

## STAR GAZER

### PROMODHAGUE

Managing partner at Norway-based venture partners

*Promod Hague joined Norway-based venture partners in 1990. He has been a key asset to the firm, and was named in the annual *Forbes* magazine's list of the past five years and in 2004, *Forbes* named him the number one venturist based on performance over the past decade. Promod focuses on investments in semiconductor and component systems and software and services. He is one of the most active investors in India. For a full interview with Promod Hague, visit [www.minibelgarenext.com/starbucks.com](http://www.minibelgarenext.com/starbucks.com).*

I think there are different opportunities emerging in India. You've got a really significant middle-class population that in the last few years has acquired a noteworthily amount of purchasing power, fueled by the real revolution that's taken place in India. Broadband penetration is really starting to take off in India. China was five years ago, the same time with wireless penetration. Wireless and mobile penetration are increasing significantly to the tune of about 40 million subscribers a year, and current rates are at the level where China was about four years ago. So, look at a lot of these old ideas and see if you can bring to the conclusion that the consumer Internet market is poised for tremendous growth that

## → MEGATREND 3: THE INTERNET—INVISIBLE COMPUTING

"The historical records show that humans have never, ever opted for slower."  
—STEPHEN KERN

History has a way of repeating itself.

When a game-changing technology hits the scene, people overestimate how quickly it will overtake the old technology, but underestimate the long-term potential.

The movie goes like this:

*Scene 1:* Revolutionary discovery is made public and gets everybody excited. *BusinessWeek*, *Fortune*, and *Newsweek* all write about it the same week.

*Scene 2:* Thousands of new companies get created in the industry in a nanosecond. Students are dropping out of school so they don't miss the "gold rush." Cocktail conversations among the rich and famous are dominated by this new technology. Zillions of dollars in capital are invested in hundreds of companies—many with half-baked business plans, but with all the right buzzwords.

*Scene 3:* The mania is in full swing. *BusinessWeek*, *Fortune*, *Newsweek*, and *Ladies' Home Journal* have cover stories on the new age's poster boy, calling him or her the new Edison or J. P. Morgan. The market value of the 20 new public companies is greater than the GDP of Great Britain. Companies that are in radically different businesses are tossing their old business plans to reinvent themselves for the new era. Cab drivers in New York City are retiring from the winnings they have made on tips from newly wealthy customers, and shoe shine people give new-era stock advice with the authority of Jim Cramer.

*Scene 4:* The music stops. At first, few people notice it because they are too busy partying and having a good time. A few of the more prudent participants start looking for a place to sit down.

Then the police come and tell everyone to go home. Some do, but many go looking for another house to go to where the music will go on and

the party will continue. Everything's shut down. Those without a chair are now frantic for some shelter. Too many parties, not enough seats.

*Scene 5:* The same people who were lauded as visionaries and heroes are being roasted as frauds and scam artists. Many go bankrupt. Some go to jail. Nobody is ever the same.

All the old codgers laugh at the misfortune of the new-era folks and are smug, knowing the world is going back to the way it was and is supposed to be.

*Scene 6:* After the nuclear winter, spring starts to emerge with a few flowers popping up. Nobody really knows what to make of it, but it's kind of nice to have some of these guys still around. Remembering how bad their hangover was, most people stay away with not even a sniff.

*Scene 7:* Flowers are now everywhere. The ones that were first obvious in the spring seem to be growing out of control (i.e., Audrey II in *Little Shop of Horrors*). Others are growing in places nobody had seen them before or could imagine.

