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The Gildered Age

The real trouble with this world of ours is not that it is an unreasonable world, nor even that it is a reasonable one. The commonest kind of trouble is that it is nearly reasonable, but not quite. Life is not an illogicality; yet it is a trap for logicians. It looks just a little more mathematical and regular than it is; its exactitude is obvious, but its inexactitude is hidden; its wildness lies in wait.

—G. K. Chesterton

Sometime in the late 1990s, Gary Winnick—chairman of the then $47 billion enterprise, Global Crossing (GC)—did something unusual. He decided to take time off from touring art galleries with David Rockefeller, playing golf with Bill Clinton, and enjoying the Malibu beach to learn a little about the business he was in: He bought a video describing how undersea cable was laid. The video was all Winnick needed to know about laying cable. For he understood what business he was really in, and it had nothing to do with ships or optic fiber. Winnick was doing nature's work: separating fools from their money. And he was good at it.

Supposedly, Winnick knew the undersea cable business well. Likewise, the people from whom he raised money were the "best pros" on Wall Street and were supposed to be capable of managing big bucks. After all, if they did not know how to place money to get a decent return, what did they know? And those who provided these "best pros" with money were

also supposed to know what they were doing. As it turned out, no one had a clue.

One of the great marvels of life is not that fools and their money are soon parted, but that they ever get together in the first place. Life goes on, we note, for no particular reason other than the vanity of it all. One lie replaces another like cars along a Paris street (where a parking spot rarely remains vacant for long).

Not only does life imitate art, but it slavishly tries to model itself on science, too. In the course of the 20th century, a simple idea had become stuck in investors' minds. Everything worked like a machine, they thought, especially the economy. If the economy was growing too fast, Alan Greenspan would "put on the brakes" by raising interest rates. If it was growing too slowly, he would "open up the throttle" by lowering interest rates. It was so simple. The mechanical image seemed to describe perfectly how the Fed worked. There was no experience in the last two decades to contradict it. It had worked so well for so long: It was almost as if it were true.

In his book, *A Random Walk Down Wall Street,* Burton Malkiel popularized the *efficient market hypothesis,* claiming that stock prices moved in a random fashion. The best you can do, he proposed, was to buy the indexes and stay in the market. Over time, the market goes up . . . and you get rich. According to this view, the market is a benign, mechanistic instrument that merely distributes wealth evenly to those who participate: As long as you are "in the market," all the riches of capitalism will flow in your direction.

The trouble is that the market may look mechanistic, but it is not. The market is an unbounded, organic system; mastering it is a human science, not a hard science. The financial markets reflect the activity of the human economy; they are unbounded chaotic systems. The best metaphor for understanding such a system is the nature of which they are a part—infinitely complex and ultimately uncontrollable. Markets are neither kind nor forgiving. If markets do the work of God, as has been suggested, it is the God of the Old Testament, not the New.

But in the late 1990s, we lived in a wonderful world. It was rich and lush . . . the sun shone every day. Progress seemed inevitable and unstoppable, and compiling information in digital form was thought to hold the secret to an ever-increasing abundance of resources for mankind. It seemed so simple: Computers and telecommunications would provide people with increasing amounts of information, and this in turn would allow goods to be produced faster and at lower costs. Humans, hitherto

Neanderthals in a low cave hunched in ignorance and darkness, would now be able to stand upright and edge a little closer to perfection every day. There was no chance that they would slip up, as they had always done in the past, we were told, for this was a more fully evolved species, better adapted to the Information Age. This really was a "New Era," we were assured.

At the dawn of the 21st century, a half-century of progress and a 25-year-long bull market had created a race of geniuses. Americans were on top of the world. Their armies were unbeatable. Their currency was accepted everywhere as though it had real value. Dollars were the United States' most successful export, with a net outflow of nearly $1.5 billion per day. And dollars were the product on which the nation enjoyed its biggest profit margin. It cost less than a cent to produce one, and each one was valued at par.

But America's greatest strength was its economy. It was not only the strongest in the world, but the strongest the world had ever seen. The United States had increased its economic lead over the competition in the 10 years running up to the end of the century. In the minds of many, the U.S. economy was unstoppable, and its continued success inevitable. They believed that the nation's leadership position was not merely cyclical, but eternal. It had achieved a state so nearly perfect that improvement was hardly imaginable. American music, art, films, democracy, and American-style market capitalism were everywhere triumphant.

"America is the world's only surviving model of human progress," President George W. Bush told the graduating class of West Point in June 2002. America has its faults, wrote Thomas L. Friedman in the *New York Times* at about the same time, but without it, "nothing good happens."

Oddly, during this golden era of silicon chips and Internet domain names, no one was able to explain why the Information Age never made its way across the Pacific to Japan. No one even bothered to ask the question. But that is one of the comforts of a great boom; question marks disappear. Societies, like markets and individual humans, are infinitely complex. The harder you look, the more you see. When things go well, people are content not to ask questions and not to look too hard. They think they know how the world works and are happy with the jingles and simple metaphors that explain it.

The new information technology, it was claimed, would boost productivity and the growth rate. Few people doubted it. More information would make things better; it seemed as simple as that. For question

marks, like winter clothes after Easter, get packed away during a bull market. Not until a chill autumn wind blows do they come back out.

And at the end of September 2001, the drafts of cold weather were just beginning. The Nasdaq was down 73 percent from its high. The Dow was down 32 percent. A recession had begun in March. Although, at first it was reported to have ended after a single quarter, later revisions showed that it lasted through the end of the year. Investors had no way of knowing, for they had no crystal balls, but they were in for a spell of bad weather. Yet only a few people began rummaging through their cupboards for their coats and mittens.

We humans understand things by analogy. Indeed, since before Noah built his Ark, humans have tried to understand the world by extrapolating from the known to the unknown. Comparison was the only tool they had to explain what they observed. Once upon a time, a bear might have been said to run "as fast as a lion," for example, or "like a holy hellcat" because it was not possible to time an animal's running speed precisely. After a period without rain, villagers might have remarked that it "was just like the Great Drought" of a few years earlier. They had no way of knowing what might happen, of course, but the analogy warned them to conserve their food. By comparing one thing we don't really understand to another we understand only slightly better, we think we understand both. We imagine Alan Greenspan, for example, pulling levers and turning knobs as if the economy really could be run like a machine.

Yet, strangely, in the new world at the close of the 20th century, the analogies from years ago or from across the wide Pacific did not seem to matter. Things were different. Not only did the old rules and old lessons no longer apply, analogies themselves were now out of fashion. The New Era was "digital." It was widely presumed that nearly all of life would soon be digitized and that mankind would grow better informed, richer, and morally superior every day. That was . . . until the weather changed.

Gurus of the New Era

The history of the New Era will record that it was Robert Metcalfe and Gordon Moore who, like Moses and Aaron, led their followers out of the bondage of the Old Economy and into the land of stock options and caffe lattes. Metcalfe and Moore handed down the laws by which the people of Silicon Valley in the 1990s lived.

Metcalfe described a well-known phenomenon: Each element of a system or collectivity becomes more valuable as it expands. You can see this

by thinking about the phone system. When the Bell Telephone Company was founded in May 1877, its products were almost useless. Subscribers could not call anyone because no one had a telephone. But three years later, there were 30,000 phones in use.

This led to the further insight that the company could afford to spend a great deal of money selling and installing telephones because it would earn a profit later on. What's more, it was critical that people purchased Bell telephones rather than a competitor's. Ultimately, the most valuable, and presumably the most profitable, service would be the one that was most ubiquitous.

This insight cleared the way for the popular Internet business plan: Do not worry about profits—fight for market share. Few noticed the flaw: The telephone system was a quasi-monopoly. It made sense to pay a lot of money to put it in place, because the company could expect monopoly-level profits for a very long time. Bell Telephone and its derivatives are still in business. But Amazon.com, the Globe.com, Webvan.com, and thousands of other Internet start-ups had no hope of ever getting a monopoly or anything close to it.

