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Megatrends

"I don't set trends. I just find out what they are and exploit them."

—Dick Clark, *American Bandstand*

In essence, megatrends are powerful technological, economic, and social forces that develop from a groundswell (early adoption), move into the mainstream (mass market), and disrupt the status quo (mature market), driving change, productivity, and ultimately growth opportunities for companies, industries, and entire economies.

Megatrends play a key role in how social, economic, technological, and political changes take hold, and as we look backward through history, their effects are easily seen. In real time, however, megatrends tend to go underappreciated. The nature of megatrends is that they are relatively slow to develop, driven by bottom-up, "local" events that slowly gain in critical mass until they come to define large-scale and pervasive change.

In his 1982 book *Megatrends,* John Naisbitt identified several trends that were in various stages of restructuring an industrial economy that was regionally concentrated and national in focus, with corporate America best characterized by industrial giants and extensive management hierarchies. Technological improvements were often feared, particularly by workers and unions. Politically, power remained concentrated, polarized by business, labor, and social issues, and focused on short-term solutions.

In the midst of this restructuring, which the consensus had yet to appreciate and fewer still wanted to embrace, Naisbitt anticipated what

most feared: the continued decline of manufacturing and the rise of the information economy.

The trends he identified more than 20 years ago have steadily progressed, with many information technology companies as recognizable and mature today as industrial bellwethers were then. Aside from identifying the trends themselves, one of Naisbitt's key insights was that the most powerful of the trends occurred independently, across geographies and throughout communities, only later becoming a large collective trend.

What Naisbitt was able cull from these seemingly disparate trends were common factors, or megatrends, that were in effect catalyzing the restructuring of the past, present, and probable future.

Megatrends continue to play just as important a role today as they have over the past 10, 20, and 50 years. What is changing are the smaller but related trends resulting from today's more visible megatrends. For example, while globalization is clearly not a new trend, in combination with greater geopolitical openness, economic development, and more robust information and communications technologies, the pace of globalization, trade, and outsourcing has rapidly accelerated.

Likewise, with the explosion in the number of products and services to address a growing number of global markets, the value of brands is growing exponentially, as companies find it a necessity to differentiate their products and defend their markets with the value embedded within their brands.

Information technologies have been around long enough for IT companies to now be mature, although the application of IT continues to rapidly broaden beyond traditional business investments and consumer electronics, spurring growth in new areas of biotechnology and nanotechnology as well as consumer and business services.

Identifying new trends is always difficult. As the venture capital community notes, by the time something becomes a trend, it is too late for many investors to reap benefits. That said, only by continuing to look for the forces that shape the realms of businesses and consumers can we hope to understand and capitalize on emerging growth markets in today's global economy.

Within these megatrends are themes that become increasingly pervasive through economies, though they generally remain unrecognized

until they are firmly considered the status quo. Below we augment the themes first posited by Naisbitt, which represent recurring themes across the economic and social megatrends currently at work.

EVOLUTION OF MEGATREND THEMES

1960-80	1980-2000	2000-20
Industrial society	Information society	Knowledge economy
Forced technology	High tech/high touch	Internet/invisible computing
National economy	World economy	Globalization/economic clusters
Short-term	Long-term	Convergence
Centralization	Decentralization	Outsourcing
Institutional help	Self-help	Demographics
Hierarchies	Networking	Consolidation
Either/or	Multiple options	Brands
Representative democracy	Participatory democracy	Feedback democracy

Source: ThinkEquity Partners, John Naisbitt, *Megatrends.*

As I mentioned earlier, I have identified eight megatrends that I feel are the key drivers for waves of opportunity. The knowledge economy, demographics, globalization, the Internet, and outsourcing will drive market growth and competition, while convergence, consolidation, and brands will be the key enablers of what become successful products, technologies, companies, and industries.

Those companies best able to recognize and harness the growth opportunities made available by these megatrends will be those that first capitalize on, then extend their lead from, the competition; recognize the rewards of being an early mover; and leverage productivity improvements for the benefit of their customers and their own growth potential.

In the coming years, these megatrends, as well as many new ones, will continue to create the largest market opportunities, providing the fundamental catalysts to growing markets through their influence on consumer behavior and business processes, serving as the building blocks for the introduction of new products and services, as well as creating growth opportunities within more mature markets.