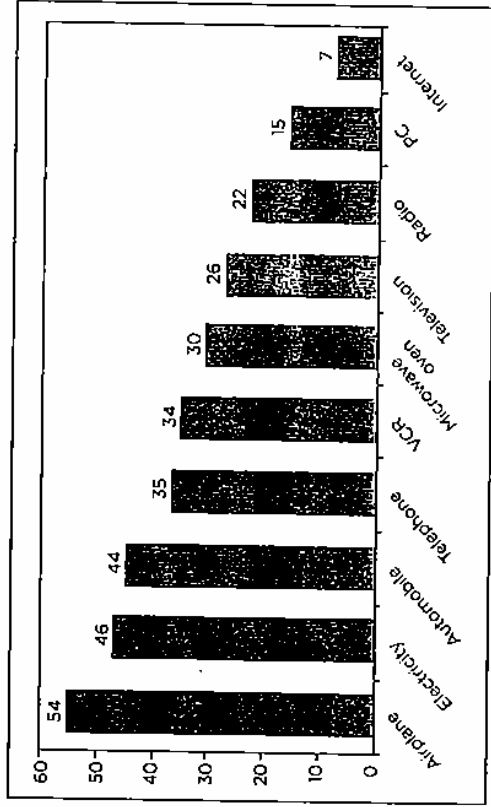
This sounds just like the script from the *Internet Story*—mixed metaphors and all, right? Maybe it does, but the Internet isn't the only industry whose story this tells. It's the story of railroads, automobiles, the computer, the telephone, and more.

In 1823, America had 15 miles of railroad tracks. By 1890, there were 166,703 miles of railroad track, but only two years later, \$2 billion of capital was destroyed by excess capacity and overdevelopment. Today the railroad industry is a \$100-billion-plus industry with 173,000 miles of track.

Between 1904 and 1908, more than 240 automobile companies were created. By 1923, there were 108 automobile companies, with 10 responsible for 90% of business. In another characteristic crash, within the next three years, 65 automakers dissolved, leaving only 43 U.S. firms, and no manufacturers entered the U.S. automobile market afterward. Today there are 3 U.S. automobile makers with \$630 billion of revenue.

The world population adopted the Internet more quickly than any other new technology in the history of the world. It took commercial aircraft 54 years before 25% of the population had used it. It took electricity 46 years. VCRs took 32 years. Cell phones took 16 years. Only 7 years after the commercialization of the Internet, 25% of the world's population had used it.

Number of Years to Attain 25% Market Penetration



Source: Michael Milken, Andrew Rosenberg.

Given the rapid adoption of this new technology with seemingly open-ended potential, billions of dollars were invested in start-up Internet companies and hundreds of billions of market value were attributed to fledgling public Internet enterprises.

When the bubble popped, it wasn't pretty: \$8 trillion of capital was destroyed—more than the GDP of Great Britain, France, and Germany combined. But now, with the sun coming up in the East again, the full impact of the Internet is beginning to be felt.

I don't view the Internet as an industry, but as a megatrend that impacts all industries. While there are pure Internet businesses, the Internet as an agent for change impacts everything from government to automobile manufacturers to music companies. For example, iTunes provides digital music content downloaded onto your iPod and made possible by the Internet. Certainly, Google is one of the most powerful and important companies in the world and at the epicenter of the Internet megatrend. But as we look for the most important emerging growth companies of the future, it is necessary to analyze how the Internet will create opportunity and also change business models.

Think about the United States Postal Service. With the success of the

**WORLD INTERNET USAGE AND POPULATION STATISTICS**

REGION	POPULATION (2006 EST.)	PERCENTAGE OF WORLD POPULATION	INTERNET USAGE	PERCENTAGE OF POPULATION USING INTERNET	PERCENTAGE OF WORLD USAGE GROWTH 2000-05
Africa	915 million	14%	23 million	2%	404%
Asia	3.7 billion	56%	364 million	10%	219%
Europe	807 million	12%	290 million	36%	176%
Middle East	190 million	3%	18 million	10%	454%
North America	331 million	5%	226 million	68%	109%
Latin America/Caribbean	554 million	9%	79 million	14%	337%
Oceania/Australia	34 million	1%	18 million	52%	132%
World total	6.5 billion	100%	1 billion	16%	182%

*Source: Miniwatts Marketing Group, www.internetworldstats.com*

Internet, e-mail has made "snail mail" less relevant, but it has also been a boon to traditional mail services by increasing the number of high-cost, high-margin packages commissioned via e-commerce.

The Internet can potentially turn the very traditional education system on its ear by providing online education. The Internet can democratize education by increasing access, lowering the cost, and improving the quality. Supply induces demand.