Moore, meanwhile, handed down his own law: He stated that computational power would double every 18 months—which, thus far, it had. This growth rate astonished everyone and led to the other major delusion of Internet investors—that just because computer power increases exponentially, so should Internet businesses and stock prices. Moore's law only applies to the speed at which computers process information. Government quants assumed, wrongly, that this was equivalent to an increase in the nation's wealth, as expressed by gross domestic product (GDP). As we'll see later on, this in turn led to distortions in other measures, such as productivity and inflation levels.

If Moore and Metcalfe were the Old Testament prophets of the New Era, George Gilder was its messiah. Every revolution needs its intellectuals, its firebrands, its executioners, and its victims. One-third visionary, one-third fool, one-third incomprehensible—Gilder was all of these things, and more. A speechwriter for Romney, Rockefeller, and Nixon, he authored several well-read books, including *Wealth and Poverty* and *The Spirit of Enterprise.* He was quoted more often by Ronald Reagan, the record shows, than any other writer. His book, *Microcosm,* took him farther than anyone had ever gone into the distant reaches of new technology and the enterprising spirit. Since then, some would say he has drifted a bit too far.

Gilder's articles in *Forbes ASAP* were not merely hard to read; they were incomprehensible. But never mind. He was a genius, and he was

right about a great many things. His reports were followed by many of the shrewdest investors of our time . . . to such an extent that this "pale, nervous Yankee" was seen as a semi-god or "John the Baptist of the Digital Age," as one article put it. But he had worked himself into such a state of rapture over the possibilities of the Internet that he seemed to have gone a little mad.

One caveat, "I don't do price,"[1] Gilder commented. Too bad. Because, as investors would discover later, prices are important. A technology may be spectacular; the company that owns it may be a great company; but the stock is only a good investment at the right price.

Star-Crossed

"Listen to the technology!" Gilder's Caltech physics professor, Carver Mead, had advised the New Era messiah. Listening carefully, Gilder had believed that, if he strained his ears enough, he could almost hear the cosmos speaking. "Buy Global Crossing!" he thought he had heard.

Gilder did not usually buy, and judging from the press reports, he had little interest in picking stocks. But this Ulysses of the Telecosm had forgotten to plug his ears or have himself lashed to the mast. Thus, the sirens at Global Crossing got him . . . and drove him crazy. Nowhere was this more manifest than in his book, *Telecosm,* in which he announced the emergence of a new economy, "based on a new sphere of cornucopian radiance—reality unmassed and unmasked, leaving only the promethean light." To this day, we do not know what that sentence was supposed to mean. It was all very well to blather about how Global Crossing helped to bring "a new epoch of spirit and faith" with its "majestic cumulative power, truth, and transcendence of contemporary science and wealth." But with a profit/earnings (P/E) ratio of negative 130, an investor would have been a fool to bet money on it. Yet even in June 2001, George Gilder continued to praise Global Crossing, qualifying the stock as "no surer bet in the Telecosm."[2]

Oh, but we forgot—Gilder didn't "do price."

Master of the Bandwidth Universe

Gary Winnick had been a former Drexel Burnham bond trader before he got into the optic-fiber business almost by accident. He had seen the possibilities of bandwidth after financing an undersea cable for AT&T in 1997. His first cable took 14 months to lay, but it was extremely profitable.

Thus, did the simple business plan for Global Crossing emerge—raise money and lay fiber-optic cable! Early estimates of construction costs were around $2.7 billion. The money was soon coming into the Hamilton, Bermuda, headquarters of Global Crossing at the speed of light. The stock went public in August 1998 at $9.50. Eight months later, it hit $60 a share, giving the company a market capitalization of $54 billion. Winnick's personal stake in the company rose to $4.7 billion. He was soon having dreams of building an undersea broadband network that would link continents and serve global carriers like Deutsche Telekom and AT&T.

Three years later, in November 2001, Global Crossing "shocked and angered" investors by reporting a loss of $3.35 billion, more than six times greater than the loss from the same quarter a year earlier. Included in the loss was a $2 billion write-down of its stake in another star-crossed company from the Gildered Age, Exodus Communications, then operating under protection of the U.S. Bankruptcy Code. Global Crossing common stock traded at only $1.24 in mid-November—up from the 38 cents rate of October 9, but down from the $13.30 level set in June, when George Gilder believed it to be a sure thing. In a year and a half, investors had lost about $52.9 billion on the stock.

Still Gilder, the New Era hallucinatory, held on. "If you bought Global Crossing in 1998," he had written just a few months earlier (in June 2001), "you bought one 5,000-mile cable. Today you are buying a 102,000-mile network. If you bought Global Crossing in 1998, you bought $400 million in revenue. Today, you are buying over $5 billion in sales and more than a billion dollars in adjusted cash flow, growing at 40 percent a year. If you bought Global Crossing in 1998, you bought into static transatlantic STM-1 sales. Today you are buying an IP backbone with traffic growing at 450 percent a year and 20 percent ownership of Exodus (the Web's key hub for exafloods of content, storage, and services) which almost doubled year-to-year revenues in the March quarter. If you bought Global Crossing in 1998, you bought the dream of a global web of glass and light. Today you are buying that web."[3]

"If you bought Global Crossing in 1998," a cynic might have retorted, "you would have lost 98 percent of your money." (See Figure 1.1 for Global Crossing losses.)

The dream turned out to be a better investment than the web itself. As Global Crossing raised an increasing amount of money and laid ever more cable, it hastened its day of reckoning. Instead of Gilder's "exaflood" of profitable content, the cable companies were soon swamped with excess supply: They were soon so deeply underwater financially that

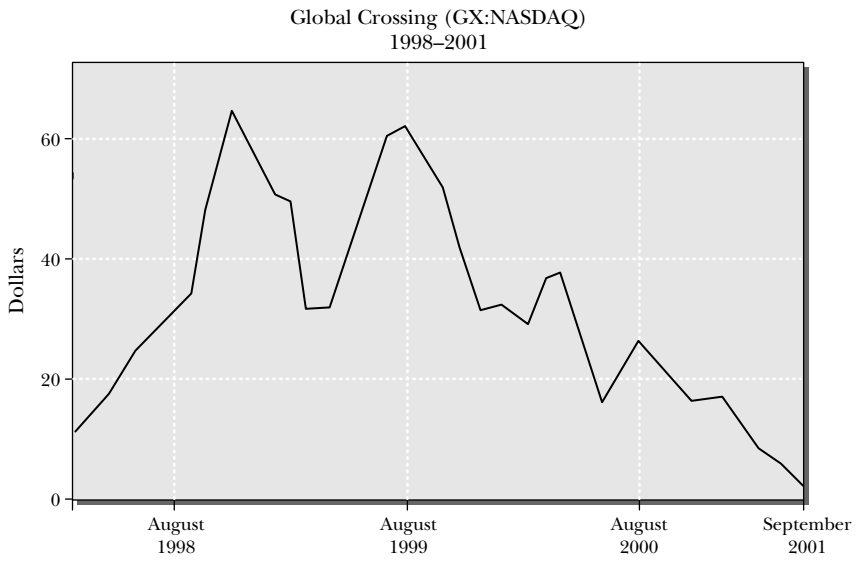

Figure 1.1 The New Era's Promethean Light. Global Crossing was George Gilder's favorite stock. Unfortunately for investors, Gilder did not "do price." Global Crossing declared bankruptcy in January 2002. Founder Gary Winnick banked some $700 million before resigning as CEO. On resignation, he stated: "I deeply regret that so many good people involved with Global Crossing also suffered significant financial loss."

they had no hope of escape. While Gilder watched the stars of the Telecosm, smart industry insiders turned their own eyes earthward and saw the deluge coming.

Thus, in November 2001, investors were not the same warm-hearted, generous naïfs who lent money to Global Crossing and other wunderkinder at the height of the tech boom. After all, lenders had marked Global Crossing's bonds down to a suspicious 18 cents on the dollar. Its secured bank debt traded at 67 cents on the dollar. Preferred shares were priced to yield 177 percent—if they yielded anything at all.

Bandwidth had seemed like a good investment when investors had a lot of money and little bandwidth. But soon, investors had less money and lots of bandwidth to choose from. Prices of bandwidth plummeted. Meanwhile, according to experts, less than 10 percent of fiber-optic cable was used or "lit." And, despite this fiber glut, Global Crossing continued to spend $500 million every quarter to finance more construction. Adding

more capacity at this stage was akin to a drunken partygoer opening another bottle of wine.