My view of current and future trends is that they likely will be extensions of past megatrends, though the pace of change will be more accelerated, rapidly capitalizing on cumulative advancements in technology, demographic shifts, changing consumer preferences, and improved business efficiencies. The time it takes to innovate and commercialize to meet current and latent demand will continue to collapse toward real time.

In my mission to find the stars of tomorrow, I rely heavily on understanding the megatrends that are creating significant market growth opportunities. In the years ahead, I anticipate that the dynamic changes that have taken place during the past bull market will serve as stepping stones for future growth opportunities.

→ MEGATREND 1: THE KNOWLEDGE ECONOMY

"If investments in factories were the most important investments in the Industrial Age, the most important investments in an Information Age are surely investments in the human brain."

—LAWRENCE SUMMERS,
FORMER PRESIDENT OF HARVARD UNIVERSITY

Mind Over Matter: Human Capital in the Knowledge Economy

Throughout history, whether in preindustrial or industrial times, great nations developed based on their access to physical resources or their ability to surmount physical barriers. England and Spain crossed the oceans, Germany turned coal and iron into steel, and the United States

exploited a wealth of agricultural and industrial resources to become the world's breadbasket and industrial superpower.

The advent of the personal computer, the Internet, and the electronic delivery of information has transformed the world from a manufacturing, physically based economy to an electronic, knowledge-based economy. Whereas the resources of the physically based economy were coal, oil, and steel, the resources of the new knowledge-based economy are brainpower and the ability to acquire, deliver, and process information effectively.

THE 10 FASTEST-GROWING OCCUPATIONS IN THE UNITED STATES, 2004–14

OCCUPATION	EMPLOYMENT ('000s)		CHANGE		MOST SIGNIFICANT SOURCE OF POSTSECONDARY EDUCATION OR TRAINING
	2004	2014 (EST.)	NUMBER	PERCENTAGE	
Home health aides	624	974	350	56%	Short-term on-the-job training
Network systems and data communications analysts	231	357	126	55%	Bachelor's degree program
Medical assistants	387	589	202	52%	Moderate on-the-job training
Physician assistants	62	93	31	50%	Bachelor's degree program
Computer software engineers, applications	460	682	222	48%	Bachelor's degree program
Physical therapy assistants	59	85	26	44%	Associate's degree program
Dental hygienists	158	226	68	43%	Associate's degree program
Computer software engineers, systems software	340	486	146	43%	Bachelor's degree program
Dental assistants	267	382	115	43%	Moderate on-the-job training
Personal and home care aides	701	998	297	42%	Short-term on-the-job training

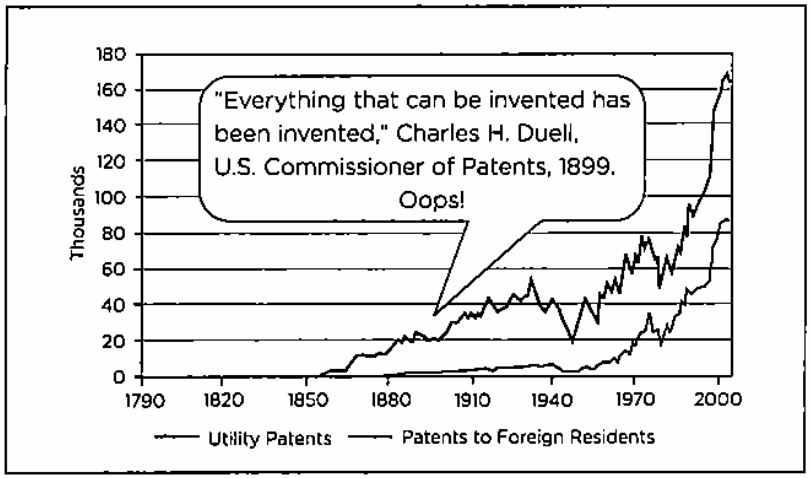
Source: U.S. Census Bureau.