INTERNET SPOKES
Communication—VoIP, instant messaging, e-mail, blogs
Services—travel, on-demand, open-source
Entertainment—games, movies, podcasts, music
Purchasing—e-commerce, exchanges, business-to-business
Learning—postsecondary, research, market surveys

Skype, with its 241 million free Internet downloads that enable people all over the world to talk for free over their Internet connections, shows what the Internet can do to the traditional communications industry. In the software industry, the Internet has made huge waves of on-demand software and open-source software possible. Even in retail, through the Internet, mass customization is possible, allowing customers to pick and choose features in real time and receive the product at their doorstep in only a day or two.

Today there are more than 800 million Internet users across the globe with approximately 25% of those in the United States. E-commerce is a \$6.8 billion industry growing at 9%.

Ubiquitous computing and abundant bandwidth will further accelerate Internet adoption, usage, and applications. Whether it's in communications, services, entertainment, purchasing, or learning, the Internet is going to be at the heart of the action.

I-BUSINESS MODELS TO MONETIZE THE WEB	
MODEL	DESCRIPTION
Access	Companies that sell or provide dial-up and/or dedicated network connections or other network management services. Business models can be based on monthly fees, or can be provided for free under a contractual agreement. Free access may include free PCs for classrooms as well as connectivity and is typically covered through advertising.
Content	Companies that provide what you see when you go online. This includes both "portals," which organize and provide access to content created by other companies, and "destinations," which create specialized content (K-12 field trips, university courses, etc.). The typical business model is based on advertising, sponsorship, subscription fees, and e-commerce.
Commerce	Companies that sell merchandise or facilitate the matching of buyers and sellers. The typical business model resembles that of a catalog retailer or auctioneer, although as the industry develops, it will likely begin to encompass advertising as well. Commerce companies operate in business-to-consumer (B2C) and business-to-business (B2B) arenas. In e-learning, commerce is seen as an important means of covering the costs of free content and monetizing traffic, particularly in K-12, where advertising can be a sensitive issue.
Software	Companies that sell software that facilitates inter- or intra-enterprise communication and commerce. The typical business model is composed of software license fees, software maintenance fees, consulting services, and, increasingly, software hosting and operation services. Learning information systems and training management systems are two evolving software forms.
Services	Companies that provide a wide variety of services necessary in the online ecosystem, including hosting, application rental, transaction processing, information databasing, consulting, design, and implementation. The typical business model is based on "per-click" transaction fees, time-and-materials fees, or subscription fees.

Source: Michael Moe, Merrill Lynch.

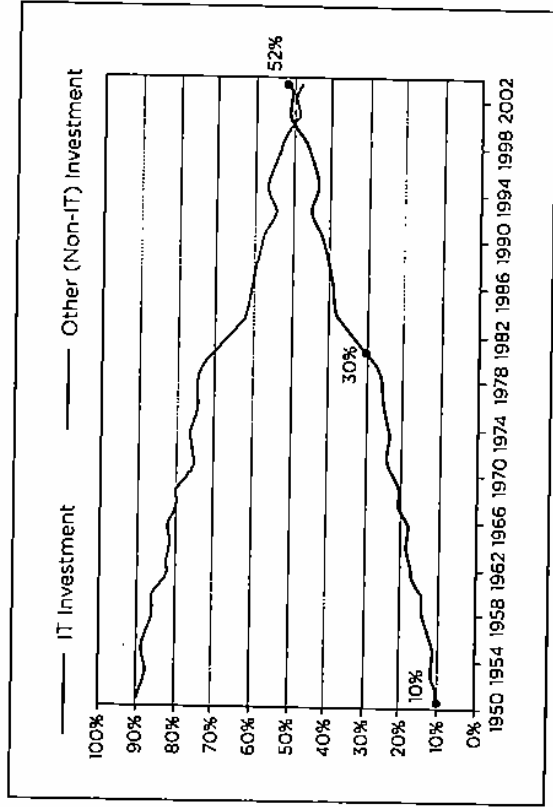
In order to invest successfully, we need to ask ourselves how the Internet can impact an industry or accelerate the opportunities within it. Further, to properly evaluate a company's business opportunities, I use

the framework on page 114, which provides a lens for evaluation. By analyzing an Internet business through the lens of one or more of these five business models (access, content, commerce, software, and services) on the Internet, I can better analyze a company's prospects.