Not surprisingly, on January 28, 2002, Global Crossing declared bankruptcy, leaving lenders with losses of nearly $4 billion.

More surprisingly, many were those who still believed: A *Fortune* article published June 9, 2002, for example, lamented the collapse claiming that the company had a "decent shot at survival."

Whose fault was it? Winnick who had had the gumption to ask for the money, or the patsies who had given it to him? They might have ponied up the $2.7 billion, and maybe Global Crossing would still be in business. Instead, they kept shoving big bills in Winnick's pockets until he had raised $20 billion. By the time his company had folded, its long-term debt had swelled to $7.6 billion (with total liabilities of $14 billion), and it simply did not have the cash to make its interest payments.

But what happened to the $20 billion that Winnick had raised? He had spread the money around—acquiring other overpriced telecoms, giving Wall Street a way to earn massive fees by keeping the money coming his way. From 1998 through 2001, the top Wall Street firms earned more than $13 billion in telecom underwriting and investment-banking fees.

And so both the juice and hokum whirled around. Salomon's technology analyst, Jack Grubman, talked up the stock. Investors bought it for more than it was worth. Winnick bought other telecoms for more than they were worth. Everybody made money.

But it was an empty vanity. People do not really get rich by spending money on things they do not need and cannot afford, at prices that are too high. All they do is move money around . . . and waste a great deal of it. In the telecom sector alone, far more dark fibers were put down than the world really wanted. And when the end of the bubble finally came, Global Crossing alone had torn a $54 billion hole in investors' pockets.

Yet not all that money disappeared. By the time Global Crossing declared bankruptcy, Winnick had sold $735 million of stock, and received another $15.8 million in other emoluments. Winnick must have felt pretty smart. He had done what he had set out to do: Winnick and family had pocketed more than $600 million by cashing in stock during 2000 and 2002, even as Global Crossing struggled with a severe debt load, falling prices, and an industry in upheaval. Winnick also arranged to sell 10 million shares at $12 in May 2002, a decision wryly qualified by *Forbes* as "good timing" when it saw the company's shares drop below the 2 cent-level at the end of 2002.

There are some things, as Mae West observed, of which a man can have too much and suffer no harm. But too much money is a clear and present danger to a man . . . or even to an entire economy. Telecom was not the first, nor will it be the last industry to be ruined by an excess of good fortune.

Moses Returns

Michael Malone, editor of *Forbes ASAP* and author of several books on business and the new economy, grew rich in Silicon Valley by accident. He received founders' shares from both Tom Siebel, founder and CEO of Siebel Systems Inc., with whom he co-authored *Virtual Selling,* and Pierre Omidyar, founder of eBay. He had no idea what the shares were worth and was astonished to find himself a wealthy man. But he lacked faith; he sold his shares as soon as he could.

For the new economy bubble did not seem real or right to him. "Most of us know, intuitively, that these young web companies minted by the hour, will not survive and prosper," he wrote. He predicted moreover that, in the "coming reckoning," investors' money would be lost, retirement funds would be erased, and that the valuations ruling the stock market would come back down to earth from their irrational heights.

By the late 1990s, Metcalfe and Moore shared this sentiment. It was as if they had returned to the Valley and found that their tribesmen had turned the Internet Age into an absurd parody. Instead of using the power of the silicon chip and the Internet to launch real businesses and create real wealth, they found investors dancing recklessly around the graven image of enterprise—the initial public offering (IPO).

Metcalfe described himself as hung up on the stock market bubble: "There's stuff going on out there that I just don't get yet," he explained. He considered the bubble "distorted," and expressed concerns that this distortion would eventually "blow up." His writings show a concern for entrepreneurial obsession with IPOs: "I'm frequently asking [entrepreneurs] the question, 'So, what's your company going to be?' The answer these days usually contains the letters I-P-O. That's the wrong phrase to have in the first five sentences explaining what your new business is going to be about. If you're thinking IPO, you've got your eye on the wrong ball . . . These people think that an IPO is a significant event. I view it as a minor financial event. They view it as what life is all about."[4]

Would there be a day of reckoning coming? "The [venture capitalists] get in on the ground floor," Metcalfe continued, "and they get out early.

[But] . . . these poor schmucks in the public markets. They are going to start looking for profits and they're not going to find them. It's all going to come crashing down."[5]

But it was too late. According to the popular thinking of the time, Malone, Metcalfe, and Moore had become out of touch.

Digital Man "Gets It"

In Summer 2000, Ed Yardeni categorized humans of the New Era into two different types, the "forward-looking camp" and the "backward-looking crowd."[6] According to Yardeni, the first camp believed that the digital technology revolution was transforming our economy into the New Economy, and the second viewed the New Economy as mostly hype and considered the technology revolution to be a stock market bubble. These views were further explored by the chief economist at Deutsche Bank, Alex Brown, who concluded, "The first group gets it, the second group doesn't." It thus became fashionable for the delusional to refer to their fellow lunatics as those who "get it" and to dismiss everyone else.

Typically, the expression *getting it* described a position considered so hip and correct that there was no need (and little hope) of ever justifying it by appeals to reason or experience. Men who wondered at the extreme claims of radical feminism, for example, were told that they just didn't get it. Likewise, any attempt by a white person to disagree with black racists—such as those who claimed that Cleopatra was black African—was met with a "you don't get it, do you" response.

Whether by checking the bumps on human heads, the activity in their e-mail accounts, or their voting habits, Yardeni identified a whole new subspecies of human—the "digital man": "The first group is composed of digital humans who believe the New Economy's secular trends are overwhelming the Old Economy's business cycles. The second group is mostly analog-type personalities who believe that fluctuations are wired into our brains and collective behavior,"[7] he wrote.

Before this, Yardeni was best known as the man who had made Y2K hysteria respectable. He had predicted that the computer problems associated with the year 2000 would cause a recession. Of all the Y2K personalities, perhaps none was proven more wrong than Yardeni. Not only were there no Y2K problems of any economic significance—the effect of the whole scare created a boom, not a recession. Huge spending on Y2K prophylactics turned into a big balloon in productivity, thanks to the miracle workers at the Bureau of Labor Statistics. Yardeni must have

been astounded: Two little digits on the Gregorian calendar—and BOOM! The world's biggest economy took off.

But commentators had conveniently forgotten Yardeni's Y2K fiasco. "The New Economy," wrote David Denby in the *New Yorker*, "seems to be producing a New Man who, in imitation of the economy itself, is going through wrenching changes in the way he lives, works, buys and interacts with other people."[8]

There they were—a new race of humans walking among us. All we knew about them was that they "got it," and they were digital. We also knew something of their whereabouts—there were evidently many digital humans on Wall Street and very few in Japan! "Information wants to be free," they said. "Speed changes the meaning of information." "Our goal is to achieve ubiquity." What they said did not seem to matter; they were the young, hip, plugged-in tech guys. And they got it.

Someone once said that you only make big money from people who are stupider than you. The Digital Men figured this out early . . . and were fortunate in having such a large market. Like the hustlers and chutzpahs who sold modern art to Fortune 500 corporations, they went right for the high ground. Everyone—from top corporate CEOs to cab drivers—wanted to throw money their way. Michael Wolff in *Forbes ASAP* described what it was like when the absurd pretensions of the New Era techies met feeble, empty-headed corporate America:

> I wish I could communicate, however guilty I feel about it now, the sheer joy of sitting in meetings with well-established businessmen representing billions of dollars of assets and multimillion-dollar profit streams and being able not only to high hand them because I got it and they didn't, but also to be able to actually humble them, to flagrantly condescend to them, to treat them like children. On the basis of this knowingness, hundreds of billions of dollars have traded hands.

But why didn't the big money guys get it? Quite simply, because there was nothing to get. The techies had no real knowledge—just a pretense of knowledge—big, hollow ideas that in the end, meant nothing. Granted, they had technology, but they had no more idea of what it might do or what it might mean than anyone else. Probably less—since they tended to have so little real experience. And even the technology they mastered was often shown to be ineffective, or quickly superseded by more, yet newer technology of an impact and significance that was even less certain.