With some of the greatest developments in new technologies arriving late in the 20th century, widespread optimism surrounding the 21st century has led futurists to predict a period of rapid growth of the magnitude of the Industrial Revolution, if not greater, with the advent of the knowledge-based economy. In this economy, knowledge workers form the cornerstones of successful businesses, emerging industries, and economic growth. In this new environment, however, the labor force is presented with an unprecedented challenge as it must continuously upgrade its skills to keep pace with innovation as companies increase their R&D expenditures. Of the 10 fastest-growing occupations over the next 10 years, 6 require postsecondary education and all are knowledge-

based jobs. Even more telling, the number of patents issued in the United States per year nearly doubled over the past 10 years, and the pace is accelerating.

Today's economy is a knowledge economy based on brainpower, ideas, and entrepreneurship. Technology is the driver of today's growth economy, and human capital is its fuel. The knowledge economy is people-centric, having evolved from being manufacturing-intensive to being labor-extensive. Fundamental to success in the new economy is how companies obtain, train, and retain knowledge workers.

Patents Granted in the United States



Source: U.S. Patent Office.

Ubiquitous and untethered PCs and high-speed bandwidth will facilitate access to knowledge anytime, anywhere. The Internet democratizes knowledge, increases access to it, lowers its cost, and ultimately improves its quality. I believe that combining the richness of an offline experience (such as a one-on-one conversation with a professor) and the reach that only the Internet provides creates a network effect that allows scalable knowledge enterprises to be born. Moreover, I see significant potential advantages that offline operators can achieve by leveraging their experience and brand online. For example, Target has combined its

position as the merchandiser of affordable forward fashions with its white-hot brand and has created an online powerhouse.

The information revolution that began with the birth of the PC has evolved into the knowledge revolution. E-commerce is to the knowledge revolution what the railroads were to the Industrial Revolution. I think enterprises building "knowledge tracks," or infrastructure, into the corporate market are poised to enjoy explosive growth.

In the knowledge economy, education is the fuel that powers new enterprises. Integrating quality educational content with testing/assessment and certification programs is the new education paradigm for the 21st century. Assessment is the currency with which all skills are valued. The four engines of the new economy—computers, telecommunications, health care, and instrumentation—employ approximately 50 knowledge workers per 100 employees and are growing. Employment in these technology-intensive industries is rising three to six times as fast as economy-wide job growth.

The Internet is all about disproportionate gains to the leaders of a category. By focusing on knowledge enterprises that contain the four Ps and other key differentiating factors, it is generally possible to distinguish the Yahoo!s from the yahoos and gain outsized investment returns from outsized opportunities.

In today's world, knowledge is making the difference not only in how well an individual does, but also in how well a company does and, for that matter, in how well a country does. The future possibilities of the knowledge economy look both exciting and, at the same time, daunting. Education as a proxy for knowledge shows that the pay gap between somebody who has a high school education and a person with a college education has more then doubled in the past 20 years—strong evidence of the realities of the knowledge marketplace we are in.

In today's knowledge-based global marketplace, human capital has replaced physical capital as the source of competitive advantage. A key result of the confluence of technology and the Internet economy is the need for better and smarter workers. The reality of a 5% unemployment rate in the United States, the "free agent" mindset of the most talented workers, and the fact that only 24% of the U.S. adult population has a college degree is making this task more difficult than ever before.

E-commerce forces even traditional businesses to operate at Internet speed, with time-to-competency now a major factor in determining the competitiveness of all companies.

Fast forward to 2011. Unfortunately, the supply of students coming

NEW VIEW OF HUMAN CAPITAL AND LEARNING IN THE KNOWLEDGE-BASED ECONOMY

INDUSTRIAL ECONOMY	KNOWLEDGE ECONOMY
Wages	Ownership/options
Four-year degree	Forty-year degree
Learning as cost center	Learning as number-one source of competitive advantage
Help wanted	Talent needed
Learner mobility	Content mobility
Distance education	Distributed learning
Résumé	Competence
Employee	Talent
Physical capital	Human capital
One size fits all	Tailored programs
Geographic institutions	Brand-name universities and celebrity professors
Just-in-case	Just-in-time

Source: Michael Moe, Merrill Lynch.

