge, Educators' Resource, Baker & Taylor, National Research Center on the Gifted and Talented (UCONN), Center for Talented Development (Northwestern), Instructional Fair Group, Virtual Learning Technologies, Developmental Skills Institute

1999E Revenues: $22 million (SCORE! Learning total)

2000E Revenues: $50 million (SCORE! Learning total)

Revenue Components:

  Content:

  Commerce: X

  Advertising:

  Service: X

  Other:

Network Effect: No

Hub/Portal Strategy: No

Metrics to look for:
Number of registered students/families

21. Infrastructure

Infrastructure development has been one of the most dynamic areas of growth in schools in the last two years. Given the early stage of Internet integration in K-12 education, we expect that sales of enabling hardware, software and infrastructure services will continue to gather steam in the next few years.

In the 1998-99 school year, K-12 schools spent $6.7 billion on technology. Most of this was on high-speed instructional machines that are multimedia and Internet capable, as well as school networking equipment and other infrastructure components that, broadly speaking, enable schools to get online. Hardware and the necessary service and support associated with it comprise a significant percentage of this total.

Administrative software, Internet access and teacher training also capture a considerable part of this $6.7 billion. Instructional content, discussed in an earlier section, captures the remaining portion of school technology expenditures. We estimate that, last year, almost none of the funds spent on administrative software and teacher training was Internet related, although we anticipate this will rapidly change.

K-12 E*Infrastructure Statistics

Size of Online Market
$1 billion

Market Growth Rate
20%

Key Players
Chancery Software
ZapMe!
schoolbell.com
NetSchools
NCS
ProjectACHIEVE
HighWired.com
High Fusion

Source: Merrill Lynch

Access through Hardware Solutions

To integrate the Internet into schools and classrooms, kids and adults first need access—a way to get online. The K-12 education market has unique attributes that create both opportunities for hardware providers.

Infrastructure

ACTV
Blackboard.com
Chancery
e-chalk
eCollege.com
Edutest
Edventions
ETS
Filtering Software from N2H2, Learning Company, School Specialty, etc.
Gemstar (Rocketbook)
HighWired.com
iMind
Into Networks
Kaplan (e-score)
LearningStation.com
MC2 Learning Systems
NetSchools
NSchool
PowerSchools
Princeton Review (Homeroom.com)
Testmaster
ThinkWave
WebTV
ZapMe!

Source: Merrill Lynch Global Growth Group

Unique Characteristics of School Technology Use

Challenge	Opportunity
Less Money to Buy Technology – Nearly half of corporate spending on durable equipment is for computers. Just 2% of school spending overall is for technology.	Help Schools Redefine Priorities – Only 50% of school budgets spent on classroom instruction Help Schools Find Financial Resources – grantwriting assistance The power of Free
Less Money to Maintain Technology	Central administration of computers
Still a Missionary Sell	Provide teacher support. Provide documentation on technology success.
Child and Teen Users	"Fisher Price" Computers Heavy-duty, easy to use.
The Classroom Setting	Big Screen, sharing files, teacher information systems
Constraints of Physical Plant	Wireless

Source: Merrill Lynch Global Growth Group

ZapMe! and NetSchools have both developed hardware solutions for K-12 schools that address these challenges and capture these opportunities. ZapMe! resolves the financial aspects of the access conundrum, providing a lab of high-speed computers to schools with high-speed satellite Internet access at no cost to schools. Schools agree, in exchange, to let ZapMe! post advertising on its computers and access the computer labs after hours for tutoring, teacher training and student testing.

Technology is most effective if every child has access; this is the foundation of the NetSchools solution. NetSchools gives every student a rugged laptop computer designed for the school market. Each is connected to the school server with a wireless remote. These can both be used in class or at home. In contrast to ZapMe!, this is a classroom-based solution that enables complete technology immersion for schools. Hardware companies Apple, Dell, Toshiba, Gateway, Intel, Cisco and

Expanding parental involvement and learning time are two significant ways in which the Internet can improve educational performance.

others sell millions in computers and networking equipment to schools. For the most part, however, this hardware is not tailored specifically for the education market, nor are their business models. Hence, we will not spend time in this report discussing the status of these various hardware providers in schools. We do note, however, that these companies have been increasingly interested in forming partnerships with and/or investing in other companies in the e-learning sector. Their strong brands, deep pockets and interests in the education markets clearly make them forces to watch in K-12 technology. Another group that may find themselves in the same position shortly – Internet Access Providers. AOL, Earthlink and their broadband counterparts will, in our view, show increased focus on K-12 education in the next few years.

Favorite Bookmarks of Don Tapscott,

President of the New Paradigm Learning Corporation and author of *Growing Up Digital*

www.harmony-central.com – a great resource for musicians
www.audiofind.com – cool mp3 file search site
www.growingupdigital.com – explores the impact of technology on youth
www.britannica.com – now free, a co-navigator to the world of digital knowledge
www.refdesk.com – need facts fast? Go here, a great home page.

We expect that other access options will increase access to e-learning. These may include WebTV or videogame consoles, such as the Sega Dreamcast system. Nearly half of young online consumers own or play games on Nintendo, Sega and Sony game consoles. Last fall, the Dreamcast system debuted with a built-in 56 Kbps modem, creating an Internet access device. These low-cost options will most likely find their broadest acceptance in homes instead of schools. Even so, they provide a means for parents and children to continue to access educational content and interact with teachers and peers outside of traditional classtime hours. Expanding parental involvement and learning time are two significant ways in which the Internet can improve educational performance.

Schools are increasingly being held accountable for student academic achievements, a trend we expect will only grow stronger in the next decade.

Administrative Software Tools

We predict that web-based software for schools will find a fertile market. Schools are increasingly being held accountable for student academic achievements, a trend we expect will only grow stronger in the next decade. Pressured by requirements to teach to academic standards, demonstrate student achievement (particularly on standardized state and national tests) and show benefits from technology expenditures, schools will need software to manage and track information as well as enable teachers to focus more of their attention on teaching and less on administration.

Administrative software for schools falls into two categories: programs aimed at improving school operations and programs geared toward helping teachers manage their classrooms. For the most part, school administrative software must be custom-developed for the education market. Hence, we have seen many new companies spring up to address the new opportunity for Web-based solutions, and have seen little participation by traditional ERP providers such as PeopleSoft and SAP.

School Information That Can Be Captured By Enterprise Software

Student Information Systems	Instruction Management Systems
Attendance	Curriculum
Grades	Assessment
Test Scores	Standardized Tests
Health	Student Work
Demographics	Standards
Schedules	Lesson Plans
Courses	Lesson Materials
Discipline	
Guidance	
SpecialEd	
Enrollment	

Source: Merrill Lynch Global Growth Group

School management information systems, or "SAP for schools," automate and manage school backoffice and some classroom management functions.

School management information systems, or "SAP for schools," automate and manage school backoffice and some classroom management functions. Other Internet software solutions perform such diverse functions as helping teachers organize their online class projects or involving parents in their children's education.

School Management Software

Software Application	Example	Online Software Providers
Manage school and student information	Student Records, School Finances	ProjectACHIEVE; ThinkWave; PowerSchool
Manage teacher resources and classroom instruction	Lesson Plans, Student Performance Data; Alignment to State Standards	Advantage Learning; MC2 Learning Systems; MediaSeek; NCS, ProjectACHIEVE
Manage school activities	Student Newspapers, sports schedules	HighWired.com
Manage school technology	Internet security and filtering software	N2H2; The Learning Company
Integrate parents	Grades and homework online; School websites	ProjectACHIEVE; ThinkWave; NCS; PowerSchool; FamilyEducationCompany

Source: Merrill Lynch Global Growth Group

We see particular potential in those solutions that improve the management of the learning process.

School Enterprise Software

Edventions
Chancery Software
i-mind
National Computer Systems
nSchool
PowerSchool
Project ACHIEVE
SchoolNet
Thinkwave

Source: Merrill Lynch Global Growth Group

■ **School Enterprise Management Software**

We see particular potential in those solutions that improve the management of the learning process. By collecting and managing information on what children are learning, how that relates to district or state standards, teacher ability or even school finances, these software applications have the potential to professionalize teaching and school administration, as well as significantly increase parental involvement in their children's education.

K-12 Online Enterprise Solution Providers

	Comprehensive daily task-management tools	Standards-based curriculum tools	Email/community chat application	Educational resources/tools	Parental access to student information	Email/community chat	Educational resources/tools	Online grades and performance assessment	Online homework and testing capabilities	Online Tutor help	Online educational resources and tools	Email/community chat	Comprehensive teacher, student and parent information tracking	School-wide reporting capabilities	Customizable reporting capabilities	Email/community chat	ASP Model	Intranet	Intranet with Internet upload
Chancery Software	A		A	A	O	O	O	X			X	X		Y	Y				Z
Edventions	A	A	A	A	O	O	O	X	X	X	X	X	Y	Y					Z
Project ACHIEVE	A	A	A		O	O		X					Y	Y	Y		Z		
NCS	A	A	A	A	O	O	O						Y	Y	Y				Z
PowerSchool					O	O	O	X			X	X		Y		Y	Z		
iMind		A	A	A			O			X	X						Z		
nschool			A	A	O	O	O				X	X	Y				Z		
ThinkWave			A		O	O		X			X						Z		

A Teacher Functionality   **O** Parent Functionality   **X** Student Functionality   **Y** Administrator Functionality   **Z** Product Delivery

Source: Merrill Lynch Global Growth Group

Just as Management Information Systems have become essential to the efficient functioning of successful businesses, Learning Information Systems have the potential to become permanent fixtures in schools.

Computerized school management systems have yet to fully replace the old paper-and-pencil based system for keeping student attendance and grades, ordering and managing school supplies or maintaining and updating lesson materials, but we believe this transition will happen quickly. Just as Management Information Systems have become essential to the efficient functioning of successful businesses, Learning Information Systems have the potential to become permanent fixtures in schools, providing administrators and teachers with tools to improve student learning.

Moreover, these systems have the potential to personalize instruction as never before. The diagnostic capabilities of computers, resulting from their ability to track and evaluate large amounts of data, means that teachers can pinpoint instruction to the needs of each individual student. Previously, teachers needed to spend time on the diagnostic aspects of instruction before they could focus on specific remediation. The computer frees the teacher from these tasks, enabling her to spend her one-on-one time with children to meet their specific needs.

With these systems, we believe "educational productivity" can increase substantially, just as the productivity of corporate America has seen substantive gains with technology.

NCS and Project ACHIEVE

American schools are entering a new era of accountability. Powerful reform initiatives underway bring with them the need for better management of the school as an enterprise. Several companies have entered the market to provide information systems to schools that allow them to track various aspects of school operations and the learning process.

The two most comprehensive of these systems are National Computer Systems (NCS) and web upstart Project ACHIEVE. Both provide schools with information management solutions designed to enhance the learning process and improve the potential for student achievement. These systems are also designed to report critical student achievement and school performance information for school and district administrators, as well as track student and school progress against state standards.