### The Technology Revolution

Technology has transformed our society and economy, having a profound impact on U.S. corporations. This impact is explicit in the increased investment in technology over the past three decades. In 1970, approximately 5% of corporate capital expenditures were for computer and data processing equipment aimed at improving the productivity of human capital. By 2004, nearly 52% of capital expenditures by corporations were high tech related. IT has become the new property, plant, and equipment.

Composition of Business Equipment Investment



Source: Bureau of Economic Analysis.

### Internet Opportunities—Game Changers

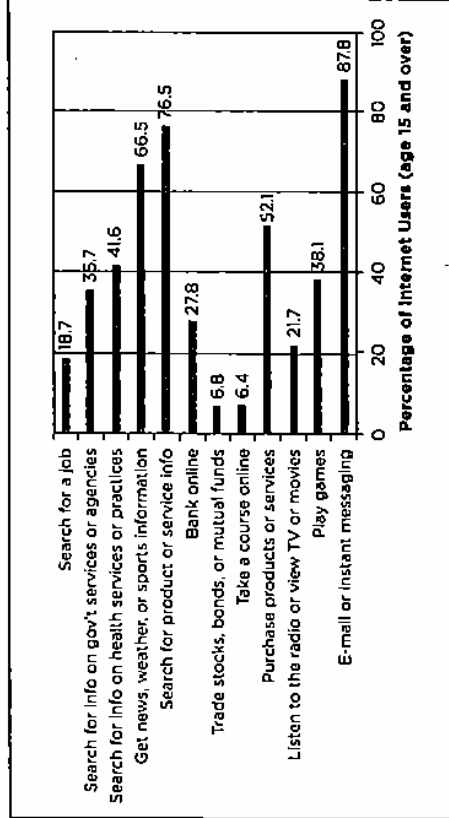
Broadband  
Mobile

- Search
- Personalization
- User-generated content (RSS, blogs, audio, etc.)
- Music and video
- Payments
- Interactive entertainment
- VoIP
- Pay per call
- Ubiquitous connectivity
- Market research
- Open-source everything
- Private exchange

Unlike the highly visible ramp of business investment in IT equipment and software, and the explosion in consumer electronics over the past 20 years, I see technology becoming increasingly invisible, untethered, and ubiquitous.

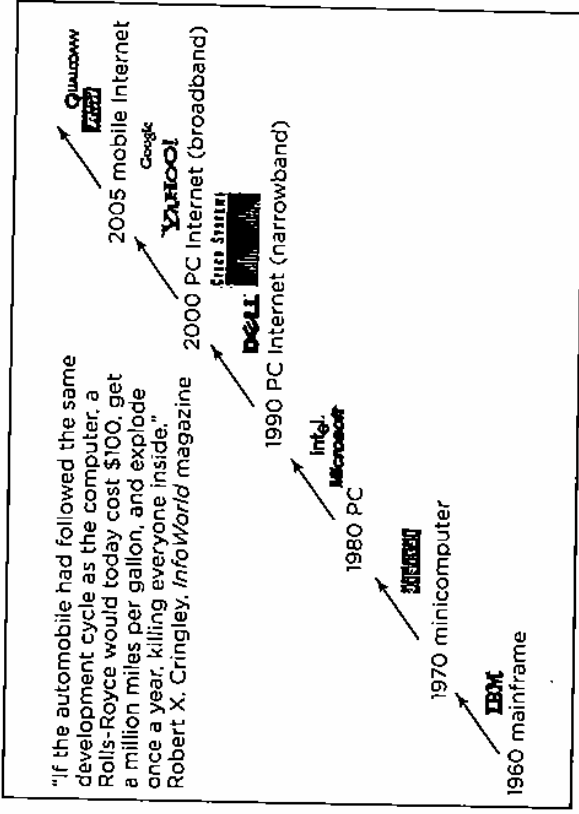
This is not to imply that today's information technology has matured to the point of pure cyclical growth. Further global penetration of developing economies, which are now leaping generations of computing technologies, as well as the replacement of the trillions of dollars

Online Activities (October 2003)



Source: National Telecommunications and Information Administration.