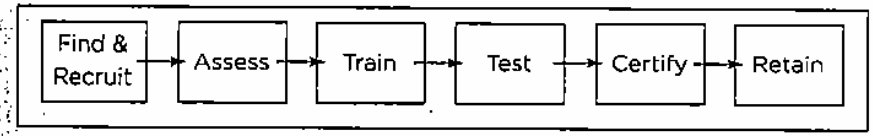
out of America's schools doesn't promise much relief. In a recent international comparison, U.S. twelfth-graders finished dead last and next to last in the key new-economy subjects of math and science, respectively.

Hence, the fundamental and massive problem of global competitiveness and obtaining knowledge workers reaches all the way down to the K–12 level. As the human capital demand funnel is triggered, global corporations need to more effectively recruit knowledge workers, provide lifelong learning for their employees, and create supply for the future by improving the K–12 education system. The Internet acts as a major enabler linking corporations to people, providing management systems, anytime/anywhere learning, and a catalyst to help revolutionize a failing primary education system.

The truly revolutionary impact of the Internet is just beginning to be felt. Historically, geographic distance mattered. It mattered to people seeking goods and services. It mattered for teachers and their students. With the Internet came the death of distance and the rapid reshaping of the world into one marketplace.

At no previous time has human capital been so important. This means that finding, developing, and retaining knowledge workers will be mission-critical functions—and high-growth sectors—in the new economy. Accordingly, I look at the continuum of human capital solutions holistically—a knowledge web—and believe the most important companies will have an appreciation for and/or involvement in a comprehensive solution. I believe that those companies that can link different elements of the human capital value chain—stretching from recruiting to assessment to training and, finally, retention—while leveraging the Internet's capabilities to deliver a total solution will be the big winners.

People Power at the Center of the Knowledge Economy: The Human Capital Value Chain



Source: Michael Moe, Merrill Lynch.

Democratizing Knowledge

The Internet creates one economy and one market. As large as the online higher education market (consisting of colleges and universities) is in the United States, the global opportunity is significantly greater. Unlike in the United States, where postsecondary education is relatively available, access to world-class postsecondary institutions in many parts of the world is limited. Currently, there are about 84 million students enrolled in higher education worldwide. Global demand for higher education is forecasted to reach 160 million by 2025. If online learning captures even half of this growth, there will be 40 million students for online education.

Widening Pay Gap as Knowledge Workers Are Rewarded

A company's earning power rises due to its return on human capital. Companies, in turn, must reward employees with "productivity wages" or risk losing them to competitors. When this happens, the earning power of knowledge employees rises in the job market. Those without the necessary education, however, do not reap similar benefits. Accordingly, we have seen the income gap between those with a bachelor's or higher degree and those with just a high school education widen significantly, and I expect this trend to continue as long as the marketplace rewards knowledge-intensive companies.

Moreover, the computer has replaced many "left-brain," task-oriented jobs as it performs these functions faster, cheaper, and better than humans. For example, now more often than not, phone companies use voice recognition technology provided by companies such as Tellme Networks to provide the number you seek. A significant challenge and opportunity for corporations lies in creating knowledge workers from today's existing labor pool.

Human Capital Drives Market Valuations of Knowledge Companies

Growth companies today are dependent on human capital. Those companies that have created growth by leveraging their "off-balance-sheet" human capital assets have, in turn, seen their share prices rewarded with higher valuations. It is illustrative to compare valuations of the largest 10 companies in the industrial economy with those of the largest 10 companies in the knowledge economy.

LARGEST COMPANIES BY MARKET VALUE, 1980, 2005

1980	PRICE-TO-BOOK
IBM	2.4x
AT&T	0.7x
Exxon	1.4x
Schlumberger	6.9x
Mobil	1.3x
Chevron	1.5x
Atlantic Richfield	2.1x
General Electric	1.7x
General Motors	0.8x
Royal Dutch Petroleum	0.8x
Median price-to-book	1.5x

2005	PRICE-TO-BOOK
General Electric	3.3x
Exxon Mobil	3.2x
Microsoft	5.8x
Citigroup	2.2x
Wal-Mart Stores	4.0x
Bank of America	1.8x
Johnson & Johnson	4.9x
American International Group	2.0x
Procter & Gamble	13.3x
Pfizer	2.6x
Median price-to-book	3.3x

Source: FactSet, ThinkEquity Partners.