NCS is currently the leader in this market, with over 35,000 schools using at least one of its several management modules. However, only two components (ParentConnect and Educational Structures) are web-based. Most of the current software is client-server based. Moreover, 25% of schools still use at least one DOS-based product. How will NCS fare as these schools become wired? Clearly its installed base is a tremendous asset and many of these schools have historical databases that can be readily uplinked to new NCS software. The software is proven and robust. At the same time, the Project ACHIEVE concept of a from-the-ground-up, fully web-based and easy to use system has tremendous appeal. NCS will have to continue to be as nimble as it has to counter the growing number of web-based school management information systems.

NCS

Background: CEO Russ Gullotti has parlayed this company's traditional expertise in large scale data collection and test processing into a leading position in education software and services. Through internal development and acquisition, NCS has put together the leading suit of school enterprise software programs. At this point, the software is driven off a local client server, with a web interface for parents.

Products:
SASI: Student information system tracks scheduling, attendance, grading discipline.
ABACUS: Instructional management software tracks curriculum development, student academic programs, and skills-based assessments.
ParentConnect: Web-based interface with SASI.
Mentor: Customized teacher tools and training.
Educational Structures: Teacher lesson plans delivered daily by Internet
NovaNet: Intranet-delivered curriculum.
CIMS: Accounting, Payroll, Personnel, Inventory
The current versions of SASI, ABACUS and ParentConnect are fully integrated..

Financial Backing: Publicly traded. Stock has appreciated at a CAGR of 36% over the past five years since CEO Russ Gullotti joined the company.

Key Partnerships: University of Cambridge

Metrics:
Schools Installed: 35,000 schools have at least one NCS software product.

Project ACHIEVE

Background: Founded in 1998 by charter school principal and Harvard MBA, Stacey Boyd, Project ACHIEVE was designed to capture information that she, as a principal, found important and useful. Having concluded that no alternative system was sufficient, she created a sophisticated yet easy-to-use Web-based management system.

Products:
ACHIEVE: Single comprehensive system for student information and instructional management. Tracks attendance, schedules, grades, discipline, and student mastery of state and district standards. Combines functionality of NCS' SASI, ABACUS and ParentDirect, but adds ability to track parent involvement, capture all teacher created lesson plans and whether teachers have covered state curriculum standards.

Financial Backing: Jostens, Inc., Sprout Group, KECALP

Key Partnerships: Jostens, Inc. is providing initial sales force, a select group of 10.

Metrics:
Schools Installed: 50

Source: Merrill Lynch and company documents

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Chancery Software LTD

Chancery Software is in the business of helping educators manage schools effectively and efficiently. The company develops and markets student information systems and library management systems for the Windows® and Macintosh® environments. Information on close to five million students is managed by 350,000 educators and administrators using our Win School® and Mac School® student information systems, Library Pro® library management systems, District Data Integrator and Open District systems. Chancery Software makes something for everybody at school: teachers, counselors, principals, librarians, administrators, district office personnel and, most important, students.

Chancery products will be help students register, track their attendance, report grades, monitor his or her progress and even integrate the Internet into their day-to-day studies.

Founded in 1983, Chancery Software started with the premise that schools would benefit from the efficiency and flexibility of an easy-to-use student record keeping system. The result was Mac School, a site-based student Information System (SIS) which offered schools a welcome alternative to large, district-oriented mini and mainframe-based systems. Developed for Apple Macintosh, the user-friendly graphical interface and intuitive design represented breakthrough technology for customers.

Over the years Chancery's product offerings have grown to meet the evolving needs of education. The company has added eClass Grades and eClass Attendance, the first of several new cross-platform modules for Mac School and Win School, to meet the on-line needs of teachers.

In 1997, the company launched Library Pro 2.0, an innovative new information system for school media centers and released District Data Integrator, a decision support systems for school districts. In the spring of 1998, Open District was launched-the first district information system to harness the power of open systems, network computing and relational database management.

Chancery Software recently launched K12Planet, a school-to-home communication gateway for parents to access important information about their children and their school through the Internet. K12Planet is a gateway that gives parents access to everything from their children's daily grade and attendance information to homework help and career and college planning resources. Teachers use K12Planet to communicate with parents about their students' day-to-day performance and to suggest resources to help students succeed in school. Administrators use K12Planet to share information with parents about important issues in the school community.

Founded: 1983

Headquartered: Vancouver, Canada

Public/Private: Private

URL: chancery.com

Claim to Fame: best-selling Windows and Macintosh based student information systems for K-12 schools and districts in North America

Investors: Arcadia Partners, Sylvan Learning Systems, Quad Capital Partners, The Gale Group (a subsidiary of Thomson), Ventures West, Growth Works Capital

1999E Revenues: NA

2000E Revenues: NA

Revenue Components:

  Content Sales: X

  Commerce: X

  Advertising:

  Service :

  Other: X

Hub/Portal Strategy: Yes

Network Effect: Yes

Metrics to look for:
School, parent, student and library participation

Edventions, Inc. (Starship School)

Starship School is a developer of software tools that enable elementary schools to operate online communities. The company is a education technology firm that has developed an online communications and learning system for K-12 school use. The system provides Internet and Intranet communication tools for each school to link parents, students, teachers and administrators into a single community. Parents can use the communication network, E-mail, chat, use bulletin boards, to more easily monitor their children's progress and talk directly with teachers and administrators. In addition, they can view the published student progress reports for their children.

Starship School puts the Internet at the disposal of the entire community safely and efficiently to save time and frustration. Safety is assured because student access to the Internet is limited to a library of thousands of Internet sites. Schools and teachers have complete control over the sites students visit. Starship School also offers a filtering capability that can be used to allow certain students to search beyond Starship School, with adult approval. The result is that parents know exactly what children are downloading – approved educational and community websites.

The Starship School library of sites cuts the Internet down to manageable size. The company also reduces in-school Internet waiting time because it's physically connected to school computers, which means quick answers to questions. This unique tool saves teachers huge chunks of time and frees them up to do what they do best - educate children. With just 15 minutes of training, Starship Creator lets educators with no prior computer experience write professional-looking lessons and reports. The system leads users through lesson writing with step-by-step instructions. This translates into time-savings and a portable portfolio – teachers can reuse the same material each year and easily add new content.

Founded: 1999	**1999E Revenues:** NA
Headquartered: Skokie, IL	**2000E Revenues:** NA
Public/Private: Private	**Revenue Components:**
URL: edventions.com, starshipschool.com	**Content Sales:** X
	Commerce: X
	Advertising:
	Service :
	Other: X
	Hub/Portal Strategy: Yes
Investors: River Cities Capital Fund, M Group, individual investors	**Network Effect:** Yes
	Metrics to look for:
	Number of users

Online Assessment and Testing

We believe the Internet will reshape the role of testing and assessment in education. Indeed, in the future, it may be that assessment is hardly separable from content. In its most connected form, ongoing online assessment would determine what content a student receives and when.

Today, when we talk about assessment, the biggest debate is over whether those tests are delivered online, via secure Intranet or in a paper-and-pencil format. But moving tests into a digital format is only the very first step in effectively leveraging the potential of the Internet in testing. Today, these tests are essentially the same as their paper-and-pencil ancestors.

"If you prove that technology can raise test scores, then the only issue is, why doesn't every kid have a computer?"

– Princeton Review President and CEO, John Katzman

Looking forward, we expect that the look of tests will change, incorporating audio and visual components, computer simulations and a variety of test response possibilities (e.g., essay or oral exam, in addition to the traditional multiple choice format).

As content and exams become increasingly digital, we anticipate that the frequency of testing increases significantly, moving from one "high-stakes" exam at the end of each year to an ongoing assessment of performance as a student moves through a class or the course material. Once we get to this stage, decisions like whether a student has mastered a course or is qualified for graduation, or the effectiveness of a specific school or teacher, likely will no longer be based on one examination given at a single point in time. Rather, these judgments will incorporate information from a series of measurements. Ultimately, the need for stand-alone testing centers could disappear, as the concept of testing as a one-time snapshot of performance is overcome by the view that it become an embedded part of the learning process. We are in the very early stages of this transformation, with the conversion of paper-and-pencil tests to a computerized format being the first step. This is only the first generation of computerized tests, according to ETS' Policy Information Service, with the third generation being a full reinvention of our concept of high-stakes testing.

**Favorite Bookmarks of Jonathan Carson,
Chairman and CEO, FamilyEducation Network**

www.familyeducation.com
www.aol.com
www.infoplease.com
www.funbrain.com
www.schoolcash.com
www.teachervision.com

Merrill Lynch

Transformation of Testing in the Internet World: Three Generations of Large-Scale Educational Assessment

Generation	Key Characteristics
First-Generation Computer-Based Testing (Infrastructure Building)	1. Primarily serve institutional needs 2. Measure traditional skills and use test designs and item formats closely resembling paper-based tests, with the exception that the tests are given adaptively 3. Administered in dedicated test centers as a "one-time" measurement 4. Take limited advantage of technology
Next Generation Electronic Tests (Qualitative Change)	1. Primarily serve institutional needs 2. Use new item format (including multimedia and constructed response), automatic item generation, automatic scoring and electronic networks to make performance assessment an integral program component, measure some new constructs 3. Administered in dedicated test centers as "one time" measurements 4. Allow customers to interact with testing companies entirely electronically
Generation "R" Tests (Reinvention)	1. Serve both institutional and individual purposes. 2. Integrated with instruction via electronic tools so that performance is sampled repeated over time, designed according to cognitive principals 3. Use complex simulations, including virtual reality, that model real environments and allow more natural interaction with computers 4. Administered at a distance 5. Assess new skills

Source: ETS Policy Information Center   "Speculations on the Future of Large-Scale Educational Testing" by Randy Elliot Bennett. Reprinted with Permission.

Highwired.com – the online community for high schools

Highwired is the largest community of high schools on the web, encompassing over 8,500 schools in all 50 states and 61 countries.

Highwired got its start in 1998 by helping schools publish their student newspapers online. The appeal of this effort was obvious. Not only could student work reach a broader audience by being published online, students could interact and share stories with others from schools around the country, and even the globe. Student newspapers are able to capitalize on the Internet's network effect, and accordingly, the company's reach has expanded significantly. It took HighWired.com 11 months to sign up the first 1,000 high schools. The second 1,000 high schools took four months. The most recent 1,000-school acquisition was accomplished in just 50 hours. In addition to student readers, parents, grandparents, friends and community members are able to access the newspapers, creating an additional audience for Highwired.

Highwired's easy-to-use web publishing service empowers students (and their instructors) with online publishing capabilities without the need to know HTML, receive training or read manuals. The service is free to schools, with corporate sponsors and advertisers underwriting the costs of providing the service. Schools can also sell banner ads on an individual basis and keep the proceeds, very similar to the efforts of students on their offline, advertising-sponsored newspapers.