Each revolution seems to demand a New Man to go with it . . . or go along with it. The French Revolution produced the "Citizen" *sans culotte* eager to crucify the priests from whose hands he formerly took the sacraments and chop off the head of the aristocrat whose land he had tilled. The Russian Revolution produced a New Man, too—the new Soviet Man, who not only could do the work of 14 normal men, but was above the reach of normal emotions and body functions. As Trotsky put it, he would be able to "master even the semi-conscious and unconscious systems of his own body: respiration, the circulatory system, digestion and reproduction."

Those who got it were supposed to know, deep down, an inchoate, indescribable truth that the rest of us could not quite fathom. As a result, Digital Man—a race of mutant *Homo supersapiens*—was supposed to not merely inherit the world, but to take it by adverse possession. But none of the New Men in history (from Russia, France, or elsewhere) ever succeeded in eliminating the weaknesses and sins to which we humans are heirs. And even if there were a "New Man" for the "New Economy," he was apparently very similar to the old one: "Greedy, obsessed, and ignorant"[9] were the words that David Denby, writing in the *New Yorker,* used to describe the New Men he saw around him.

Of all those who "got it," few got it as good as George Gilder.

Gilder's role in the Information Revolution was to justify the dreams of the masses. Like Marx, Engels, or Lenin, he helped convince the *lumpeninvestoriat* that they could get rich without working by buying into technology they did not understand and stock in companies they did not know with money they did not have. What was talk of gigabits of photons flying over glass fiber and multiplexing, pulsating transits other than the information revolution's answer to Marxist claptrap about dialectical materialism? To the average investor, it was all weird and unfathomable. But if it made him rich, why ask questions?

And to those who did ask questions—whether they were the reactionary bourgeois elements of Russia in 1917 or the reactionary conservative investors, such as Warren Buffett in 1999, the answer was the same: They didn't get it. The fault was not so much intellectual, for no one accused Buffett of being stupid. It was deeper than that. The new era demanded investors who understood it in their heart, bones, and guts—with no need for question marks or explanations—investors who just got it.

Like the new Soviet Man, who needed no profits to motivate him to work, the New Man of the digital era needed profits to lure them to

invest. How could Global Crossing be worth $60 per share? The question never occurred to him. He could only think about "the new sphere of cornucopian radiance." How could he look closely at Amazon.com at $200 a share when the "promethean light" was shining in his eyes?

Madmen Get Rich

The information revolution also had its little cells working feverishly to make the world a better place.

"This is real," we recall a lunch companion telling us in early 2000. She had been a commodities trader. But commodities had gone down in price for so many years that it scarcely seemed worth the effort to trade them anymore. What the world craved was intangibles, not tangibles. "No one is interested in commodities trading," she explained. So, our friend gave up commodities trading and followed the money: She was now working as an advisor to dotcom entrepreneurs, providing them with information on how to go public. "These guys work 24–7," she explained. "They think they're building a whole new world."

One of the leading entrepreneurs of the Gildered Age was Michael Saylor, founder of MicroStrategy. Of all the messianic madmen of the era, Saylor certainly stood out—perhaps as the most insane, and certainly as one of the richest. Saylor brought entertainment to millions and helped separate countless fools from their money.

"We're purging ignorance from the planet," Saylor exclaimed, setting a lofty goal for himself. He was on a "crusade for intelligence," he claimed;[10] he wanted to make information free and have it run like water. He planned to write a major book on the subject, to be entitled *Intelligence*.

In a contest between ignorance and stupidity on the one hand, and information and intelligence on the other, we know how to bet. A certain level of madness is often an advantage in the business and entertainment world, but this was too extreme for that. Purging the planet of ignorance? Only a buffoon or mountebank would say such a foolish thing. Saylor was clearly one or the other—maybe both.

After all, he made a public spectacle of himself every time he opened his mouth: "I think my software is going to become so ubiquitous, so essential, that if it stops working there will be riots,"[11] he had told a writer for the *New Yorker*. MicroStrategy had merely developed software that helped businesses figure out who was buying their products. The software allowed McDonald's, for example, to evaluate how many more (or less) Big Macs a Chicago franchise would sell on a winter Friday than a franchise in Miami.

Saylor also had less visible corruptions; he had hidden massive indiscretions in his company's financial statements.

The stock market had gone mad over companies such as MicroStrategy. Shares were offered to the public on June 11, 1998. Nearly two years later, the stock hit $333. Saylor made $1.3 billion that day and $4.5 billion in the preceding week—bringing his personal net worth to $13.6 billion. At the time, MicroStrategy, with sales of only $200 million and a reported profit for 1999 of $12.6 million, was worth more than DuPont. This made Saylor the richest man in the Washington, D.C., area—wealthier even than Oracle founder, Larry Ellison. At $333, the stock price was as insane as the company's CEO.

While we were mocking MicroStrategy, its share price, and its dizzy CEO in our daily e-mails at www.dailyreckoning.com, the rest of the financial press was praising him. Hardly a single report failed to find something flattering to say. The English language has thousands of negative words, but before March 20, 2000, the ink-stained hacks, analysts, and TV presenters could not seem to find a single one that applied to Michael Saylor.

Then came March 20, 2000. That day, the financial reporters opened their dictionaries and Michael Saylor made history. Under pressure from the Securities and Exchange Commission (SEC), he was forced to admit that MicroStrategy had cooked its books for the previous two years. Instead of a profit of $12.6 million in 1999, the company would now show a loss of $34 million to $40 million. Revenue, too, was downsized. Never before had a man lost so much money in such a short time. In six hours, his net worth dropped by $6.1 billion.

From that day on, Saylor's life changed. Instead of being praised by investors and the financial media, he was whacked hard. Investors were out $11 billion. Some of them were angry. Others were suicidal. "I never thought I could lose like this," said one investor on the Yahoo/MicroStrategy message board . . . before declaring that he was going to kill himself.

Before March 20, 2000, Michael Saylor could do no wrong; now he could do no right. Most prominently, *Fortune* listed him as number one in the "Billionaire Losers Club," with total losses of $13 billion.

But a difficult failure does a man more good than an easy success. On the evidence, Saylor was a better man in the fall of 2001 than he had been a few years earlier. According to *Washington Post* reports, he turned to drink to drown his losses.[12] When not drinking, he was tending to his business. The stock was still overpriced, but at $3.36, a lot less overpriced than it had been.

So was he still a visionary? An "older, wiser" one, he replied.

The excesses of the dotcom bubble have been well documented elsewhere. Even in 2001, economists and analysts conceded that the whole Internet thing had gotten out of hand. Of course, they had no way of knowing that Saylor had fudged the numbers. Nor could they be blamed for not realizing how quickly many of the tech companies would collapse, or how far the whole sector would fall. Who could have predicted such things? But, most of those who had seen no reason to resist buying MicroStrategy at more than $110 per share in December 1999, now claimed that they had known all along that there was a bubble in the tech sector. With the wind blowing from a different direction, they found it all too easy to change tack.

We recite the excesses of this era not merely to gawk or scold, but to show how the world really works. It was not just the worst minds in America that were caught up in the bubble delusion, but many of the best. Nor was the bubble a perversion of human nature or an aberration in human history. Episodically, such things happen. People begin to believe that the old lessons no longer apply and the old rules no longer work.

A world of make-believe, the bubble economy comprised virtual companies with virtual revenues and virtual profits. Companies that had never made a dime of profits, and never would, were valued as if they were worth billions. By the fall of 2001, the worst of them had already crashed, and the best were on their way back down to where they had started. Many of the dotcom entrepreneurs had turned to driving cabs or waiting tables. A few of the era's wheelers and dealers were already being hunted down by ambitious prosecutors and locked up. Some had moved into real estate. Meanwhile, many of the intellectuals who directed, rationalized, hyped, and often profited from the Information Revolution were still at large, but poorer and humbler.