Major Computing Cycles



of existing IT capital stock, will continue to drive secular IT-industry growth that will be 1.5 to 2 times greater than that of the broader economy. However, these more mature markets will increasingly become shaped and reliant upon how today's emerging technologies alter the needs of businesses and the preferences of consumers.

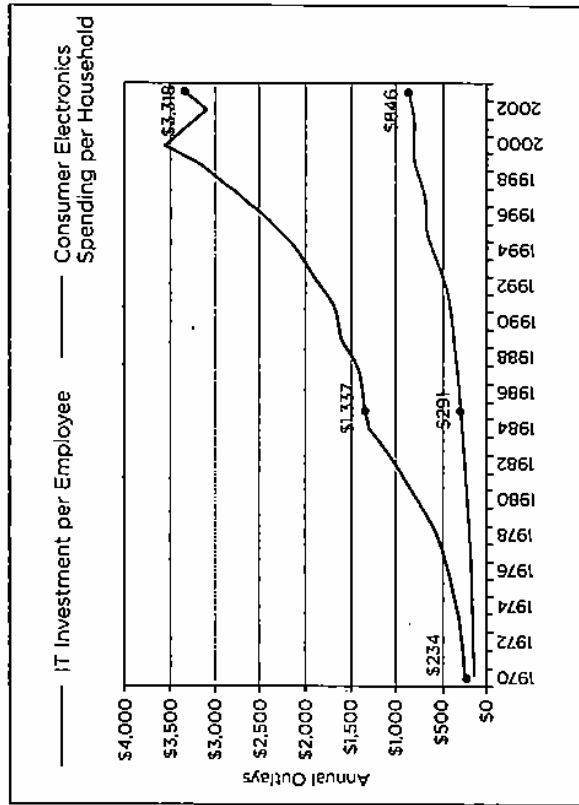
The past explosion in IT investment and consumption was driven by the principle of "faster, better, cheaper," which induced rapid cycles to innovate, develop, and bring "faster" technology to market. This resulted in rapid quality improvements, a sharp reduction in prices, and ultimately mass-market penetration across the business and consumer sectors.

The convergence of telecommunications and information technologies, and the growth in the Internet in particular, have released an enormous disruptive wave in how businesses operate (internally, intraindustry, and globally) and in how consumers shop, work, access information, acquire new skills and training, as well as how they communicate and interact.

Looking ahead, early stages of ubiquitous technologies are already rapidly emerging, ranging from telematics and biometrics to digital sen-

sors and smart tags that will digitally mark virtually every product and location, as well as enable new services and improved business processes.

Business and Consumer Outlays on Technology



Source: Bureau of Economic Analysis, Bureau of Labor Statistics.

Within the highly visible consumer electronics market, networking technologies that were once the domain of businesses are now driving the growth in the "networked home," while the declining cost of wireless devices is redefining the mobile nuclear family and driving the computer-to-user ratio from 1-to-1 to many-to-1, as the important statistic shifts from adoption per household to usage per individual. In other words, technology adoption continues to explode, albeit in more subtle and more valuable ways than simply upgrading to the latest family computer or buying the latest version of software. It is now driving the growth in interconnectedness with multiple "computers" per user, increased accessibility to high-value networks of information, and online communities that are now rapidly proliferating.

By asking how the Internet impacts the business opportunities for an emerging star, or how it influences a more traditional industry, you will be in a better position to catch the largest waves of opportunity.

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**JOE McENAY**  
 Chairman and Chief Investment Officer of Essex Investment Management Company

Essex Investment Management Company has \$2 billion in assets. Essex's investment strategies he managed the portfolio of 545 individual stocks. Essex's investment strategies he managed the portfolio of 545 individual stocks. Essex's investment strategies he managed the portfolio of 545 individual stocks.