Most telling, as I mentioned earlier, the wage gap between someone with a high school education versus a college education increased from 50% in 1980 to 111% in 2005. This fact shows that corporate focus has shifted to human capital from financial and physical capital. Given the intangible nature of human capital, it simply cannot be "line-itemized" on a balance sheet as tangible assets are. I believe rising price-to-book ratios reflect, in large part, the fact that the productive assets driving growth are increasingly off-balance-sheet assets.

As the rise of the knowledge economy accelerates and knowledge employment within industries experiences exceptional growth, human capital liquidity (knowledge workers efficiently seeking and being sought for knowledge jobs) will become an increasingly important factor for employers. We expect that this will continue to push up the wage gap between the highly educated and the less educated. In addition to competitive compensation, I anticipate that growing human capital liquidity will also encourage companies to provide other benefits such as child care and specialized education and training—benefits that increase worker loyalty, encouraging them to apply their creativity and brainpower to growing these companies.

Growth Jobs Are Knowledge and Service Jobs

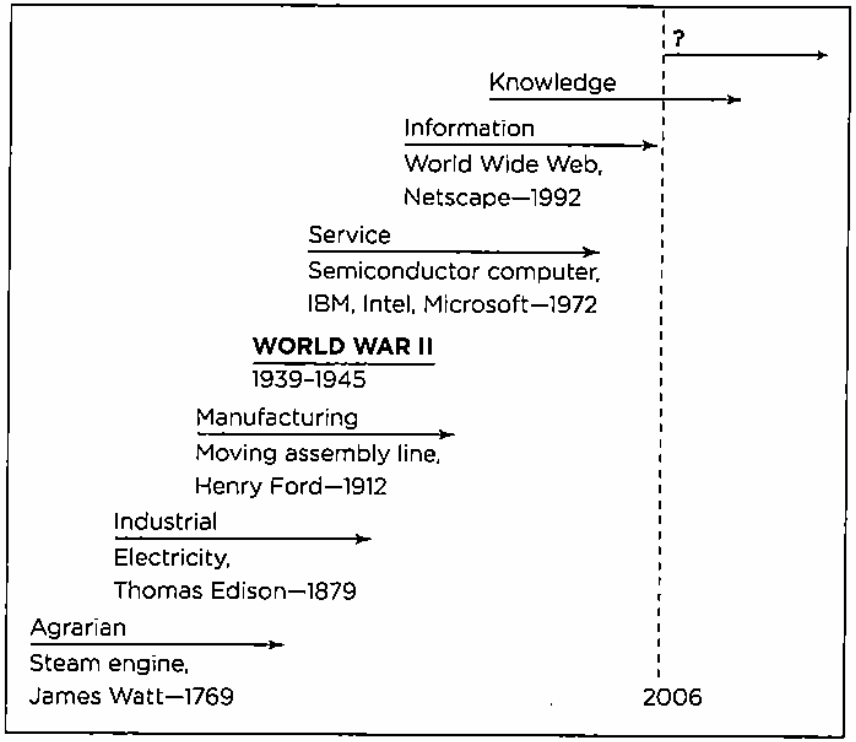
"The killer app for the next decade is talent acquisition and retention."
—JOHN DOERR

To understand the future, it's critical to understand the past. In the 1780s, when the United States was formed, we had an agrarian economy in which 90% of all jobs were related to farming. By 1850, 49% of all jobs were in farming as the Industrial Revolution began to have its impact. By 1900, only 39% of jobs were in farming, just 3% of the adult population in the United States had a college degree, and only 15% had a high school degree. Today, less than 2% of U.S. labor force is in farming, 24% of the population has a college degree, and 85% has a high school degree.

During the Industrial Revolution, the labor force was equipped with the skills to enter into manufacturing-sector employment, and the assembly line merely required the theory of work organization to be put into practice. Workers were required to do no more than perform specific tasks and later operate specialized machinery that performed the actual work. Nonetheless, the changes that this innovation brought were enormous. By 1950, 40% of the U.S. workforce was employed in the manufacturing sector, and this increased productivity 50-fold. Workers accrued the majority of the benefits—half in the form of sharply reduced working hours, and the other half in a 25-fold increase in real wages.