Highwired has now expanded its offer of free web publishing tools and free email to five major areas of high school life: classrooms, guidance offices, sports teams, student activities and, of course, newspapers. These new areas not only leverage existing school relationships, they provide additional traffic and the associated ability for the company to monetize it through e-commerce, advertising and other services.

Founded: 1998

Headquartered: Watertown, MA

Public/Private: Private

URL: highwired.com

Claim to Fame: Largest high school community website

Coolest Feature: Free web publishing tools

Investors: Charles River Ventures, North Bridge Venture Partners

Partners: Lycos, FamilyEducation Network, State of Maryland, PBS, AOL@School, Boston.com and Embark.com

Revenue Components:

  Content Sales:

  Commerce:

  Advertising: X

  Service:

  Other:

Hub/Portal Strategy: Yes

Network Effect: Yes

Metrics to look for:
Number of Schools
Number of Students
Number of Visitors

Test University, Inc. (TestU)

Test University, Inc. (TestU) provides online test preparation service over the Internet to help students achieve superior results on any standardized examination. The company was founded by a team of seasoned entrepreneurs, educators, marketers, technologists and venture capitalists to exploit the demand for online test preparation services. TestU's courses are designed to be visually rich, customized, performance-driven, dynamic and humorous with a spirit in harmony with its target market. Its potential marketplace spans every age group, background and lifestyle. Its first course – targeted at SAT test prep – is in beta-test phase now. Its target market segments going forward include:

a. K-12, State Exit Exams (Regents in NY, state-specific in 20 other states), Elementary Proficiency Exam (state-specific promotional exams), PSAT/National Merit Scholarship, Skill Builders for kids

b. Undergraduate: SAT, ACT, SAT II, Advanced Placement

c. Graduate: GRE, MCAT, GMAT, LSAT

d. Professional: CPA, Praxis I & II (Teachers'), CFA, Series 6, Series 7, PE, Real Estate Bar Exam, Dental Administration, NTE, Optometry, Insurance Agent Exam

e. Other: TOEFL, TOEIC, GED, Citizenship, Driver's License

TestU is an Internet-based virtual university that is accessible anytime, anywhere, on-demand. Features include:

i) SMART Curriculum^{SM} – Customized curriculum that provide adaptive, personal guidance for each student

ii) Dynamic Setting – Animated, multimedia environment that is entertaining, dynamic, intuitive, engaging and easy to manipulate, control, and interact with

ii) A Virtual Living Campus (in development) – Chat rooms, e-mail tutor, cafe, library, gym, game room, bookstore, registrar, screening room, and more

The intuitive intelligence embedded in the TestU's SMART System (Self-Modifying Ability-Reactive Training System) customizes the lesson plan for each student based on his/her abilities, aptitude and performance in real time. Each student's experience with the TestU site will be unique, as the curriculum adjusts itself:

i) based on the amount of time available to the student before the test date;

ii) from session to session, based on the results of diagnostic and practice tests that identifies specific areas of weakness and/or strengths; and

iii) from key click to key click, based on the student's answers to questions or desire to navigate through the site.

The TestU customized program is designed to enable the student to achieve the highest possible score within the amount of prep time available. Students will be exposed to "MicroCourses" that shore up their weaknesses in basic skill areas, as well as "Practorials" that teach innovative problem-solving strategies, designed by some of the world's most noted test experts to achieve test-taking mastery. In addition, they will hone their skills in labs, sectional practice exams and full exams.

Since its formal inception in July 1999, TestU has established relationships with leading examination authors, publishers and academic leaders, forming its Academic Council – an unparalleled organization in this space – that advises the company on product development and contributes critical knowledge to the policy and learning model development at TestU.

Founded: July 1999

Headquartered: New York, NY

Public/Private: Private

URL: www.testu.com

Claim to Fame: TestU claims to be the first online test preparation Company to offer customized study programs

Coolest Feature on the Website: SMART Curriculum that self-modifies to adapt to students' abilities, Virtual Mentor to guide students' through courses, and Campus Life where students can R&R

Key Investors: Selway Partners, CIP Capital/ SCP Equity Investment Partners, Dr. Samuel Waksal, Greenwich Street Capital/Tower Hill Capital Group

Key Partners: Barron's, Research & Education Association (REA), National High School Association, California League of High Schools, National Urban League, Institute for K-12 Leadership at University of Washington

1999A Revenues: NA

2000E Revenues: NA

2001E Revenues: NA

Revenue Components:

  Content: X

  Commerce: X

  Advertising: X

  Service:

  Other:

Network Effect: Yes

Hub/Portal Strategy: Yes

Key Metrics:
Number of Registered Students and Licensed Schools
Student Course Completion Rate
Student Testing Success Rate

schoolbell.com – making the education connection

schoolbell.com provides an Internet based solution to improve operational efficiencies, expand access, decrease costs and provide increased value across the entire school community. By utilizing schoolbell.com's online information management solution, schools obtain many benefits, including:

1) allows a school to dramatically reduce information management costs;

2) prepares schools to meet new and unprecedented demands for the assessment, tracking and detailed reporting of student performance; and

3) allows schools to open new pathways of communication between the school and home by repackaging selected information recorded by the school for easy, secure Internet viewing by parents and students.

Hence, the company's solutions allow its users to solve one of the most important problems facing K-12 education today – the information gap between schools and homes.

By enabling the secure exchange of information among all members of the school system, schoolbell.com provides many benefits. The hardware and software that deliver schoolbell.com's solution are hosted on remote servers, which greatly reduce technology costs. Additionally, the company's solution allows the educational community to become more closely knit through enhanced communication via schools and homes via the Internet. schoolbell.com's technology platform is designed to scale to accommodate a high volume of transactions and large numbers of simultaneous users. schoolbell.com believes that this increased information flow within the community will ultimately result in more accurate and relevant information in a timelier manner. For example, teachers can use the site to take attendance, conduct weekly planning, enter student grades, post student work, create and update instructor web-pages, communicate with instructors and parents and view school calendars and information.

Founded: 1999

Headquartered: Minneapolis, MN

Public/Private: Private

URL: schoolbell.com

Partners: Computer Control Technologies, ActiveTouch, Sihope Communications

1999E Revenues: NA

2000E Revenues: NA

Revenue Components:

  Content Sales: X

  Commerce: X

  Advertising:

  Service :

  Other: X

Hub/Portal Strategy: Yes

Network Effect: Yes

Metrics to look for:
Number of Users (schools, districts, teachers, parents, students and administrators)

22. Supplemental Services

Innovative companies have identified other new ways to use the Internet to serve the K-12 market. These companies are providing services that aren't core to instruction or school operations, but are valuable nonetheless and offer profit-making potential.

The Internet creates a low-cost method of raising money for nonprofit organizations and schools by capturing a percentage of online sales for schools of the shopper's choice.

From U-Bake to U-Bid

For better or worse, fundraising has always been a part of public education. A primary function of active Parent-Teacher Associations has been raising money for school programs. Well, the bake sale of the new economy is online.

The Internet creates a low-cost method of raising money for nonprofit organizations and schools by capturing a percentage of online sales for schools of the shopper's choice.

Charity fundraising websites help individuals benefit their favorite groups or schools by doing things they'd do online anyway, like shop and browse the Web. Schools have been a favorite beneficiary of these charity sites, with two companies focusing exclusively on the school fundraising opportunity: Schoolpop and YourSchoolShop.com.

Schools have also used scrip to raise funds. Scrip is like a gift certificate, except that it is purchased for one's own use, instead of cash when shopping. Schools buy the scrip at discount, sell it at face value and keep the difference. Schools can buy scrip directly from merchants (many large grocery store chains participate, for example), or they can buy it from a national clearinghouse for participating merchants.

This process is greatly simplified with the Internet and the introduction of eScrip, With eScrip, schools ask parents, grandparents and community residents to register their credit cards and grocery cards with ESI, the company that administers the eScrip program. When these cards are used for purchases from participating merchants (online or offline), ESI pays back a percentage to the school. The schools eliminate much of the administrative burden of the program, and, because the scrip is not paid for in advance, the risks of advance purchasing and holding large amounts of cash is eliminated.

Online School Fundraising Companies

Company	The Deal	What's Different?
Schoolpop	Online shopping mall sends 30-75% of each purchase to school or school-related group of buyer's choice	Each of the 12,000 schools registered has a coordinator who serves as its contact at Schoolpop , making sure all checks arrive on time, troubleshooting and providing marketing help
YourSchoolShop.com	Online shopping mall, operated by GreaterGood.com, sends up to 30% of purchases to the school or school-approved group of buyer's choice	Signs an agreement with each school before listing it on the Web site
EScrip.com	Program that allows participating merchants to contribute a percentage of ones credit or debit card purchases to the school, group or organization of choice	The program brings an unprecedented ease of use to the fund raising process and allows simple, year-round fundraising

Source: San Francisco Chronicle; Merrill Lynch

Synapse, the company that raises the most money for schools through magazine subscription fundraising drives, also sees the potential in online fundraising, and has partnered with ZapMe! to utilize the ZapMe! network of schools and students to deploy its fundraising program. We expect to see other fundraising tie-ins, such as sharing of advertising revenues on school websites, or other initiatives as the online presence of schools and their supporters grow.

e-Commerce Enablers

Most children don't have credit cards, a fact that once made it a challenge for them to shop independently on the Web. Typically, mom or dad was usually called in to complete the transaction – nearly 2/3 of teenagers who have made purchases online used their parents' credit cards, according to Forrester Research.

Today, there are at least three online payment services that let children shop the web without a credit card. In these cases, parents register, with one of these e-wallet services, RocketCash, iCanBuy or DoughNet. They indicate how much their children can spend, where they can shop and, in one case, what time of day they can make purchases. The services also encourage children to save money or donate to charitable causes. DoughNet even lets kids play the stock market.

In true Internet fashion, these sites have signed on a myriad of e-commerce partners that appeal to teens and children. A sampling of these partners is listed in the table below.

Internet Shopping Enablers – An Allowance Online

RocketCash	ICanBuy	DoughNet
CDNow.com	Alloy.com	Amazon.com
Delias.com	Beyond.com	Autoweb.com
Eve.com	CDNow.com	Egghead.com
Fogdog.com	EToys.com	Jcrew.com
Outpost.com	PacSun.com	MP3.com
Reel.com	World Wildlife Fund	ToysRUs.com

Source: Merrill Lynch Global Growth Group

The Internet is a powerful source for information of all kinds, and, not surprisingly, is playing an increasing role in college choice.

To date, only 5% of teens aged 16-18 making online purchases have ever used one of these Internet alternate currencies, according to Forrester. We expect this percentage to increase as the Internet becomes more ubiquitous.

Online College Preparation

One of the most important decisions teens make is whether and where to go to college. The Internet is a powerful source for information of all kinds, and, not surprisingly, is playing an increasing role in college choice. From college applications to financial aid to textbook purchases, the Internet helps teens and families make that significant jump from high school senior to college freshman.