A River Runs through It

In the summer of 2000, *Harry Potter and the Goblet of Fire* arrived (in hardback) on the nation's bookshelves. It was such a hit that many stores quickly ran short of copies. Parents turned to the Internet, and to the Internet's most famous company, Amazon.com, to secure a copy. Amazon was able to take advantage of this success story to bring on 63,550 new customers.

But even the most popular book of the season proved a loss maker for the company. Harry Potter sales resulted in losses for Amazon of about

$5 million, or about $78.68 per sale (more than 3 times the purchase price). Company spokesmen promptly claimed that there was no cause for concern as they would make up for the losses through all the new customers the book had brought. But how, we recall wondering at the time? By selling the next Harry Potter book at four times what it would cost in Barnes & Noble? And how, we wondered again, could you put any reasonable value on these losing Internet companies? But the summer of 2000 was not yet the time for questions. It was still a time of faith.

The value of a stock is determined, ultimately, by the stream of earnings it is expected to produce; the same is true even for Internet stocks. But Amazon, the great big river of Internet reverie, produced no stream of profits. Not even a trickle. Moreover, a report by McKinsey & Company found that the best way to value dotcoms was to return to economic fundamentals with the discounted cash flow approach. But it is hard to discount a flow of cash that does not exist.

Yet it was the nonexistence of cash flow that made Amazon.com (AMZN) and many other Internet companies so attractive. Lacking facts, investors were left to use their imaginations. Cash flow could be anything they wanted it to be. Analysts could imagine any price target that suited them. No company stimulated imaginations more than Amazon.com. The company flowed through the entire landscape of Internet-Land mania. From the glacial melt source high in the Andes of technological innovation and speculative imagination . . . to the murky depths of the Gildered Age and the absurd pretensions of *The Cluetrain Manifesto* . . . to the bug-infested jungle of competition and creative destruction . . . to the frauds of the first-mover advantage and hedonic price measures . . . to the myths of the New Man, New Economy, New Metrics, and New Era . . . right down to the delta of washed-out dreams, where all those hyped-up humbugs eventually settle in the mud . . .

Amazon.com flowed through it all.

And never, during this entire spell of absurdity, inanity, and chicanery, could anyone say with any assurance what the company was worth. In place of a bottom line that could have been multiplied to produce a meaningful price comparison, AMZN had only a sinkhole.

Looking at its financial details more closely, Amazon might have had sales of $574 million in the first three months of 2000, but it also had a net loss of $308 million and an operating loss of $198 million. Moreover, compared with the same period of the previous year, although sales had doubled, operating losses had come close to quadrupling. Granted, the company boasted $1 billion in cash and securities, but against that, it

had $2 billion in debt, an accumulated deficit of over $1 billion and only $25.6 million in stockholders' equity.

Lacking the fulcrum of profits on which to lever a reasonable price, a number of approaches were used over the years to come up with an unreasonable one. Remember "eyeballs"? These visual portals were once considered a means of establishing the value of an Internet stock. So was "stickiness"—the amount of time the eyeballs stayed glued to the site. Another common approach was multiplying the rate of sales growth. But, finally, the confederacy of dunces that passes itself off as a group of stock analysts went back to fundamentals. They began to value Internet companies in the same way publishers value a subscriber—in terms of lifetime value.

Indeed, both publishing companies and Internet companies operate on the same basic premise: They spend money to bring in customers. Then, they expect a stream of income (sales, renewals, advertising) from each customer. The value of a company can be determined by calculating the net value of each customer over the lifetime of the relationship and multiplying by the number of customers. Amazon had about 15 million customers at the time. But how much was each one worth?

In February 2000, Jamie Kiggen, an analyst with Donaldson, Lufkin & Jenrette, dreamt his way to a figure of $1,905. We wondered how, in an industry noted for aggressive competition and razor-thin margins (so thin, in fact, that Amazon's margin was negative—minus 39 percent—meaning it lost money on each sale), could the company possibly make nearly $2,000 per customer? It couldn't. The idea was preposterous. Still, it gave investors a price target of $140 a share for AMZN. Another analyst, Eric Von der Porten, of Leeward Investments (a California hedge fund, with less of an attachment to the big river), used Kiggen's model and priced the lifetime value of each customer at just $26. Multiply that by the number of customers, and you get a capital value for the company of about $440 million—or a stock price of about $1.25.[13]

"Person of the Year"

Jeff Bezos, Amazon's founder, would have argued that Kiggen's model was wrong and that it was too early to try to put a value on Amazon because he was not even trying to make a profit. As he explained to *Playboy,* "We are a customer store."[14] He did not mean that AMZN sold customers. He meant that the company focused on the customer instead of on making a profit or even a product. This was another conceit of the Internet Age—

that these companies put the customer on a higher plane. What bread did Jeff Bezos eat? What air did he breathe? Were we supposed to be in awe of him and all the other new Digital Men who "got it" and no longer needed profit margins or products? Or should we have been appalled?

He was 35 when *Time* magazine awarded him its "Person of the Year" title in January 2001. When the going was good, *Time* gushed, "Jeffrey Preston Bezos . . . peered into the maze of connected computers called the World Wide Web and realized that the future of retailing was glowing back at him . . . Every time a seismic shift takes place in our economy, there are people who feel the vibrations long before the rest of us do," rattled *Time,* "vibrations so strong they demand action—actions that can seem rash, even stupid." Well, yes. Very stupid.

Sales might have continued rising at the big River-of-No-Returns. But profits? In the fourth quarter of 2000, Amazon lost $545 million, a figure $222 million higher than that of the same period the year before. Cumulative losses for the company almost exceeded $3 billion. For *Time,* Amazon's losses were "a sign of the New Economics of Internet commerce" and "the idea that in the new global marketplace whoever has the most information wins."

"It's a revolution," *Time* exclaimed. "It kills old economics, it kills old companies, it kills old rules."[15]

But all the River-of-No-Returns killed was investors' money. It claimed to be "the planet's" largest virtual store. It had 23 million registered customers, and Jeff Bezos said it would continue getting bigger and bigger—growing at a compound rate of 50 percent for the next 10 years. That would give it more than 1.3 billion customers by the year 2010. Wow. And sales would hit more than $100 billion. It would be the biggest virtual store in the whole blooming galaxy.

But imagine that you had never heard of Amazon, nor of the New Economy. Imagine that Jeff Bezos came up to you and offered you his company for $14 billion. It has $2.1 billion in revenue. Assets of uncertain value. Billions in debt. And it loses more than $1 billion a year. What would be your reaction? Would you pay $14 billion for the privilege of losing $1 billion per year? Would you want a piece of that deal? In the heyday of the New Era, many people did. Most lived to regret it.

Some people get rich in a revolution. Some people get killed. By October 2001, it was becoming clear who would be the victims—those who believed in Amazon.com and the Information Revolution.

Bezos was of course one of those victims. In 2001, he was awarded the "Fame Is Fleeting Award," by Gretchen Morgenson in the *New York Times,*

"for one of the fastest falls from grace in recent history."[16] She considered it sadly ironic that he was facing irate shareholders only a year after being honored as *Time*'s Person of the Year.

For at the end of 2000, Amazon's stock price showed a decline of 89 percent to the $7 to $10 range (from its December 1999 high of $113). Thus, a pin had pierced the bubble in high technology, and those who "got it" were getting it good and hard. Their day of reckoning had come.

The Cisco Kids

Of all the companies that might have been able to harness the new advantage given them by the Information Age, perhaps none was better placed than Cisco. The company was so admired by investors that they gave it a market cap higher than any other company had ever received. Even after the Nasdaq had crashed, Cisco's CEO John Chambers explained to investors that the company would nevertheless continue to enjoy 30 percent to 50 percent annual sales growth for as far as the eye could see.

But the eye could not see very far. It saw only what it wanted to see. Neither Mr. Greenspan, the world's most celebrated macroeconomist, nor Cisco Systems, recently one of the most envied corporations on Wall Street, really understood what was going on.

As was becoming obvious, it was a capital spending boom—not productivity nor New Era information technology—that made Wall Street's numbers look so appealing. In the late 1990s, businesses all over the planet felt the need to get into the swing of the New Era by spending on information technology (IT). In the perverse logic of the late tech bubble, if they could spend enough, fast enough—their share prices would rise.