The rise of knowledge workers (who succeeded industrial workers) began 50 years ago with roots in the GI Bill, the "Management Revolution," and the rise of the service sector. Since 1950, employment in the

U.S. Economic Development



Source: ThinkEquity Partners.

manufacturing sector has fallen from nearly 40% of total employment to less than 10% currently, while service sector employment has risen from less than 14% to more than 76%—essentially flip-flopping from where it had been in 1950. During this period, demand for an educated workforce grew. Increased competition from abroad (particularly from emerging economic regions) has resulted in continued substitution in the U.S. manufacturing sector away from workers and toward technology, increasing the productivity of the remaining workers. Domestically, the service sector has attracted the more highly skilled workers away from the manufacturing sector. Low-skilled factory jobs have been absorbed by less-developed countries.

Just as gains in manufacturing productivity, greater access to higher education, and an affluent middle class fueled the transition from a manufacturing to a service-based economy, the extensive adoption of

information technology is now creating the need for a highly skilled knowledge-based economy. While service sector job growth has been increasing overall, the more technically intensive industries have experienced the most rapid growth. Knowledge jobs such as IT, health, and business services, on the other hand, are growing three to six times as fast as jobs economy-wide.

Understanding how a company fits into the knowledge economy and what it's doing to obtain, train, and retain the smartest people in the marketplace is critical for investing in future stars.

STAR GAZER

MICHAEL MILKEN

financier of innovation and entrepreneurs

Michael Milken is arguably the most influential financier of the 20th century, having almost single-handedly created the market for high-yield bonds in the 1970s and 1980s. Milken "democratized" access to capital for innovative entrepreneurs who literally created new industries. Milken founded a number of companies related to education and is currently a principal—along with Lowell Milken and Steve Green—in Knowledge Universe Education, the world's largest operator of early childhood education centers. In 2003, Milken started Washington, D.C.–based FasterCures, which seeks greater efficiency in researching all serious diseases. In a 2004 cover story, Fortune magazine called him "the man who changed medicine." He also founded the Milken Family Foundation in 1982 to support medical research and education. I had a chance to sit down with Michael Milken, and here are some highlights from our talk.

Michael Moe: Mike, you've been an innovator for nearly 40 years in finance, education, healthcare and wellness. How do you decide where you're going to focus your energy for opportunities?

Michael Milken: I try at least one, two times a year just to sit down and think about what might happen in particular areas. So, at the end of 2005, I literally took two days when I didn't take any phone calls. My wife, Laurie, and I went away and just read and thought. From 1970 to '78, I'd had this enormous luxury of a 2½-hour commute in each direction, or 5 hours a day when no one actually spoke to me, so I could reflect and think. Now I don't have that opportunity as often, so I try to just block everything out and decide what really are the issues of society to deal with. I've been a strong believer that the best opportunities come where I can identify the challenges and the needs of society. It's a trite line, "doing good is good business," but it's true.

As I think about the decisions I've made over time, it was really after the Watts riot that I decided that I needed to work in the field of finance and that access to capital was a civil right. It took a long time and it wasn't an easy process to try to innovate to get people to understand that the individual that you're financing is the key in that decision making. You're going to finance the future; not finance the past.

Today when I sit down and think about things, I'm concerned that health care is the largest part of the U.S. economy and potentially the largest part of all economies worldwide. How to significantly reduce that cost is one of the defining issues in society. Recall the case of polio. People had estimated the solution to polio was going to cost $100 billion, and we got it down to $100 million—with a vaccine.

Michael Moe: *What are the most important areas today?*

Michael Milken: Two elements in the health-care area have been driving me in the last 12 or 13 years. One, how do we accelerate science? We decided to form FasterCures under the Milken Institute. Two, how do we make things happen faster? It's no longer the technology that's the inhibiting factor. It is the infrastructure. It's the processes. We concluded that we're using 19th- and 20th-century ways of approaching medical problems and not using 21st-century data-collection technology that's available to us.

We're really focused in this effort on accelerating the cures for life-threatening diseases by changing how the processes work, or changing legislation or dealing with things like HIPAA requirements or reporting requirements, so we can get more out of the data. We can move faster in medical research because of the dramatic reduction in telecommunication costs and storage costs and dramatic increase in the speed of computing capabilities. If you can figure out how to do that, there are large economic benefits for business, and tremendous benefits to society in increasing the value and the quality of life. I would say it's not only a passion. It's something I think will make a great contribution.