Companies offering these services are described in greater detail in the Higher Education section of this report, and include Embark.com, FastWEB.com, Finaid.org, Achieva, Princeton Review and CollegeNet.com.

"An author should write for youth of his own generation, the critics of the next and the schoolmasters of the ever afterward."

– F. Scott Fitzgerald

Schoolpop, Inc. – makes raising funds for schools easy

The company's number one objective is to give anyone who has access to the Internet a way to contribute much needed funds to the school of their choice, just by shopping through Schoolpop.com. The model builds off of "affiliate marketing," in which a vendor (like Amazon.com) pays independent Web sites a fee every time a visitor clicks on a link and buys a product or service.

Schoolpop, Inc. currently served more than 16,000 schools nationwide with more schools added everyday. It enables online shoppers to contribute funds to their favorite school through more than 200 retailers, including Amazon.com, Toysrus.com, Gap, Buy.com and Dell. Once a school registers with Schoolpop, parents, teachers and alumni raise funds merely by shopping – through Schoolpop – at its participating online retailers. If they buy, a portion of the purchase price, typically between 5 and 10 and up to 20 percent, will go to the school of their choice. Each school has set a Schoolpop fundraising goal ranging from $500 to more than $20,000 for the 1999-2000 school year. So far the company has given away over $600,000. A quarterly report as well as a check is then sent to each school listing the total purchases made during that time period and the amount of money raised. Schools can also get real-time reporting from the website.

Schoolpop's vendors find that the partnership translates into longer customer life. Community conscious parents recognize that they can raise much-needed funds effortlessly for their schools simply by purchasing items they were going to buy anyway. It is a significant customer acquisition tool for the merchants.

Schoolpop has received funding of $49 million so far from Accel Partners, Meritech Capital Partners, The Reader's Digest Association, Inc, Chase H&Q, Wit Capital, Thomas Weisel Partners and angel investors. This amount is believed to be the largest ever received by a for-profit company dedicated to fundraising.

In addition to the investment by The Reader's Digest Association, Inc., Schoolpop recently announced a strategic partnership with QSP, a subsidiary of Reader's Digest. In operation for over 35 years, QSP is the world leader in fundraising for schools. QSP will link its sales force and fundraising programs with Schoolpop's online technology and e-commerce partners to provide schools a complete range of online and offline fundraising programs. This alliance provides an estimated 50,000 schools with greater access to Schoolpop's fundraising tools.

Based on Ernst & Young's 1999 online shopping expectations of nearly $30 billion (November 1999), Schoolpop shoppers have the potential to raise as much as $1 billion for U.S. schools. More than 23 million families in the United States have at least one child in grades K-to-12, meaning Schoolpop's potential customer base is big.

Schoolpop is closely affiliated with and has received endorsements from leading national education groups, including the National Association of State Boards of Education, the American Association of School Administrators, the National Schools Boards Foundation and the National Association of Secondary School Principals.

Founded: January, 1999

Headquartered: Menlo Park, California

Public/Private: Private

URL: schoolpop.com

Claim to Fame: Leading online fundraiser for K-12 schools

Coolest Feature on the Website: Real time online reporting enables schools to monitor progress of fundraising efforts

Key Investors: Accel Partners, Meritech Capital Partners, The Reader's Digest Assn, Inc., Chase H&Q, Wit Capital and Thomas Weisel Partners

Key Partners: QSP, Inc. (subsidiary of Reader's Digest Assn, Inc.), EBay, Webvan Group, Inc.

Merchant Partners: 200+ merchant partners including Qwest, Cisco, Dell, Webvan Group, Inc., Amazon.com, Toysrus, Gap, Buy.com and eSCORE!.com

Revenue Components:

  Content: X

  Commerce: X

  Advertising: X

  Service: X

  Other:

Network Effect: Yes

Hub/Portal Strategy: Yes

Metrics to look for:
Number of partners: 200+ merchants
Number of schools: 16,000 at end of Q1
Number of registered users

Achieva Online

Achieva College Prep Centers offers college preparatory services to students at centers around California. Through Achieva Online, it is taking these services to the World Wide Web, vastly expanding its presence among college-bound high school students and creating a significant opportunity to broaden its services for this very attractive demographic of young (striving-to-become), well-educated students. The Internet offers the open communication necessary for quick feedback and enhances the one-on-one interaction between the counselor and student. In light of the speed at which teenagers have embraced the Internet (according to IDC 40% of home Internet users are between 12 to 17 years old), Achieva Online has positioned its service offering to reach the widest audience in the quickest, most efficient manner.

Achieva provides individualized college counseling that takes students through the whole spectrum of the college entrance process. The company offers a one-stop shop in a highly fragmented market. Achieva counselors help with everything from selecting colleges to planning for standardized tests to writing essays and preparing for interviews. For students early in their high schools years, the counselors also offer advice on study skills, college preparatory curriculum, and career choices. Achieva also provides SAT test preparation and academic tutoring to students anxious to improve their test scores, grades and core academic abilities.

In the last two years, 100% of Achieva's students have gained acceptance to one of their preferred colleges, with 85% admitted to one of their top two schools. Moreover, Achieva students saw an increase of their SAT 1 scores on an average of 150 points. This phenomenal record, combined with increased competition for seats in U.S.'s leading universities, point to the opportunity for Achieva to create a highly leverageable business out of its offline properties. Through the Internet, companies such as Achieva can drive markets for services that have, to this point, been underdeveloped.

Founded: 1996

Headquartered: Palo Alto, California

Public/Private: Private

URL: achievaonline.com

Claim to Fame: Very high efficacy rate in helping students to get accepted to the college of their choice

Key Investors: Many Silicon Valley leaders and investors including Lauren Powell Jobs, Audrey MacLean, Tim Draper, Jim Katzman, Walter Loewenstern, Burt McMurtry, Russell Pyne, and Marc Jones

Revenue Components:

Content: X

Commerce:

Advertising:

Service: X

Other:

Network Effect: No

Hub/Portal Strategy: No

Metrics to look for:
Number of users/students
Number of partners

College Coach LLC

College Coach offers a program that is designed to simplify the admissions process and ensure students that get into their top choice of schools. The process includes: 1) a proven method for selecting colleges to ensure students apply to the right schools, 2) hands-on help writing college essays that stand out, 3) established marketing tools that pinpoint what makes an individual unique, 4) mock interviews with real admissions pros that boost confidence and improve technique and 5) expert college financing advice to simplify the complex process.

Recognized by educators, parents and students as a powerful college advisory offering, College Coach provides corporations with a turnkey college consulting solution. The company offers workshops on Application Review, Financial Aid, Selecting the Right College, The High School Plan, Saving for College and many others. Developed with guidance and admissions counselors and continuously tested with families and students, the program workshops address seven individual aspects of the college entrance process, including school selection, essay writing, financing and interviewing.

Founded: 1998	**1999E Revenues:** $900,000
Headquartered: Newton, MA	**2000E Revenues:** NA
Public/Private: Private	**Revenue Components:**
URL: www.getintocollege.com	**Content Sales:** X
Claim to Fame:	**Commerce:** X
Investors: angel investors, company is currently raising $3-5 million	**Advertising:** X
	Service: X
Network Effect: Yes	**Metrics to look for:**
Hub/Portal Strategy: Yes	Number of clients: more than 40,000 schools

The College Board

Led by former West Virginia Governor Gaston Caperton, The College Board is a not-for-profit educational association that supports academic preparation and transition to higher education for students around the world through the ongoing collaboration of its member schools, colleges, universities, educational systems, and organizations.

In all of its activities, the College Board promotes equity through universal access to high standards of teaching and learning and sufficient financial resources so that every student has the opportunity to succeed in college and work.

In addition to administering the widely known SAT and PSAT/NMSQT tests, the College Board also helps:

1) students prepare academically for and enter college,

2) adult students enter college,

3) international students make the transition to U.S. colleges,

4) students earn college credit and placement,

5) families secure financial aid information,

6) colleges and universities identify, recruit and place students,

7) educators develop and advocate public policy, and helps

8) educators and policymakers understand the changing world of education.

Founded: 1900
Headquartered: New York, NY
Public/Private: Private
URL: www.collegeboard.com

Coolest Feature on Website: SAT question of the Day

Revenue Components:
Content: X
Commerce: X
Advertising: X
Service: X
Other:

Network Effect: X
Hub/Portal Strategy: X

23. Issues in K-12 e-Learning

The Promise of Broadband

The real breakthrough in children's online media will come through broadband, with WebTV or other fat pipes providing the opportunity to combine the rich, full-motion video and sound of TV with the interactive and information-intense attributes of the Internet.

Broadband providers, particularly cable, are eagerly eyeing the attractive home marketplace. Demand for broadband consumer access will be driven by bandwidth hungry applications that we expect to be rapidly adopted by consumers over the next five years.

Educational content will be of particular value in the broadband world, and broadband service providers have actively invested in promising content providers to secure those relationships. Free educational content may be the "hook" that induces parents to subscribe to a broadband service or it may be a "premium service" that parents are willing to pay more for. In either case, broadband service providers are beneficiaries. Hence, these companies have been active partners in developing promising content, as shown in the following table:

Educational content will be of particular value in the broadband world, and broadband service providers have actively invested in promising content providers to secure those relationships.

Education Investments By Broadband Providers

Broadband Investor	Sponsored e-Learning Company
RCN	JuniorNet
Vulcan Ventures	Lightspan
Media One	Classroom Connect

Source: Merrill Lynch Global Growth Group

Current connection speeds currently available of up to 56 Kbps or 128 Kbps through ISDN are not adequate for rich educational applications. However, this is a "chicken and egg" situation since the more data-intensive applications won't develop until bandwidth is available. To this extent, the Internet is a greenhouse to test the most successful services that can then migrate into broadband.

At a school level, bandwidth will enable teachers to instantly include rich content in the classroom in all forms, whether downloadable multimedia software or full-motion film and video. The value of high-speed connections will increase as more content becomes available to schools. We expect to see creative ways for schools to obtain high-speed connections in the future, with ZapMe! the leading example of innovation in this area.

For the time being, however, "mindwidth is more important than bandwidth" Kids want to be engaged.

Time to E-Mail the Declaration of Independence (344,000 bits)

Year	1965	1993	1998	1999
Rate	1200 bps	115.200 bps	448,000 bps	39,872,000 pbs
Speed	4 minutes and 46 seconds	3 seconds	0.76 second	86/1000 of a second.

Source: QED. Bps = Bits per second.

The Need for Qualified Salespeople

Capturing market share fast is a key mantra of the Internet. Hence, a huge weapon to accelerate adoption of e-learning solutions in schools will be a qualified sales force. Selling to schools is currently very relationship driven, particularly with bigger ticket items where district or even school board approval will be required. The relationships and know-how of an experienced sales force can be critical in quickly moving forward the decision-making process.