But sooner or later, companies had all the routers and multiplexers they needed—even more than enough. Business capital investment fell between 2000 and 2001. And unsold equipment piled up on the shelves.

Meanwhile, Cisco sales, which analysts had expected to grow 30 percent per year for the next 10 years, began falling instead. In fact, in 2001, they were down 25 percent on the preceding year. Like an auto dealer in a downturn, Cisco found itself with its lot full of various makes and models that it wanted to unload—new and used.

"Cisco Systems Capital," reported the company's Web site, "now offers refurbished Cisco equipment with the same warranty protection and support as new . . . but at a lower price." Discounts listed at www.usedrouter.com ranged from almost 70 percent to as little as 20 percent.

"I can buy the equipment for 10 cents on the dollar," said one regular customer. "The stuff we are seeing right now is very often less than a year old and still under warranty."

At its peak in early 2000, Cisco (CSCO) was worth nearly half a trillion dollars. This is the equivalent of about $4,000 for every household in America, or about $75 for every Homo Sapiens on the planet. Meanwhile, Cisco shares traded hands at about 190 times earnings. This implied a growth rate for the company of about 190 percent according to the conventional analysis. In reality, this figure was about 3.5 times the company's actual growth rate. It was also mathematically unsustainable: the higher the rate of growth, the faster the market opportunity would be exhausted.

Cisco's story is well known. In 1984, Sandy Lerner and Len Bosack got together to solve a problem. They needed to make the computers in Stanford University's business school capable of talking to those in the engineering school. They built routers, cobbled together some software, and solved the problem. Henceforth, Stanford's business students could send dirty jokes to the guys in the engineering department via computer. It was not long before other computer users were showing up at Lerner and Bosack's door to get the communications equipment. The couple got married and set up shop in their home—manufacturing the devices themselves and using credit cards as a source of capital.

By 1990, CSCO was a player in Silicon Valley. The Lerner and Bosack team brought in a venture capital group that took the company to the public markets and then forced the founding couple out. Lerner and Bosack divorced in the early 1990s. So they had neither the company they founded nor each other's company.

But if the marriage did not prosper, the company certainly did, and Cisco figured that it needed to offer more than just routers. So in the mid-1990s, it began purchasing other companies involved in the computer communications trade. Cisco acquired one company in 1993, three companies in 1994, four companies in 1995, and seven in 1996, including the $4 billion acquisition of StrataCom, then the largest purchase in the history of Silicon Valley. It picked up 6 more companies in 1997, 9 in 1998, 18 in 1999, and bought 10 in 2000, for a total of 58 acquisitions.

The Cisco kids were certainly on a buying binge. The idea was pretty simple. Customers did not want routers. They wanted solutions to their communications problems. And since the problems had varied solutions, Cisco needed to offer a variety of products. Cisco, in other words, was not a router company. It was a marketing channel for computer communications. When it bought some small company with a useful, but largely

unknown, device, the product was marked with the Cisco brand and launched to the customer base. Negligible sales could go to monster sales almost overnight. One company, for example, that had $10 million in revenues at the time of acquisition, gave Cisco technology that soon generated more than $1 billion in revenues.

This was all very well, but when two new companies a month were being purchased, they were not all likely to produce such spectacular results. In fact, most were likely to be duds. A lot, it turned out, depended on how the accounting was done.

Moreover, Cisco's appetite for acquisitions drove up prices to preposterous levels. It bought ArrowPoint for shares worth $5.7 billion—a lot of money to pay for a company that had a negative book value, had never earned a penny, and had sales of only about $40 million. But what did the Cisco kids care? The company's funds did not represent real money; it was "Cisco scrip"—a new currency provided by delusional investors.

Each share of CSCO stock was thought to be worth about $63. But an investor would earn no dividends, and the company itself earned only 38 cents per share. Even if profits continued to increase at the 1999 rate, Cisco would earn only $3.74 per share in 5 years. If the stock price had continued apace, the company would have been worth nearly $5 trillion, an amount equal to half of the entire U.S. GDP.

What's more, the process of creative destruction, of which Cisco was such an extraordinary beneficiary, was not likely to stop dead in its tracks the moment the company finally reached a level of profitability that justified its price (if ever). That is the trouble with new technology, after all. There is always newer technology, as well as other Lerner and Bosack teams, just waiting for their moments of fame and fortune.

Icahn of the Old Economy

In contrast to Cisco, there was General Motors. Carl Icahn, corporate raider of 1980s fame, was in the news again at the century's end, attempting to force GM to sell its stake in Hughes Electronics—in order to "unlock shareholder value."

GM had more sales, in dollar terms, than any other company in the world—$177 billion worth. But it earned a profit of $6 billion (3 percent of sales). Not only were earnings low, but the other news was not good. GM was losing market share and its unionized workers seemed ready to revolt.

But GM did have a few things going for it. Even in September 2000, $6 billion was a lot of money. Plus, the company had $10 billion in cash. Its

pension plan was over-funded by $9 billion. And it owned a stake in Hughes that was worth $15 billion. Icahn's idea was obvious. He would buy a big enough block of GM stock to be able to force the company to sell the Hughes shares.

The entire company—at its then current stock price—had a value of about $36 billion, less than one-tenth of Cisco's. Imagine that you, personally, could have bought the company. For $36 billion, you would have got a company with $10 billion in the cash register. So, you would only really be $26 billion out of pocket. And then, you could have sold the Hughes holding for $15 billion, so the rest of the company would really have cost you only $11 billion.

You would have had the world's biggest company (producing cars, trucks, and other things you could put your hands on) as well as a spare 1966 Corvette in a garage somewhere for you to drive around. Factories, real estate, giant machinery . . . you would have got it all. Plus, you would have earned about $6 billion each year. Expressed in conventional terms, the operating part of the world's largest company had a P/E of just 1.83. From your point of view, as owner, you would have gotten back your investment money in about 20 months and have earned about $6 billion every year after that. Or, you could have bought 10 percent of Cisco.

Relying on the slogans and feeble-minded dicta of the financial media, you would have avoided GM. GM was "old economy." It was a has-been company that seemed unable to get its act together. Owning GM was definitely not cool.

But Carl Icahn did not worry about being cool. He had a PhD in philosophy from Princeton. In his thesis, he developed the idea that collective thinking is invalid: "Knowledge is based only on what you observe. You talk to me about something, you must relate it to something that's observable."

Of course, George Gilder had no interest in GM. He was interested in GC (Global Crossing), and he couldn't get enough of it when it was trading at 33 times sales and $60 per share. The man must have been beside himself with joy when, in October 2001, he could buy as many shares as he wanted for only 50 cents apiece. Investors had lost 99.9 percent of their money already, but the losses did not stop there. An investor who held on at 50 cents would have lost another 96 percent of his money by the end of the following year, when the stock traded for only 2 cents. But still, maybe the promise of the Information Age would come true at last. Suddenly, late at night, when sensible men had taken to their beds and

only techies, terrorists, and teenagers were still awake, the world's dark fibers would light up with data. And maybe then, Global Crossing's stock would rise . . . to 3 cents!

Dreamers and Schemers

We might laugh, but Gilder, the messiah of the New Era, was still in the wilderness, and who can fault him for that? After all he did no harm. As in every revolution, the real mischief was done by the small cadre of cynical gunrunners who followed in their messiah's visionary footsteps. Who can blame Gilder (or Marx for that matter) for his disciples' excesses?

One such gunrunner was Jack Grubman. He hustled stocks to investors—stocks that would later blow up. And the traffic made him a rich man; he earned as much as $20 million per year as Salomon Smith Barney's telecom analyst. Unlike Gilder, he was not dizzy enough to believe in the cause—he realized it was just a way to separate the fools from their money. Instead of buying telecom stocks, he sold them.