From their 20th reunion in 1979 to 2000, he raised from \$75,000 to \$90 million in a CAGR of 20%. When I sat down with Joe, I asked him about key lessons that he has learned. He said: "Investing and now he says informed about every opportunity. He said my full interview in the Money, visit [www.findingthenextstarbucks.com](http://www.findingthenextstarbucks.com)

He said more companies mistakes than I'd be by being right. The real mistake up calls when something doesn't work rather than when it does. If that call brings you back to reality. When things do go really well, you're on the so smart, never do anything wrong or always do it right. But when you make a mistake, you know you were wrong. The painful. And you look at it, you analyze it and you say, "What was my mistake? Why did I make that mistake?"

For one, you're not getting positive. What's going on? You're going to see things are occurring that appear to have a substance and they really are some important. You see

change by awareness, by leading by having a background in what's going on, and you see the kinds of things that occur that is where the growth really comes from. Right now, I read *The New York Times*, the *Wall Street Journal*, and *FDI Magazine*. *Business Daily* (BD) has become one of the most important suppliers of information, but a lot of it comes from observing public things and observing people and what they do. What they like and what they will do.

Some of the great successes we had, was in earlier than anybody else, was in the medical area. It was in the medical management area, picked up the cellular area before anybody else, picked up international telephones, but above all, picked up the Internet. One of my early, very successful investments in the Internet was a local company in the Boston area called GMCI. I said, "I don't know what it is, but I like it." It was one of 44 e-shops we accumulated, became the second largest e-commerce in the United States, was finally being mis- of course, they were 1000 times bigger than we, so it was more important (ous thought) for a public venture capital firm in the Internet, and as the Internet grew, so did the bubble, developed, and the stock ultimately went from \$10 to \$160.

#### → MEGATREND 4: DEMOGRAPHICS: SEEING IT COMING FROM A MILE AWAY

"Weather forecast for tonight: dark."

— GEORGE CARLIN

Generally, I don't pay any attention to the weather reports because I find them often wrong, and some general observation can basically prepare me for the day ahead. If it's raining outside, I'll grab an umbrella. If it's 40 degrees, I'll wear a coat. But a long time ago I quit planning my activ-

ities based on the weather forecast for the week ahead. I don't flip a coin to make decisions, and I don't listen to a meteorologist.

But, if I want to schedule a ski vacation in Colorado, I'll plan it for March. If I want to go waterskiing in Minnesota, I'll do it in July, and if I want to watch the cherry blossoms in Washington, D.C., I'll arrange my trip for April.

While day-to-day weather is random, the seasons are predictable. It's cold and snowy in the winter, warmer and wet in the spring, hot and drier in the summer, cooler in the fall. The days are longer in the summer, shorter in the winter. I know these things and I can plan around them.

Similarly, understanding demographics gives investors a very predictable window to the future.

An aging population is going to require more health care, travel more, and be looking for ways to enhance their retirements. Premium wines, beers, and coffees benefit. So do financial services.

As women become a larger percentage of executives in business, nanny services and corporate child care become more in demand, and takeout food and premade dinners are trends, as are tutoring, maid, and gardening services.

In the I-Generation, most kids can't remember when the Internet wasn't always on. To them, the cell phone is like the automobile was to our parents—a way to exercise their independence and exhibit self-expression. Ring tones, text messaging, games, and movies are what the I-Generation expects in one smart device.

The Hispanic population is the fastest-growing ethnic group in the United States. Currently 14% of the U.S. population is Hispanic; it is expected to be 20% by 2020. With this growth comes great opportunities for targeted marketers, focused media, and smart retailers.

Immigration will continue to increase rapidly, though it will likely slow from some parts of the developing world as growth and liberalization in developing countries improve opportunities at home. In the United States, minority populations will continue to rapidly move into the mainstream. The Latino population's growth in numbers and purchasing power will make it the first minority group to meaningfully re-define the retail, media, and financial services industries in the United States.