Selling into schools can also be complicated by the fact than many are seeking to use special sources of funding, particularly grants, or sources requiring a formal Technology Plan. As a consequence, these salespeople (or these companies) may take on consulting-type roles, providing grant-writing assistance or aid with technology planning to jump-start the selling process, illustrating again the specialization in the role. One consequence is that there appear to be growing differences between salespeople with experience in selling technology into schools, and those whose products are not technology-based.

A huge weapon to accelerate adoption of e-learning solutions in schools will be a qualified sales force.

We believe that, ultimately, deployment of e-commerce solutions to schools, such as those envisioned by Epylon.com, Simplexis.com or School Specialty will reduce, although not altogether eliminate, the specialized nature of school sales. In this area, we believe the Internet will demonstrate, once again, its ability to reduce inefficiencies and transaction costs, potentially freeing more resources that can be directed at improving education.

The Internet will demonstrate its ability to reduce inefficiencies and transaction costs, potentially freeing more resources that can be directed at improving education.

Ads, Privacy and Marketing to Children

The Internet presents children with an extraordinary new means to tap into rich sources of information that previously were difficult to access, and to communicate with their peers and others in ways never before imaginable. There are many positive aspects to this new freedom for children. At the same time, the interactive activities available on Web sites, such as chat rooms, message boards, personal home pages, pen pal programs, and free e-mail services, also make it easy for children to disclose their personal information to the general public without their parents' awareness or consent.

In addition, the Internet's technology enables marketers to establish direct and ongoing one-to-one relationships with individual children in ways previously unavailable to traditional media. The increasing number of children online coupled with their growing economic power create enormous opportunities for marketers to promote their products and services to an eager, targeted, and vulnerable audience. In some cases, marketers do not post privacy policies nor do they advise children to seek parental approval before divulging personal information that could later be used for targeted advertising or promotions.

The Federal Trade Commission has set up guidelines, that went into effect April 21, to address the dual concerns of protecting children's privacy as well as leaving unhindered the growth of the internet as a medium for commerce, education and entertainment. The FTC guidelines require operators of kid sites to post privacy policies, notify parents about their practices and get parental consent before collecting any personal information from children under age 13. The FTC stopped short of strict legislation, wanting to leave room for industry self-regulation.

Parents have different sensitivity levels to the issues of advertising to their children, and e-learning companies have sprung up to serve these diverse needs. Some parents reason that advertising is already ubiquitous, and are accepting of online advertising, particularly in exchange for the free or low cost services that advertising subsidizes. Others, concerned about the number of commercial messages their children already receive or the potential for captivating, interactive online advertising would prefer to pay for services that are advertising-free. (JuniorNet, for example, is targeting this market with its advertising – free

subscription service). In either case, there is general objection to advertising that is integrated seamlessly into a website's content. Responsible sites are forswearing this and many children's sites go so far as to clearly delineate content from advertisements. Even so, parents of younger children often escort their kids online; at this stage the Internet-connected computer does not have the "babysitter" status of TV.

These issues are intensified in a school environment, and we believe the resolution will be the same as in the home environment. Specifically, some schools will be pragmatically accepting of advertising in exchange for valued resources or services and others will adhere to their philosophical objections. Some e-learning companies will bridge both worlds by offering two pricing mechanisms for their services, one that is free or discounted but subsidized by advertising, and the second, one that is full price and advertising free. Given the mandate that schools have to provide Internet access to students, the fact that the Internet in general adheres to an advertising model, and the national concern over the "digital divide" between income classes, we believe that advertising-sponsored services (ZapMe!, for example) will continue to have an important, if not universal, role in schools. It is also clear that not everything need be "free" for schools to adopt it. Schools are spending on programs they believe have value, assisted in part by state, federal, and corporate grants such as the e-rate and Technology Literacy Fund.

Given the mandate that schools have to provide Internet access to students, the fact that the Internet in general adheres to an advertising model, and the national concern over the "digital divide" between income classes, we believe that advertising-sponsored services will continue to have an important, if not universal, role in schools.

ZapMe! Corporation

ZapMe! offers schools an interactive global education portal that delivers safe, meaningful and educational content and services to the K-12 community. And it's free. ZapMe! will give K-12 schools 15 PCs, satellite-delivered Internet access and its aggregated education content at no cost. In return, schools pledge to ensure that the system is used for at least four hours each day. The ZapMe! solution enables all schools to employ technology to help children learn. The company has thousands of schools interested in its technology solution.

On ZapMe!'s Netspace, students can access 10,000 educational websites, message boards, e-mail and chat functions, as well as the Microsoft Office suite. If school administration and parents approve, students can also access the broader Internet. The ZapMe! lab is funded by technology placement fees from partners such as Compaq, Philips, Microsoft and Gilat Satellite Networks as well as paid advertising on the ZapMe! Netspace, school e-commerce and, in the future, home access charges. The company manages costs through standardization of hardware and software configurations. As the technical support provider, this standardization also enables ZapMe! to provide a high-level of customer service to schools, ensuring that the network always available.

Founded: 1997

Headquartered: San Ramon, CA

Public/Private: Public (Nasdaq: IZAP)

URL: ZapMe.com

Claim to Fame: It's free!

Investors: Dell, Sylvan Learning Systems, Ares Fund (Apollo), QuestMark Partners, Gilat Satellite Networks

Partners: Yahoo!, Ask Jeeves, Amazon.com, Classroom Connect, School Specialty, Microsoft, Dell, Toshiba, Sylvan Learning Systems, Gilat Satellite Networks

Coolest Feature: The e*locker. Students who save their work on the Netspace can access it through ZapMe! from home too.

1999A Revenues: $2.5 M

2000E Revenues: $36.0 M

Market Value: $127 M (5/15/00)

Revenue Components:

  Content Sales:

  Commerce: X

  Advertising: X

  Service :

  Other: X (Services that utilize the network)

Hub/Portal Strategy: Yes

Network Effect: Yes. Home adoption will be driven through word of mouth.

Metrics:
Unique Users (Nov. 1999): approximately 300,000
Number of schools: 1252 (as of 12/99)

24. The Empire Strikes Back? Publishing & Media Companies vs. Web Upstarts

Media buzz about the insurgence of traditional offline companies on the web reached its height at the Christmas shopping season, when newly christened "brick and click" brands were among the top shopping websites in December.

Are traditional companies finally using their powerful assets to make themselves real net players? Or will cautious efforts mean they continue to be outpaced by agile, smart, and aggressive netcos?

In the K-12 education arena, the traditional powerhouses are the publishing companies. What are their online efforts, and how do they compare to born on the web brands?

e-Commerce consultants David Sanderson and Chris Zook recently identified "countermoves" that traditional companies are taking to stake online positions and trump Internet start ups in their industries:

Traditional Companies Can Capitalize on Internet Opportunities

Strategy	Defined	Example
Creating Separate Web Units	Separate business structures to escape bureaucracy and risk-averse culture of traditional firms.	Barnesandnoble.com, WingspanBank.com
Buying and Allying	Gain speed to market by acquiring, investing or partnering	CVS buys Soma.com American Greetings partners with AOL
Using their Deep Pockets	Spend from their vast resources to build out sites	Microsoft, Macy's, Sears, Wal-Mart
Creating Click-and-Mortar Companies	Find synergies, such as handling exchanges and returns	Wal-Mart
Capturing Brand Loyal Customers	Leverage existing customer base to decrease customer acquisition cost. 40% of visitors to established company sites came because of an offline affiliation.	Wal-Mart—100 million people shop at WalMart stores each week.
Achieving Efficiency Gains	Decrease costs, time to market by putting operations online.	e-GM

Source: David Sanderson & Chris Zook, "The Problem With Purity." *The Industry Standard*, Jan. 14, 2000

Publishing Companies – Starting to Leverage Clout

How are traditional publishing companies responding to these opportunities? Publishing is one of the industries that has the potential to be completely transformed by the Internet. Given that we expect significant upheaval in this industry over the long-run, the relatively small and contained Internet strategies of most education publishing companies so far suggest that we are in the early stages of this change. At the same time, trying to keep pace with the market, rather than lead it, is not the way to achieve the outsized gains possible in the Internet's "winner take all" environment (although doing so may require wrenching changes for an existing company).

Publishing is one of the industries that has the potential to be completely transformed by the Internet.

All the publishing companies we reviewed had some presence on the Internet. Generally all had e-commerce that allowed for online purchases of books or supplemental materials. In addition, the majority had designed online content to supplement their textbooks or curriculum programs. Many are also maintaining all their content in a digitized format, with the expectation that they will use it at some point in the future. Any effort beyond this, for most companies, is still in the planning stages. In the table below, we note current or planned initiatives that extend beyond these two fundamental components.

While none of the publishers currently appears likely to spin off an entire Internet company, a la WalMart or Barnes & Noble, some appear to view the Net as a more strategic opportunity than others. In our view, about half appear to see it as a high-level opportunity that should be directed by a corporate executive officer. The other half appear to view it as a supplement to their current business operations. In these cases, the primary direction of these efforts is taking place at the business unit level.

Scholastic's experience is instructive. It shifted its Internet strategy to the corporate level after years of allowing its various divisions to pursue their own initiatives. Scholastic was an early leader on the Internet, launching its first offering in the early 1990s. Most of the activity, however, took place at the operating units. When the different divisions pursued their own visions, the result was a collection of Internet experiences that were organized around the divisions themselves, not a cohesive user experience. One year ago, Scholastic integrated its efforts, focusing instead on experiences that would leverage companywide assets, such as strong content and distribution to teachers and families. We believe other publishers will elevate their Internet initiatives as they become more core to their businesses, rather than supplementary initiatives to each division.

We also note that several publishers have taken venture stakes in Internet companies, although few have purchased such companies outright. As for spending as an Internet strategy, it varies significantly between companies.