According to press reports, Grubman worked closely with Global Crossing's chairman, Gary Winnick, perhaps advising him on his stock selections. Money was the only driving force of their collaboration. A former Global Crossing employee described Winnick and his cronies as "the biggest group of greedheads in an era of fabled excess."[17]

Winnick, like Grubman, made money on Global Crossing—again, by selling rather than buying its stock. When the telecoms blew up, he managed to walk away with $730 million before the bomb detonated. But other investors were not so lucky: They lost $2.5 trillion in market value. Somehow, Grubman forgot to tell them when to sell. Instead, as late as spring 2001, he wrote about the "historic opportunities to buy world-class assets such as Global Crossing that are evolving into world-class operating businesses at compelling value." On that same day, Global Crossing shares sold for $7.68. If they were "compelling" then, you would think the shares would be absolutely irresistible later on! Alas, after the company went bankrupt, Grubman, who owned a $6 million townhouse in Manhattan, with neither mortgage nor lien, simply "discontinued coverage" of the stock.

All of this did not mean much to Gilder. No, no—he really was not to blame. For he was still staring at the skies, thinking about gigabits, and

scribbling away . . . when creditors pulled up in front of his house and wondered how much they could get for it.

But how had it come to this, he asked himself? After all, he had listened to the technology and had begun hearing voices just as the Information Revolution was getting underway. In a better world, things might have gone differently, he convinced himself. After all, he had been earnestly blathering before large crowds . . . and making good money at it: 350 people had paid $4,000 each to attend his Telecosm conference in 1997; and his speeches, heard by thousands, earned him $50,000 a time. Moreover, in 1999, his list of recommended tech stocks had averaged more than 247 percent return, and by the end of 2000, his newsletter boasted 70,000 subscribers paying $295 a year. At the bubble's peak, just one "gildered" word could boost a stock price 50 percent in a single day.

But then, the New Era messiah had stumbled over a bit of bad luck. Techs crashed, and suddenly people were not interested in attending his conferences or reading his newsletters, for they no longer seemed to care how many bits you could crowd onto the head of a silicon chip. Worse, in January 2002, came the news that his favorite corporation—the company he thought would "change the world economy"—had filed for bankruptcy protection. Gilder reflected on his fortunes over those past few years: "You can be just fabulously flush one moment, and then the next, you can't make that last million-dollar payment to your partners, and there's suddenly a lien on your house . . . For a few years in a row there, I was the best stockpicker in the world. But last year you could say . . . I was the worst."[18] Poor George, very rich when things were going his way, had gone broke when they changed direction.

But to his credit (not his benefit), at least the guru had put his money where his mouth was. He had not merely misled investors; he had misled himself, too. He had bought into everything—Global Crossing, the New Era, his own publishing business.

Still suffering from New Era hallucinations, he continued to have faith in the wonders of technology even after the Nasdaq's crash. He later expressed his belief in the power of his "telecosm," claiming that it was "transforming the world economy and every existing political and cultural arrangement," and could significantly improve productivity: "Its ability to transmit any amount of information, to anyone anywhere, anytime, at a negligible cost, will unleash surges of productivity as yet unimagined."[19]

Behind Gilder's pensée was an even nuttier idea—that information, in the form of digitized data, could make people rich. But then his thinking was very much in the spirit of the times, when a powerful sense of optimism pervaded American civil society.

The Value of Information

"Cogito, ergo sum" (I think, therefore I am), wrote France's most famous philosopher, René Descartes. The proposition was self-evidently absurd. If Descartes had thought he was a chipmunk, would he have been one? One could spend a lifetime poking around in the corpus of Descartes' œuvre, but the defect is right there on the surface: proof of existence described only through the dark glass of the mind; that things are whatever you think they are. Not that we humans can know it any other way. But Descartes' self-centered assertion is an invitation to trouble, for it flatters our self-confidence and lures us to destruction.

By the end of the 20th century, Americans had come to believe that they lived in a benign world. Like Descartes, they believed that whatever they thought was true and that they could think their way to wherever they wanted to go. Information technology was moving as fast as a beer truck through a bad neighborhood and promised similarly heady results. What a wonderful world it was, now that American-style capitalism had triumphed over all competitors! After all, anyone with sense enough to buy and hold stocks could get rich (or at least, that is what they thought). Granted, there would be problems, but none that they could not think through to find a solution.

During the lunatic phase of the great bull market of 1982 to 2000, it was widely believed that the important parts of life could be digitized. Information alone, specifically digitized information, was thought to be a more valuable resource than oil or farmland. The new information technologies were supposed to have the power to bring about a number of improvements, including healing the sick, raising prosperity levels, eliminating the business cycle and ending war forever. Now, everyone would have access to the latest healing information, and everyone would be able to use the Internet to tap into the secrets of wealth that were previously guarded closely by powerful, elite organizations.

Booms, busts, and bear markets, as everyone knew, resulted from imperfect information. Businesses typically overdid it. They borrowed too much and produced too much when times were good. And then, thanks

to overdoing it, times went bad, as there were soon too many products on the market and too much debt. Information would eliminate these problems, as businesses would have more accurate and timely data on which to base their projections. Then, with no more downcycles in business, there would be no more falloffs in earnings and no more reasons for bear markets. And war? Wasn't war the result of a failure to communicate? Now that people could connect to the Internet and communicate in this one, vast, new, free market—wouldn't war be a thing of the past, too? For the entire world would now have access to the undeniable superiority of the U.S. model of free elections and a free economy. Surely all nations would put down their weapons, take up computers, and get on with the serious business of life—making money!

People's imaginations ran wild. In their fantasies, they pictured the little 1's and 0's of the digital age marching forward forever in a world of eternal peace, ever-increasing prosperity, and constantly expanding contentment. That is what people wanted; surely the latest information technology would help them get it.

There were, of course, theoretical problems. You could have set down the most powerful computer ever made—with the most complete database of information ever assembled—in front of the smartest man in Plato's Athens. What good would it have done him? Would he have any idea what he had in his hands? Imagine Napoleon shivering in his tent. Give him the price of grain in New York or the number of atoms in a cubic centimeter of cognac and you do him no favor. You might as well ship him a crate of sunscreen. Information out of context is useless.

Information is useless not only when it is unwanted or out of context, but also when it is in too great supply, for then it has to be sorted, rerouted, or thrown away. "Paralysis by analysis" is the popular expression. In any given situation, an infinite amount of information might be brought to bear. Any of it might be relevant and useful. But time is limited.

Napoleon knew full well he could not wait for every possible message to make its way to him. Nor did he have the luxury of weighing every bit of information just in case the optimum course of action should reveal itself. Like every general and every other human on the planet, he had to act based on imperfect information—guessing what was really important and hoping he had the information he needed. Every bit of information beyond what he actually needed was a cost—and potentially an expensive one. For every bit of extra information slowed him down; he had to

evaluate it for relevance and authenticity and, ultimately, absorb it into his view of things or reject it.

Graffiti on the Internet

There are many examples from military history in which the quality and integrity of information were decisive. In the middle of World War II, the Allies dressed a dead man in a British officer's uniform. They then fastened to the body a set of plans for their counterattack on Hitler's army in Europe. The plans were, of course, intended to mislead Hitler about Allied intentions. The body was then dumped into the sea, so it would wash ashore where the Germans could find it. Hitler also believed he had a network of spies in England who would be able to fill him in on the coming landings. But these spies had almost all been discovered and "turned," so they were feeding false information reports to the Nazi high command. Thus, the information that Hitler was receiving was worse than no information at all. It lacked integrity. The more of it he had, the worse off he was.

Solzhenitsyn tells us how the Russian army in World War I was commanded by German-speaking officers from Prussia, who would transmit their orders and battle plans in the German language. The enemy often intercepted and read these messages, whereas Russian troops, for whom the plans were intended, found them incomprehensible. In our own War Between the States, Lee's plans at Antietam were betrayed to the Yankees when a Southern officer used them to wrap a cigar—and left them by mistake to be discovered by Union troops.

In the military, the units charged with gathering information and separating fact from fiction are called "Intelligence" units. This screening process is tough work, and it gets tougher the more facts and fictions there are to sift through. Today the Internet, though ultimately just a means of communication, delivers an almost infinite number of facts and fictions. The tough part—the "Intelligence" work—is sorting them out.