Michael Moe: *How do you go about analyzing all this?*

Michael Milken: The basic concept that permeates my thinking is that human capital—the skills, education, and experience of individuals—is the primary asset on our planet. Depending on whose estimates you use, it makes up 75 to 95% of the assets.

There are two things that empower the increase in the value of that asset. One is medical, increasing the quality and length of life. And two is education that increases the productivity of that life. Both of these were enhanced by the financial revolution that allowed capital to flow to individuals with ability.

which I believe has occurred in the United States and is slowly occurring throughout the world. With that as my basic premise, trying to figure out how to change the perception of medical research, or collection of medical data, or dissemination of medical data obviously would serve that effort to increase the quality and length of life.

As for education, I would say I'm using finance as a benchmark of what can be done. In the 1970s, my firm was probably the first to computerize our trading records and data, which gave everyone access to information so they could make better decisions. Today, probably 30% of the most valuable companies in the world are in the financial service industry. I believe this industry, more than any other, has used technology to analyze and substantially reduce costs.

The elimination of paper and the ability to increase the velocity of money is an enormous benefit of deploying technology. The first day I worked on Wall Street, my first assignment was to eliminate the movement of the stock certificates and the bond certificates, which was potentially going to bankrupt the Wall Street firms in the late 1960s. The sheer fact that you wouldn't be paid until you had a physical delivery of a certificate from Missoula, Montana, was essentially bringing the financial system to a halt. Today there is a central depository, you have electronic transfers, and it's no different from our going to the bank and withdrawing money or depositing money. The whole method of finance has changed.

Michael Moe: *How does this apply to health care?*

Michael Milken: When we're looking at medical today, we're thinking the same way. If we can eliminate paperwork, research

will move faster. Medical is motivated to deploy technology more than education is. We think about education the same way. We want to make it available to everyone worldwide. I think it all stems from the premise that the most productive thing one can do is enhance the quality and length of an individual's life and then give that individual all the tools he needs to be the most productive he can be. And that takes the form of education. That's why I've moved from finance to health care and education.

Michael Moe: *You helped to create huge industries and companies, such as MCI in telecommunications and Turner Broadcasting in cable, from the very, early days. What did you look for in a company that you were going to get involved with, and how important were the people to that?*

Michael Milken: When I think about financing or investing in a company, I first step back and focus on the industry. What is the industry? Where is it going? What's its role? Who are the competitors? What effect is technology going to have on that industry? Take the cellular industry, for example. Growing up in the '50s and the '60s as a *Star Trek* fan, I'd see Scotty being told by Captain Kirk to "beam" him up, so it just seemed to me that there could be a wireless device with the basic technology so that people could speak to each other and could travel through the air. Why would anyone ever want to have a phone hooked into a wall if you could do it wirelessly? There's the concept that your communication device is where you are, not that you go to a communication device to communicate. I was watching an old James Bond movie with my daughter, and when Bond finally had some information, he was rushing around trying to find a phone booth to make a call from, as I recall. She thought

it was the craziest thing she ever saw. Why is he driving around? Why doesn't he just take out his cell phone?

If you have an idea of who is going to succeed and can identify the visionary thinkers such as Craig McCaw or Ted Turner, you look for a product that you think will be well accepted and individuals who can accelerate the technology and the concept of that technology—individuals who can manage a large ramp-up particularly such as Bill McGowan. I would say it's no different than with Steve Wynn. He limped into my office. I think he had a broken leg at the time. He was in his midthirties, I was in my early thirties, and I saw his passion, his ideas, his creativity. The concept was an adult Disneyland, creating structures, environments that adults would love to spend time in, whether it was due to the beauty of a hotel or restaurant, the entertainment, or the sheer structure of the building. And what I saw was an industry in gaming that was more of a sports rink for individuals where they thought they could actually win.

Financially backing a person such as Steve Wynn, who had the passion and ability to create structures all wrapped into one, was a tremendous opportunity for me and a very well-wrapped way of creating the development of an industry that was so misunderstood by public investors at the time.