Digitize or Perish? Publishers Go Online

	Corp-orate Position	"Deep Pocket" Spending	Investing & Buying	Online Purchases	Websites to support Content	Additional Initiatives
Pearson	No	120 mm pounds in 2000 (*)	Initiated K-12 e-ventures group on 1/14/99. Invested in e-Score, edGate Blackboard	Yes	1000 sites in Pearson Education	**K-12**: Developing Pearson Education Network, a portal for teachers, parents, students and has announced partnership with AOL to carry the network (Kaplan, blackboard). CCC has Internet component to deliver instructional content. **Higher-Ed**: Instructional websites can be customized for professors. Releasing Pearson Course Management System in fall. Sites will also be compatible with commercial course management providers (e-college, WebCT, BlackBoard)
McGraw Hill	Yes	NA	Invested in NetLibrary	Yes	500 book and 32 subject sites	**K-12**: Creating McGraw Hill Learning Network for teachers, parents, students. **Higher-Ed**: PageOut allows instructors to create own websites. 6,200 registered users. Will also have 170 online learning centers by 12/31/00, password protected sties where instructor supplemental materials can be housed (PowerPoint slides, web index, etc.) Also, some reference books from professional publishing division now converted to online subscriptions.
Houghton Mifflin	Yes	NA	Invested in Online Learning.net & NetLibrary	Yes	Over 200 book sites	**K-12**: Offers EduPlace, a site for teachers, parents, and students. Sees opportunity in teacher training. **Higher-Ed**: Developing content management system for own content. **Corp**: CAT testing and certification will ultimately be online.
Harcourt General	Yes New Position	NA—Still part of operating groups	Owns 17% of Family Education Network	Yes	Yes	**K-12**: Developing a distance learning company. Is pursuing high school accreditation for courses. **Higher Ed.**: Developing a distance learning company. **Corp**: Half of NETg's titles can be delivered over the Internet
Thomson	No	NA	Purchased Sylvan Prometric and Wave Technology	Yes	580 sites in Thompson learning	**Higher-Ed:** Compcopy.com enables professors to review textbooks online well ahead of published editions. Has "e-sampling" of textbook chapters. Could ultimately offer entire text online and simply charge "license fee" for each student taking a course. 900,000 students used Petersons.com to apply for college in 1999. **Corp**: Has over 100 web-enabled IT courses. Does online assessment for Microsoft. Sylvan Prometric (testing) and Wave Technology (IT training) will build out lifetime learning cycle of training and assessment.
Scholastic	Yes	$20 mm in FY00 (*)	No	Yes	Yes	**K-12**: Built a teacher site with 15,000 pages on commonly taught skills and subjects. Relaunched on Nov. 1, 1999, as free comprehensive instructional site for teachers. Will roll out comprehensive teacher's store by Fall 2000. Premium content, such as distance learning and training are next.
Tribune	No	No	Invested in Lightspan, teach.com	Yes	No	**K-12**: No publicly released strategy for K-12 assets.
Primedia	Yes	$40 mm in 1999 (*)	Primedia Ventures (no ed. Investments to date)	Yes	Yes	**K-12**: Developing teen strategy around seventeen.com and broadband content – ChannelOne and Films for the Humanities. Sold supplemental materials unit in Nov. 1999. **Corp**: Developing strategy around broadband content, Primedia Workplace Learning (13,000 hours of specialized workplace training).
Torstar	No	NA	Invested in SmarterKids. Com, DigitalThink	Yes	Yes	**K-12**: On Aug. 26, announced plans for "Internet business aimed at simplifying many of the challenges faced by teachers as they prepare for class everyday." **Higher-Ed**: Has 40% investment in ITI Education, and sees DigitalThink investment as

Source: Merrill Lynch Global Growth Group

Long run, we believe the potential for e-books in education is tremendous, and holds benefits for content owners.

On the cost side, 20-22% of publishing costs are associated with printing physical books.

On the revenue side, estimates suggest that, in the college market, about 30% of the market is captured by used books.

Currently, much of the technology in textbook sales is given away to sell the book.

Long run, we believe the potential for e-books in education is tremendous, and holds benefits for content owners. Conversations with McGraw-Hill, for example, suggest that there are savings on the cost side and positives on the revenue side. On the cost side, 20-22% of publishing costs are associated with printing physical books. Eliminating this, could, of course, have bottom-line benefits for publishers. On the revenue side, estimates suggest that, in the college market, about 30% of the market is captured by used books. New digital books, with their ability to be updated on a yearly or even semester basis, can potentially recapture some of this market share for major publishers. McGraw-Hill is preliminarily addressing this opportunity by including CD-ROM updates with about half of the non-first-year textbooks it sells into the college market.

At the same time, the Internet as a publishing mechanism makes it easier for content providers to get their materials online, likely increasing competition for the traditional publishers as they move to the Web. This competition could come in the form of professor class notes, or even entire courses from "celebrity professors" who might use UNext or other vehicle to put their courses online. Government and corporate resources will also be more widely available. Hence, publishers will have to continue to provide strong content, but also services to accompany that (McGraw's PageOut or Thomson's e-sampling of textbook chapters being two examples). Moreover, publishers will forced to find business models that continue to generate revenue. Currently, much of the technology in textbook sales is given away to sell the book. We may see that business model flipping in the next few years—where the technology is recognized by the market as having real value on its own, not simply as an "ancillary" to paper and ink.

WRC Media

WRC Media is the education division of Ripplewood Holdings, LLC, an investment firm established in 1995 to fund and grow market leaders. The divisions of WRC Media include CompassLearning, the Weekly Reader, the World Almanac Education Group and the American Guidance Service.

CompassLearning is located in San Diego, CA, and is the first education company acquired by Ripplewood. Formerly Jostens Learning, Compass is the largest publisher of supplementary educational materials in the world. It is a leading provider of instructional software with over 7,000 hours of instruction. More than 20,000 schools serving nearly 14 million students use CompassLearning programs designed to help teachers manage student performance, personalize learning, and connect communities of learners.

Weekly Reader, located in Stamford, CT, is the leading periodical serving over nine million elementary school children. It also publishes other branded periodicals and instructional materials, including Teen Newsweek,

published for middle and high school students. The company also provides a content-rich web site for children at www.weeklyreader.com, which received 31 million hits in 1999, with an average view time of 10.5 minutes

World Almanac Education Group, headquartered in Mahwah, NJ, publishes the World Almanac, Facts on File, Gareth Stevens, and Funk and Wagnalls, and has a subscriber base of nearly all public, private and school libraries.

American Guidance Service, located in Circle Pines, MN, is a leader in individually administered assessments to diagnose learning traits and deficiencies and publishes a variety of high interest, low reading level text books for middle and high school.

WRC Media is committed to anticipating and applying leading technology in education, and products from its companies are now found in 90 percent of school districts nationwide, in nearly all public and private libraries, as well as in nine million homes.

Founded: 1999

Headquartered: New York, NY

Public/Private: Private

URL: wrcmedia.com

Investors: Ripplewood Holdings LLC, SG Capital Partners, Northwestern Mutual Life Insurance, Jackson National Life, DLJ

1999A Revenues: $214.1 million (fiscal year ends 3/31)

2000E Revenues: NA

Revenue Components:

  Content Sales: X

  Commerce: X

  Advertising:

  Service :

  Other: X

Hub/Portal Strategy: Yes

Network Effect: Yes

Metrics to look for:
Number of schools
Number of students
Number of homes

Pearson plc Keiretsu

Founded in 1844, Pearson plc is one of the largest publishers in the world with operations in over 40 countries. Its operations include the Financial Times Group, the Penguin Group, Pearson TV and Pearson Education. In addition, Pearson recently announced the formation of Pearson Broadband Education Television and the Pearson Education Network. The new ventures will draw upon intellectual properties and distribution platforms from across Pearson capitalizing on Pearson Education's position as the world's premier education company and Pearson Televisions' skills as a preeminent independent television production company.

Financial Times: The Financial Times Group aims to be the international business community's authoritative source of general business news and analysis. Built around the flagship of the group, The Financial Times, FT branded newspapers and electronic services are used by over two million business people everyday. One of the Group's subdivisions, FT Knowledge, has partnered with the University of Michigan Business School to offer online executive education. The first courses will be launched in the summer 2000 and will be limited to 50 students per course to facilitate greater interaction and a richer learning experience than through courses with open enrollment.

The Penguin Group: The Penguine group is the world's most renowned English language publisher with some 50 million readers of Penguin books in 105 countries around the world. In addition to the bird, one of the most recognized brands of any kind, Penguin owns some of the most highly respected publishing imprints and trademarks.

Pearson Education: Pearson Education is the world's premier educational publisher. Their products reach 70 million students in countries all around the world. English is just one of the languages: throughout Europe, Asia and Latin America the print and on-line educational texts and programs are published in 18 languages.

Pearson Television: Pearson Television is the largest independent international television producer with over 150 programs currently in production in over 30 countries and programs sold to 100 countries. 200 million viewers watch Pearson produced TV programs monthly. Pearson TV takes ideas for popular television and adapts them for different markets, making them in the local language in countries all around the world.

Pearson Education Network: Pearson plc will partner with American Online, Inc. to launch a new online consumer portal later this year. It will position Pearson's education network as the preferred supplier of educational content and online learning tools with AOL providing delivery of Pearson's education network on the AOL service and other America Online brands. The two companies will also investigate opportunities to collaborate on the development of a curriculum architecture and a range of select education tools.

It will supplement in-school activities from elementary school through adult learning, with both ongoing education and professional training. The portal will draw on content, tools and distribution channels from Pearson businesses, and incorporate content from other leading print and Internet educational and consumer publishers, both within and outside Pearson.

The network will earn revenues from a mix of individual subscriptions and site licences from schools and e-commerce and advertising revenues in the open access part of the network. Advertising will not appear on the site when accessed from schools. The overall development of the education network is being led by Pearson's in-house digital publishing company, San Francisco-based Headland Digital Media. The brand identity for the network will be announced at a later stage.

The education network will extend the ongoing learning activities of its participants. For example, the elementary-school teacher portal will include lesson planning software and teacher training materials. Parents of school-age children will have access to a fully integrated site that ties back directly to the components of the student's experience, thus establishing a genuine home-school connection. The college student portal will provide detailed, subject-specific learning materials for key academic disciplines. The adult-learning portal will provide information and resources relating to personal and professional development. Each portal will integrate the components that the online environment makes possible - fast communication, easy access to peers and tutors, a set of always accessible organizational tools, self-paced learning and assessment opportunities, and a host of subject- and grade-specific learning resources.

Pearson Education also has formed the first of many strategic alliances with, and equity investments in, leading Internet educational companies. The alliances are with:

SCORE! Learning Inc.: Pearson will take an equity stake worth $20 million. SCORE! Learning is a division of Kaplan, Inc. This alliance strengthens the relationship already in place between these partners. More than 100 neighborhood SCORE! after-school centers already use adaptive digital curriculum created by Pearson's Computer Curriculum Corporation. Pearson and SCORE! will work together to develop the technology required to create new services for Internet delivery which will be available at SCORE! centers as well as Pearson's education network.