Although information is free on the Internet, free information sometimes turns out to be worth a lot less than you pay for it. Barely had the Internet begun working than fraudsters were using it to mislead investors. A typical scheme, such as the one perpetrated by a student at Georgetown Law School, involved buying the shares of some marginal company and then going on the Internet, spreading rumors or outright lies to ramp up the price. This was easier to do than misleading the Wehrmacht. You only

had to announce some new breakthrough, some new contract, a rumored buyout, new technology . . . whatever. The whole idea was to create the kind of buzz that got people talking about it. Then supposedly reasonable "investors" would jump at the chance to buy a stock they knew nothing about, on the basis of a recommendation from someone they did not know, founded on information whose accuracy could not be affirmed and whose source could not be traced.

A lawyer defending one of the alleged Georgetown manipulators responded that it was impossible to mislead people on the Internet: According to him, Internet postings were nothing but "graffiti," with no more informational content than graffiti has artistic content. The lawyer's argument was that his client had just used the Internet as a graffiti artist uses the wall of a public building . . . or perhaps as a dog uses a tree. He pollutes it, perhaps vandalizes it, but no serious person would mistake it for useful information. But here, junk life imitates junk art. Pumping and dumping stocks on the Internet did in fact work. In just a few hours, the graffiti artists of the Internet were able to sell their shares at a profit.

Yet while information may be cheap, knowledge is dear. It takes time to learn how to do anything. It can take a lifetime to master a trade—even one that is as rudimentary and analog as woodworking or gardening. And the Internet did nothing to expand the supply of time. On the contrary, it made time more dear. Herbert Simon, winner of the 1978 Nobel Prize in Economics, gave the following reason for this: "In a world where attention is a major scarce resource, information may be an expensive luxury, for it may turn our attention from what is important to what is unimportant."[20]

Internet investors treated every digit as if it had value. In fact, few had any worth whatsoever. Many were not only valueless, but had antivalue, reducing the sum of knowledge or wisdom in whomever took them seriously.

By the end of the 20th century, America was suffering from information overload. As one commentator put it, "Americans today are literally drowning in information . . . we find ourselves awash in a vast ocean of data, what with the Internet, nonstop cable TV news, e-mail, voicemail, faxes, pagers with stock quotes, cellular phones and an explosion of newspapers, magazines and books and well, you get the idea."

He cites "data glut" as a serious issue in the American workplace, and finds that the average worker now spends more than half his or her day processing documents. Meanwhile, paper consumption per worker tripled (to 1,800 pounds annually), in the 1980s, and "third-class mail" increased at 13 times the population growth rate, he reports. Nowadays,

office workers often spend hours reading and answering e-mail, not to mention voicemail, faxes, and the rest. Initially a blessing, e-mail is now a curse to those whose inboxes are inundated with "FYI" messages and other information on a daily basis.[21]

In 1997, author David Shenk found that "information overload fuels stress and promotes faulty thinking." The data glut we all slog through every day at work simply "reduces our attention span" and "makes us numb to anything that doesn't lurch out and grab us by the throat" Shenk concluded.

Having two mistresses is not necessarily better than having one. Nor is eating two lunches an improvement over a single one. But information was supposed to be different, wasn't it? The more you had, the richer and smarter you were supposed to be. Yet, in 2001, people seemed no brighter than they had been before the Information Age began. Most movies seemed no better then those of the 1950s and 1960s; art was becoming more grotesque; the editorials in the *Herald Tribune* were as absurd as ever; and investors appeared to be making increasingly ridiculous decisions. What was more, markets seemed totally perverse in nature, for while everyone proclaimed the benefits of the Information Age, it was, ironically, the most ignorant who seemed to reap its greatest rewards.

A Hot Tip

A conversation overheard one night in car number 8 of the Eurostar provides evidence.

We were traveling en route from London to Paris, reading Alan Abelson in *Barron's,* when two men entered the car and sat down nearby. They were casually dressed. Mid-40s. Americans. The sort of men you might find managing an electronics store or enjoying the Super Bowl with friends. One took out a Swiss Army knife the size of a chain saw and opened a package. Out of this, he drew a new watch and put it on—a monstrous thing, it looked like a flying saucer had landed on his wrist. Soon they were joined by a third man whose belt was too tight.

"Whoa," said one, looking at the stock pages of *USA Today,* "look at this . . . I bought this company at 30 two days ago. It's up to 47."

"I got a friend who knows someone at the company. They're going to announce a merger or something. The stock is supposed to go to between 70 and 75."

"What's the name of the company?" asked the one whose belt was too tight.

"It's called e-Plus, I think. Yeah, I think there's a hyphen in there. E-Plus. The stock symbol is PLUS."

"What's it do?"

"I don't know . . . computers or something high tech. But I've already made $1,700 on this stock."

"Why didn't you tell me about it? I don't like to miss a move like that. What d'you say was the symbol?"

"P-L-U-S."

A moment later (and we are not making this up), he had his cell phone out.

"Lenny? Hi, I'm calling you from France." [Note: We were still in England.] "Yeah, I'm on the train. Can you hear me okay? Look, I want you to check out a stock for me. It's called e-Plus . . . No, I don't know what it does . . . technology or something." Then, turning to his friend, "He says he's never heard of it!" Then, back to Lenny on the phone, "Okay . . . look, my buddy says they're going to make an announcement or something. Buy me 20 shares. The price should be about $47. It's going to $75. Okay . . . No, I'm in France . . . so I can't send you a check until next week. Just 20 shares, okay?"

Oscar Wilde complained of people who knew "the price of everything and the value of nothing." In this age of information, these guys were ignorant of everything except the price. The company's numbers, its business plan, its position in the industry, its management, its record of the past and hopes for the future—all were as unknown as the contents of a sausage or the voter registration rules of a distant galaxy.

These fellows were not investing. They were having a lark. They were like baboons at a Buckingham Palace dinner party. Throwing the food around. Laughing. Playing. Getting rich. They had no idea of the rules. No concept of the history. No clue about the risks. Investing was a game to them. And thanks to their ignorance, they were winning.

Did e-Plus have earnings? Did it really have a solid business? Do not bother to check the fundamentals. Most likely, there were none. If you had to ask, it was not for you. The more you knew, the less likely you were to want to buy it. And if you didn't buy it, it couldn't make you rich.

This kind of stock play was not one you should approach with information . . . and certainly not with knowledge, or with its distilled derivative—wisdom. It was the kind of speculation that needed to be made in near-complete ignorance. With reckless abandon, even.

The prevailing formula of the New Era was that Information = Wealth. Information was thought to be the capital of the age. The reciprocal of

this algebra was that Ignorance = Poverty. But the investment markets of the late 1990s seemed to show that the exact contrary was also true: At least a certain kind of ignorance was producing spectacular stock market profits. Ignorance = Wealth . . . and at the same time Information = Wealth . . . ergo, we had the proof of what we had guessed: Information = Ignorance.

Swamped with facts, blinded by details, overwhelmed by an infinity of data, and paralyzed by endless analysis—information was making us all dumber.

And maybe poorer, too. The inflation of the information supply rendered it as worthless as Weimar Deutschmarks. Like any inflation, we were impoverished by it. And, like currency during an inflation, the information, knowledge, wisdom, and judgment that had been saved up for so many years and used to guide our investment decisions was devalued.

The Lure of the Crowd

The surfeit of information makes people dumber in another curious way. People become numb to the subtle details and nuances that they actually observe. As processing information takes time and effort, the more of it you have to deal with, the more likely you are to seek shortcuts. Popular interpretations offer a substitute for careful reflection or observation. In other words, instead of actually figuring things out for themselves, people become more susceptible to collective thinking. Public thinking replaces individual thinking—simply because there is too much information to process. Unable to keep up with all the data from Wall Street, for example, people are forced to rely on summaries from CNBC or Louis Rukeyser.

The pretense of the Information Age was that the introduction of the silicon chip and the World Wide Web had suddenly revealed the value of information. In fact, the amount of information available to people has steadily increased over the past 200 years with new technology and new material: the telegraph, telephone, teletype, radio, television, fax, Minitel, and cheap printing processes. An individual in the 20th century had vastly more information than an individual in the 18th century.

Is it just a coincidence that mass thinking has emerged with mass media . . . or that mass thinking has consequences of its own?