Michael Moe: *It all goes back to the people, right?*

Michael Milken: Whether it is Steve Jobs with Apple or Bill McGowan with MCI, it's an individual name. I met Bill McGowan in the early 1970s and my own firm would not allow me to finance him. They were very concerned about what AT&T was saying. The chairman of the board of the firm was on the board of

Continental Telephone and they didn't want us to "finance competitors."

In the late 1970s, I gave a presentation telling them they were right. I had looked at the various assets and stepped back, and when I thought about it, it really wasn't a fair competition. They thought I was going to give up on financing MCI, but I said, "No, the 1.3 million people who work for AT&T are not enough to offset Bill McGowan and his senior management team of 11 people; they might need five million people to do that."

I think of these opportunities to marry capital, new forms of securities, with people of talent, whether this individual is John Malone of TCI or Bill McGowan of MCI or Steve Wynn at what became the Mirage, today part of MGM/Mirage, or Kirk Kerkorian or Bob Toll or Bruce Karatz. These industries have grown, and the companies have been successful because (1) they ran great businesses and had great vision in these industries, and (2) financial technology was adapted to further accelerate the growth of these industries. They, as individuals, understood how to use that financial technology.

Michael Moe: *Mike, is there anything more you want to say about the opportunities you see in health care and education?*

Michael Milken: Let's compare education to the media industry, where, let's say, Steven Spielberg spent $1 million a minute for special effects. It changed what one expected on the movie screen. Our view on education is that the teacher is essential in that classroom. However, we've never invested in a digital product where you capture the best teachers, with the best techniques and the best learning, and put it online. In the case of

K12 Inc., the teacher stands up in front of the classroom today and is teaching science in the elementary schools in Philadelphia using the same curriculum that is online that students in virtual charter schools or home schools might be using, but here you have a teacher interacting with that child. You've completed the home-school connection.

I envision that in the next decade or two, some percentage of every class that every child takes, beginning in first grade and increasing as they get older, will be online, whether they're taking that class at home, the Boys and Girls clubs, the school's computer lab, or a local library redefined as to what a library is. And therefore you can invest tens of millions of dollars in curriculum because you are going to advertise it to millions of children around the world. You can bring the best curriculum, the best teaching methods, and empower that teacher in the classroom, or that parent who's helping the child at home, or some other care provider or tutor with the best, and you get immediate feedback as to how that child is doing and how children all over the world are doing, and you can adapt the deployment of late-20th-century, early-21st-century technology so it allows you to have a dynamic textbook that is changing every day based on your results, on how people learn, and on what's going on in the world. We all recognize that any textbook is obsolete on the day it is printed because it is based on things that occurred at that point in time, so by the time it gets to the student in the classroom—whether it's an example used in math, mathematics, or whether it's history that's being taught or science—it's all dated. By using technology, you'll be able to be more in tune to know how a person learns best, to present the material in the best way that they learn, to apply technology

The paradigm is changing with technology. The key issue is that teachers need to be comfortable with technology. It's been a problem in the past, but it will get better in the future.

Michael Moe: *Where is medicine going?*

Michael Milken: The IBM chip for Sony Playstation Games can do two trillion calculations per second. Use this for individuals and their diseases. Use the power of technology to diagnose and solve problems, calculate all the data and go through all the permutations. Then medicine will evolve and go from productive, to predictive, to preventive. A full 60% of all health-related problems involve lifestyle—whether you smoke, exercise, eat fruits, etc. It makes sense to launch companies that promote healthier living. Wellness will be adopted by society to lower costs and improve the quality of life over the next decade or two.

→ MEGATREND 2: GLOBALIZATION

"It has been said that arguing against globalization is like arguing against the laws of gravity."

—Kofi Annan, secretary general, United Nations

The megatrend of globalization has been impacting business since Christopher Columbus set off to find a shorter route to India and ended up in the Bahamas. Technology has been the major accelerator of this trend, with the telephone, the airplane, and the Internet playing major roles in making the world smaller and flatter.

Tom Friedman, the *New York Times* columnist and globalization spokesperson, brilliantly lays out his view on the future impact of globalization in *The World Is Flat*. Through cheap technology, abundant