Copernicus: Pearson is taking a 10% equity stake and will sit on the Board of Edgate.com, Inc., creator of The Copernicus Education Gateway (Copernicus), which provides customized, local education portals for teachers, parents and students in local schools and school districts across the United States. Copernicus will co-brand their localized online education gateways with Pearson's education network, and the combined offering will be
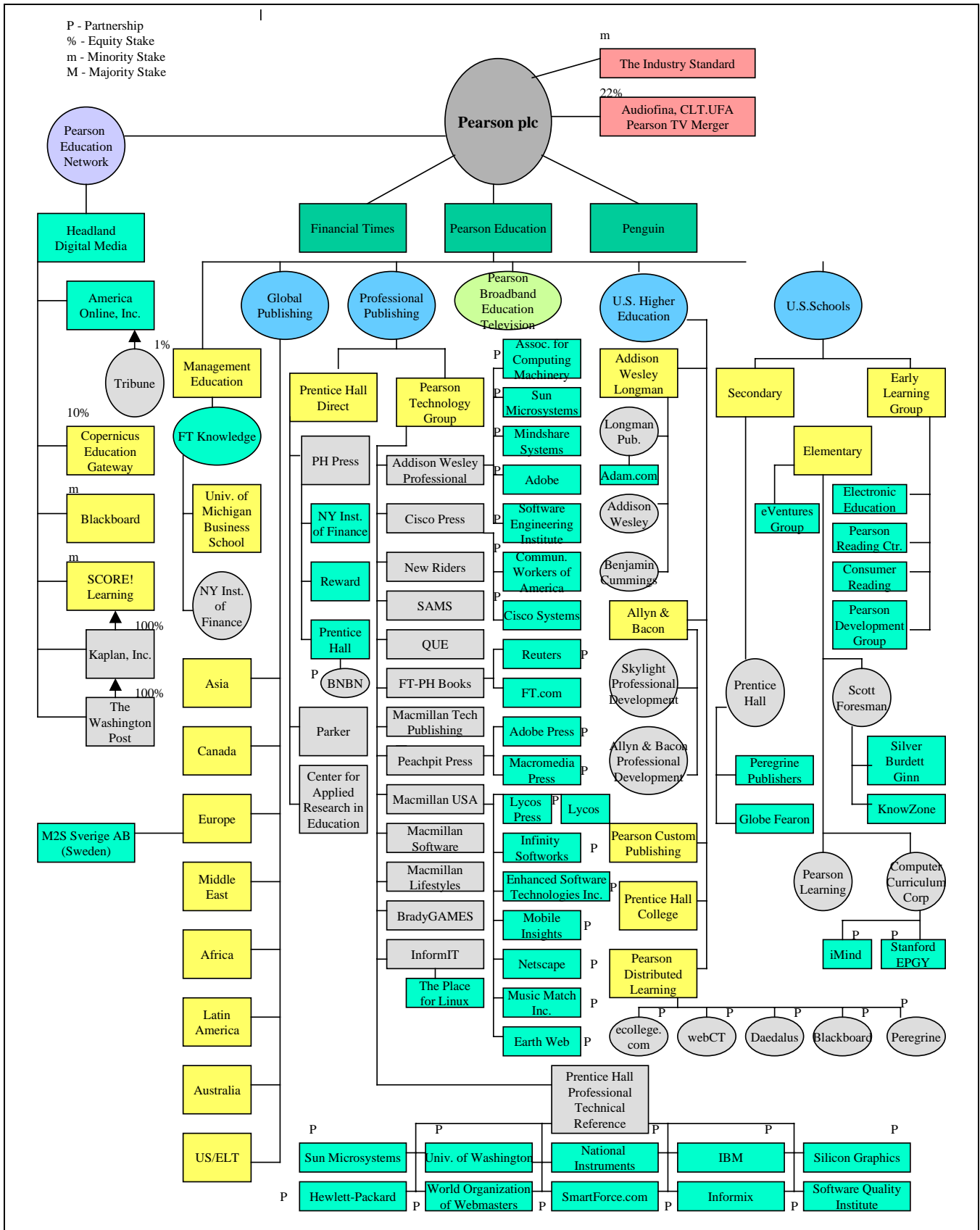
promoted by Pearson and Copernicus as a key element of the kindergarten to 12th grade section of the network.

Blackboard: Pearson is partnering with, and will invest in, Blackboard Inc., a leading Internet Infrastructure company whose software platform powers "edu" online environments at more than 3,000 institutions and in more than 70 countries around the world. In addition to online administrative and community services, the Blackboard CourseInfo product line enables educators to enhance in-class instruction and/or deliver distance learning by bringing their course materials, class discussions, assignments, and quizzes to the web. More than 2 million people worldwide teach and learn in online education environments powered by Blackboard.

The Blackboard partnership will further position Pearson as the premier provider of higher education content and services for online course environments. The Blackboard CourseInfo course management platform will be featured in the education network serving the Higher Education, K-12, Professional Development and Adult Learning markets. Pearson and Blackboard are also in the process of developing plans for cross promotion and development of content and services for Blackboard's Scholar.com and Blackboard.com web properties and the Higher Education portion of the education network.

Partnerships with Internet-focused companies are nothing new to Pearson plc. Since the mid-1990's Pearson plc has partnered with and/or invested in companies such as The Industry Standard, Cisco Systems, Lycos, Netscape, Barnesandnoble.com, iMind, webCT, and ecollege.com, among others.

The Pearson plc Keiretsu

P - Partnership
% - Equity Stake
m - Minority Stake
M - Majority Stake

Pearson plc

m — The Industry Standard

22% — Audiofina, CLT.UFA Pearson TV Merger

Pearson Education Network

Headland Digital Media

Financial Times — Pearson Education — Penguin

America Online, Inc.

Tribune — 1%

Management Education

FT Knowledge

Global Publishing — Professional Publishing — Pearson Broadband Education Television — U.S. Higher Education — U.S. Schools

10% — Copernicus Education Gateway

m — Blackboard

m — SCORE! Learning

Kaplan, Inc. — 100%

The Washington Post — 100%

Univ. of Michigan Business School

NY Inst. of Finance

Asia
Canada
Europe
Middle East
Africa
Latin America
Australia
US/ELT

M2S Sverige AB (Sweden)

Prentice Hall Direct — Pearson Technology Group

PH Press
NY Inst. of Finance
Reward
Prentice Hall
BNBN — P
Parker
Center for Applied Research in Education

Addison Wesley Professional
Cisco Press
New Riders
SAMS
QUE
FT-PH Books
Macmillan Tech Publishing
Peachpit Press
Macmillan USA
Macmillan Software
Macmillan Lifestyles
BradyGAMES
InformIT
The Place for Linux

Assoc. for Computing Machinery — P
Sun Microsystems — P
Mindshare Systems — P
Adobe — P
Software Engineering Institute — P
Commun. Workers of America — P
Cisco Systems
Reuters
FT.com
Adobe Press
Macromedia Press
Lycos Press — Lycos — P
Infinity Softworks — P
Enhanced Software Technologies Inc. — P
Mobile Insights — P
Netscape — P
Music Match Inc. — P
Earth Web

Addison Wesley Longman
Longman Pub.
Adam.com
Addison Wesley
Benjamin Cummings
Allyn & Bacon
Skylight Professional Development
Allyn & Bacon Professional Development

Pearson Custom Publishing — P
Prentice Hall College
Pearson Distributed Learning

ecollege.com — P
webCT — P
Daedalus — P
Blackboard — P
Peregrine — P

Secondary — Early Learning Group

Elementary

eVentures Group

Electronic Education
Pearson Reading Ctr.
Consumer Reading
Pearson Development Group

Prentice Hall

Scott Foresman

Peregrine Publishers
Globe Fearon

Silver Burdett Ginn
KnowZone

Pearson Learning — Computer Curriculum Corp

iMind — P — Stanford EPGY — P

Prentice Hall Professional Technical Reference

Sun Microsystems — P — Univ. of Washington — P — National Instruments — P — IBM — P — Silicon Graphics — P

Hewlett-Packard — P — World Organization of Webmasters — P — SmartForce.com — P — Informix — P — Software Quality Institute — P

Scholastic.com – Leveraging An Offline Audience

Scholastic.com is the Internet portal for Scholastic, the global children's publishing company. Scholastic.com is primarily geared toward K-8 teachers, with over 15,000 pages of content.

Scholastic's Internet strategy benefits from an already significant offline customer base. Nearly one million teachers participate in the company's book clubs and software clubs, and each book club order form goes to about 25 households (which come home with the explicit endorsement of the teacher). The company's classroom magazines have a circulation of 7.5 million. Finally, the company holds 85,000 book fairs per year attended by hundreds of thousands of parents and kids. This distribution channels to this already expansive audience are in place and can be tapped relatively inexpensively to drive traffic to scholastic.com. Hence we expect that Scholastic.com will enjoy very low customer acquisition costs as a result of its existing distribution channels to teachers, parents and students.

Scholastic.com is designed to be a classroom vehicle, with content relating to the most commonly taught themes, subjects and skills in grades K-8. Instructional activities are focused broadly on developing literacy. The majority of the content on the site is proprietary, except for the popular web guide which links to other relevant sites on the Internet.

Scholastic.com's free classroom resources are designed to attract teachers to the site. Given the company's access to parents, primarily through their children's teachers, we believe the company could capture a meaningful following of parents as well. To monetize this traffic, we expect the company to offer e-commerce and online professional development services. Scholastic already has a significant business in the supplemental materials field, and the web resources complement that. We expect that the company could package school modules for teachers, for example, with free content and a related "web shopping list" covering topics from Black History Month to Plate Tectonics.

Founded: Scholastic in 1922, Online endeavor on AOL in 1993, Relauched online service on World Wide World in 1996

Headquartered: New York, NY

Public/Private: Public (Nasdaq: SCHL)

URL: scholastic.com

Claim to Fame: World recognized brands such as the Magic School Bus, Clifford The Big Red Dog®. and Goosebumps, The Baby-sitter's Club

Coolest Feature on the Website: Cool links to information and resources for kids, parents and teachers

1999A Revenues: $1.3 B

Market Value: $755 M (5/15/00)

Revenue Components:

  Content: X

  Commerce: X

  Advertising: X

  Service: X

  Other:

Network Effect: Yes

Hub/Portal Strategy: Yes

Metrics to look for:
Number of users/students

Harcourt, Inc.

Harcourt, Inc., owned by Harcourt General, is a leading, global multiple-media learning company providing educational, training and assessment products and services to classroom, corporate, professional and consumer markets. It consists of four major sections: K-12 Education, Higher Education, Corporate and Professional Services, and Worldwide Scientific, Technical and Medical Group.

K-12 Education: The companies in the K-12 Education Group work together with other Harcourt businesses to produce content, and develop innovative technology-based education tools. Here is a sample of some of these companies:

Harcourt School Publishers is a publisher of print- and technology-based instructional materials for students in kindergarten through grade eight.

Holt, Rinehart and Winston is a publisher of print- and technology-based educational materials in secondary education. .Steck-Vaughn is one of the world's leading supplemental educational publishers for pre-kindergarten through adult learners.

Harcourt Religion Publishers is a publisher of catechetical materials. Harcourt Trade Publishers publishes distinguished fiction and non-fiction for children and adults.

In addition, Harcourt, Inc. invested $17 million in the FamilyEducation Network. Harcourt is a primary source of educational, training and assessment content available through FEN. Other prominent partners of FEN include America Online, AT&T, NBC, and educational advocacy groups such as the National PTA, the American Association of School Administrators and the National Schol Boards Foundation.

Higher Education: The companies work to bring technology-based learning programs to campuses, homes, and corporations. Here is a sample of some of these companies:

Harcourt College Publishers is a publisher of textbooks and technology-based instructional materials for post-secondary markets.

Harcourt Learning Direct is the world's largest distance learning organization, enrolling more than 400,000 students each year.

Archipelago Productions is a multimedia publisher dedicated to bringing technology-delivered quality content and interactive learning to students.

Harcourt Educational Measurement develops assessments and related support services to help measure educational performance.

Harcourt Higher Education develops technology-based accredited courses and degree programs that will be delivered directly to the consumer (adult learners/non-traditional students) as well as campus-based and corporate markets.

Harcourt Professional Publishing is a provider of multimedia educational resources for the professional and graduate level test preparation market, including the BAR/BRI review course for law students, and ECAS for human resources.

Harcourt Corporate and Professional Services: The companies collaborate to provide integrated training and assessment solutions for corporate and professional people.

Assessment Systems, Inc. (ASI) is a provider of computer-based tests for the professional and regulatory licensing and credentialing markets and the corporate pre-employment testing market.

Drake Beam Morin (DBM) is a career consulting and outplacement services firm with more than 200 offices in 40 countries around the world. To further enhance career development DBM now offers streaming audio versions of the Knowledge Communications programs over the Internet. The DBM Knowledge Communications Program Library contains courses on soft skills such as communication and customer service as well as industry specific skills.

Knowledge Communication is a provider of technology-based professional development and business skills training.

NETg is a major global provider of technology-based training for information technology professionals. NETg has agreements with eMind and click2learn.com to provide strategic content.

The Psychological Corporation is the nation's largest for-profit publisher of products and services for educational and psychological assessment.

Worldwide Scientific, Technical and Medical Group: The companies provide content across virtually every major discipline, including cardiology, oncology, nursing, and a number of growing biomedical specialties.

Harcourt Health Sciences is the world's largest producer of print- and technology-enabled information for the medical, nursing, and health fields. Brands include W.B. Saunders, Mosby, Inc., and Churchill Livingstone.

Academic Press is one of the largest global publishers, in print and electronic formats, of scientific information.

Harcourt International is the global distributor of the Company's content, with offices on five continents.

MD Consult is an online medical information service with nearly 100,000 subscribers that is utilized by health science professionals.

Merrill Lynch

Founded: Harcourt General founded in 1922

Headquartered: Chestnut Hill, Massachusetts

Public/Private: Part of Harcourt General (NYSE: H)

URL: www.harcourt.com

Claim to Fame: World recognized educational publishing brand

Key Investors: Wholly owned by Harcourt General

Key Partners: FamilyEducation Network, TakeAClass.com, Zvia

1999A Revenue: $2.1B*

2000E Revenue: $2.3B*

Market Value: $1.9B (5/15/00)

Revenue Components:

  Content: X

  Commerce: X

  Advertising: X

  Service: X

  Other:

Network Effect: Yes

Hub/Portal Strategy: Yes

Metrics to look for:
Number of users/students
Number of clients

*Revenue figures for FY ending Oct. 31.

Select Company Profiles in this Section

Index of K-12 Companies

Content	Ticker	Content (continued)	Ticker	Commerce (continued)	Ticker
School Directed		**Kids-Directed**		**Tutoring & Test Prep. Services**	
AbleMedia.com	Private	BennySmart	Private	Achieva	Private
APEX Online Learning	Private	Cartoon Network	Private	EdPoint	Private
bigchalk.com	Private	Children's Television Workshop	Private	EducationTalk	Private
Bonus.com	Private	Crayon Crawler	Private	e-Tutor	Private
Boxer Learning	Private	CyberKids / CyberTeens	Private	FastWeb	Private
ChildU	Private	Disney.com	DIS	GlobalTutor.com	Private
Class.com	Private	Headbone Interactive	Private	Homework Central	Private
Classroom Connect	Private	JuniorNet	Private	HomeworkHelp.com	Private
Discovery Kids	Private	KOLA	Private	Kaplan (e-score)	Private
ePlay	Private	MaMaMedia	Private	Princeton Review (Homeroom.com)	Private
Family.com	Private	Nickelodeon (Nick Jr. & Noggin)	Private	SuperTutor	Private
FamilyEducation Company	Private	**Parent Directed**		TopClass	Private
FunBrain.com	Private	Parent Soup	Private	TopTutor	Private
FunSchool.com	Private	Parent Time	Private	Tutor.com	Private
HomeworkCentral	Private	Family Education Company	Private	Tutor.net	Private
i-station.com	Private	**Community**		**Systems / Infrastructure / Tools**	
Kaplan (e-score)	WPO	**School Oriented**		**Infrastructure**	
Knowledge Universe (KidsEdge)	Private	American School Directory	Private	ACTV	Private
Learning Outfitters	Private	ASD	Private	Blackboard.com	Private
Lightspan	LSPN	bigchalk.com	Private	e-chalk	Private
MainXChange	Private	Classroom Connect	Private	ecollege.com	ECLG
MathForum	Private	Copernicus.net	Private	Edutest	Private
Mathsoft	Private	eduventions	Private	ETS	Private
N2H2 (Searchopolis)	NTWO	e-Pals	Private	N2H2	NTWO
NCS (Ed. Structures, Novanet)	NLCS	FamilyEducation Company	Private	The Learning Company	TLC
NetLibrary	Private	Knowledge Universe (KidsEdge)	Private	School Specialty	SCHS
NYT Learning Network	Private	KOZ	Private	Gemstar (Rocketbook)	Private
Newsbank	Private	Lightspan (Page One)	LSPN	HiFusion	Private
On Line Class	Private	NCS (Parent Connect)	NLCS	HighWired.com	Private
Oz New Media	Private	Netcenter (KidZone)	Private	Into Networks	Private
PBS Online	Private	NSchools	Private	Kaplan (e-score)	WPO
Pearson (CCCNet)	Private	School City	Private	LearningStation.com	Private
Princeton Review (Homeroom.com)	Private	Scientific Learning (Brainconnection.com	SCIL	MC2 Learning Systems	Private
Riverdeep (Logal)	RVDP	Teachers.net	Private	NetSchools	Private
Scholastic	SCHL	Thinkwave	Private	Princeton Review (Homeroom.com)	Private
Scientific Learning	SCIL	ZapMe!	IZAP	Testmaster	Private
TRO Learning (Plato)	Private	**Teen Oriented**		WebTV	Private
WRC Media (Ripplewood Holdings)	Private	Alfy.com	Private	ZapMe!	IZAP
ZapMe!	IZAP	Alloy.com	Private	**School Enterprise Software**	
Encyclopedias:		Bolt.com	Private	Chancery Software LTD	Private
Microsoft Encarta.com	MSFT	Freezone.com	Private	Edventions, Inc.	Private
Brittanica.com	Private	SurfMonkey.com	Private	i-mind	Private
Compton's	Private	Teens.com	Private	National Computer Systems	NLCS
Groliers	Private	Zeeks.com	Private	nSchools	Private
Textbook Publishers:		**Commerce**		PowerSchool	Private
Harcourt Brace	Private	**Products**		Project ACHIEVE	Private
Houghton Mifflin	Private	Amazon.com	AMZN	SchoolNet	Private
McGraw Hill	Private	epylon.com	Private	Thinkwave	Private
Pearson	Private	e-Toys	ETYS	**Online Fundraisers**	
Educational Software Companies:		FamilyWonder.com	Private	e-Scrip	Private
Compass Learning	Private	Games2Learn	Private	SchoolPop	Private
The Learning Company	TLC	JL Hammett	Private	YourSchoolShop.com	Private
Knowledge Adventure	Private	KB Toys (brainplay.com)	Private	**e-Wallets**	
Teacher Training		NoodleKidoodle	NKID	DoughNet	Private
Advantage Learning (Gen21)	ALSI	School Specialty	SCHS	iCanBuy	Private
Apple Computer (Staff Development Center	APPL	Simplexis.com	Private	RocketCash	Private
Blackboard.com (targeting engine to school	Private	SmarterKids.com	SKDS		
Classroom Connect (Connected University)	Private	ToySmart	Private		
Knowledge Universe (Teacher Universe)	Private	ZainyBrainy	ZANY		
wwwrrr.com	Private				

Source: Merrill Lynch Global Growth Group

25. Appendix I

Sizing the opportunity in this market is not a simple task. The following table describes the analysis and sources we consulted to derive our estimate of a $7 billion market in 2003.

K-12 Learning Opportunity

Segment	Note	Addressable Market	Online Market (1999(	Growth Rate	Market in 2003
Portals & Hubs	(a)	$50 million	$50 million	100%	$800 million
Content	(b)	$4 billion	$20 million	40%	$80 million
E-Commerce	(c)	$657 billion	$175 million	120%	$4 billion
Infrastructure	(d)	$7 billion	$1 billion	20%	$2 billion
Ancillary Services	(e)	$5 billion	$10 million	50%	$50 million
Total		$673.5 billion	$1.3 billion	80%	$6.9 billion

(a) Merrill Lynch estimate based on bottoms up analysis of industry. Includes non-content, non-ecommerce related revenues from both teen-oriented and school-oriented community sites, including Alloy.com, Bolt.com Snowball.com .FamilEducation Company, Lightspan.com, etc. Clearly, the opportunity to add content and commerce to a portal or hub greatly increases the revenue opportunity for companies in this arena.

(b) Merrill Lynch estimate based on bottoms-up analysis of industry. Cowles-Simba estimated in its report "Electronic Media for the School Market: 1999-00 Review, Trends & Forecast" that online curriculum sales would grow from an actual $20 million in the 1999 school year (a number our analysis corroborates) to $35 million by 2002, a CAGR of 20%. We believe this growth rate is far too low, a as we expect to see significant conversion of software from a CD-ROM format to an online format. Hence our growth rate of 40%, which we would view as conservative. Cowles-Simba, for example, estimates that "standalone software" and "comprehensive courseware" purchases by schools will cumulatively reach $1.4 billion by 2002, growing at a 23% CAGR. We would anticipate that a portion of these estimated sales will in fact be online sales based on shifts we see at these same software publishers to put their content online and shift toward subscription and ASP business models. The advancing rate of bandwidth will also affect this shift.

(c) Merrill Lynch estimates, and 1999 research from Jupiter Communications and Forrester Research. Includes all online spending by kids and teens, as estimated by Jupiter Communications in 1999 for 1999 and 2002. Also includes spending by parents on educational products and services, based on a bottoms up analysis of industry. Includes all revenues for SmarterKids.com and a portion of revenues from E-Toys, Amazon.com, and other toy and book sellers. Growth rate envisions growth in services, particularly tutoring and test preparation, but is primarily based on the average growth rate for business-to-consumer e-commerce from Forrester Research (Nov.1999). School e-commerce based on bottoms up analysis of industry, and growth rates of business-to-business e-commerce from Forrester Research (Nov. 1999).

(d) QED. February 2000 estimate of school technology spending. Represents all spending on internet infrastructure. Includes networking hardware, services and ancillary services.

(e) Merrill Lynch estimate based on bottoms-up analysis of industry.

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