

UNINTENDED CONSEQUENCES: A REVOLUTION BETRAYED

How the Recent Financial Debacle Started with a 1980s Revolution in Manufacturing

In the mid-1980s, just as Tocqueville Asset Management was being born, an overwhelming global consensus had developed that U.S. manufacturing was dying. Seemingly irrepressible Japanese exports were gaining market share everywhere, U.S.-based Japanese subsidiaries were beating American competitors on their home ground, and newer assembly operations in developing countries (often owned by U.S. parents) were further encroaching on U.S. manufacturers' markets. Most experts agreed that the U.S. economy was becoming "hollowed."

The 1980s Death of U.S. Manufacturing: a Premature Announcement

Yet, something momentous was indeed happening in industrial America. A true revolution in how to think about and measure manufacturing performance was taking shape, which you could observe if you visited plants around the country, as I did regularly at the time. Classrooms were set up on many plant floors to teach these new concepts.

In true contrarian fashion, I decided to launch a research effort to document how American manufacturing not only was not dying, but was being reborn.

This view was original enough to get me invited as a speaker to the annual meeting of the National Association of Manufacturers. But it was also contrarian enough that I was the only optimist, while the other speakers, all senior members of the association or business economists, uniformly agreed that the situation was dire and perhaps hopeless.

Beneath the obvious malaise, the basic problem we were uncovering was that America's industry was approaching the 21st century with accounting and management-control systems that basically had not changed since the 19th century. Then, easily-attributed materials and direct labor had accounted for the bulk of manufacturing costs. As a result, it had made sense to allocate overhead (other costs) in proportion to the direct labor going into each product. By the mid-1980s, however, direct labor had declined to no more than 10 to 15 percent of total manufacturing costs — 5 percent in lighter industries such as electronics.

So we now were allocating the majority of overhead costs in a totally arbitrary fashion, with some highly misleading conclusions as to which products were contributing to the bottom line and which were not. Moreover, by most estimates, even cutting direct-labor costs in half through layoffs and mechanization would still not have made U.S. products competitive against those of the Japanese or low-cost offshore assemblies.

A Cultural Revolution in Manufacturing

Here, for ease of reading, I will offer a medley from two reports that were written at the time (more than 20 years ago), from which I will paraphrase and edit liberally. One is the transcript of a speech I gave to the Japanese Chamber of Commerce in New York (*America's New*

Industrial Revolution — 2/20/1987). The other is a report I wrote in February 1988 (*Ben Graham Revisited: The New Challenge of Value Investing*). Both were largely inspired by the work of Harvard Professor Robert S. Kaplan, a member of our advisory board, who was particularly helpful in awakening us to the fact that we, as both financial analysts and corporate managers, were working with inadequate, even misleading, tools (*Beyond Reported Earnings* — Tocqueville Asset Management, July 1987):

*Today, many of the investments a company must make to survive and prosper over the **long term** are increasingly intangible in nature: training, research and development, engineering, software development, etc. The results from these strategic investments will often materialize over periods longer than the fiscal years used for shareholder reporting. But under existing accounting rules, most of these “investments” must be charged to current earnings. As a result, a company that invests for its long-term survival will **report** depressed earnings under current accounting practice, while another that does not can, for a time, live off past investments and report high earnings, all the while sliding irrevocably toward its ultimate demise.*

*Today, the measure of a company’s **future** ability to perform is less a function of its past record than of its current **flexibility**, and its real long-term value is increasingly a function of its competitive strategies: the organizational changes and investments necessary to become a highly flexible, “world-class” competitor. Broadly, these changes can be grouped as follows:*

Quality *[In the mid-1980s] a number of leading American corporations calculated that the cost of uncovering less-than-optimum product quality — in terms of waste, rejects, time lost, rework, and customer service — accounted for up to 30 percent of their total manufacturing costs. The implementation of an effective design-manufacturing-distribution strategy that incorporated strict quality control at every step of the engineering and production cycle would achieve a significant cost advantage over competitors who merely corrected defects after the fact.*

Time *Technological advances and market conditions have also dramatically shortened the product life cycle. For example, Sony’s introduction of the Walkman, in 1979, was an instant success. Within months, however, the original model had been copied by a multitude of manufacturers in lower-cost countries. Yet Sony was able to maintain its leadership and protect the market it had created by generating a constant flow of new models (more than 100 between 1980 and 1987).*

To achieve this level of performance, a company must not only reduce the length of time between design, engineering, and production cycles, but also must develop manufacturing facilities that are flexible enough to shift quickly, and economically, from the production of one product to that of another.

Inventories *Once it was realized that cuts in direct labor alone would not be sufficient to reduce America’s manufacturing disadvantage, attention turned to the next “usual suspect”: inventories. In the early and mid-1980s, U.S. interest rates were very high. Carrying excess inventories thus constituted a considerable cost of doing business and a*

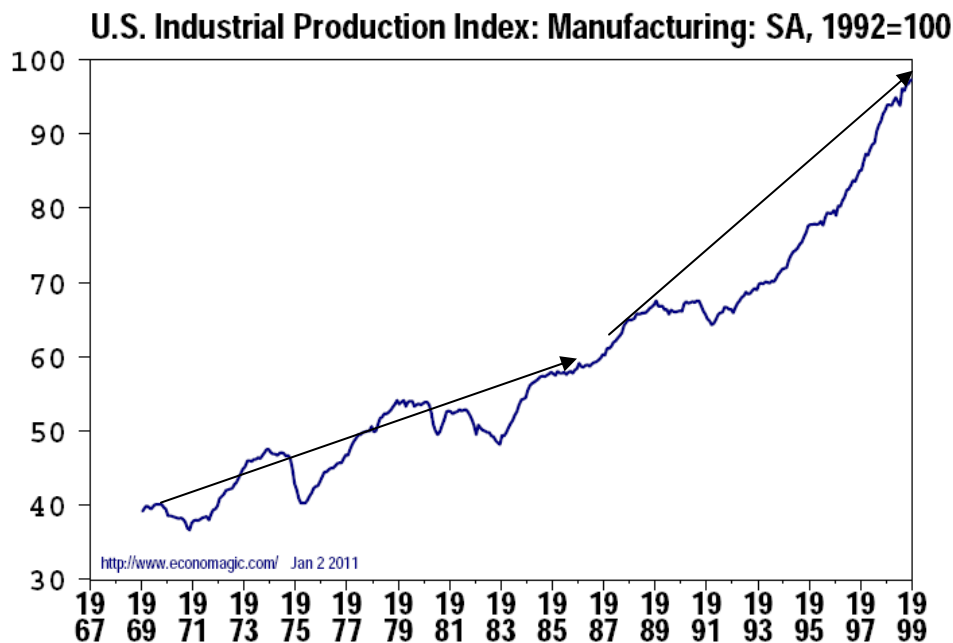
competitive disadvantage against Japan, where interest rates were much lower. American corporations did considerably reduce the amount of inventories they were carrying, thus freeing up expensive cash for other uses. But they initially did this on (again) the usual suspects — inventories of raw materials and finished products — whereas the real sign of an ineffective and excessively costly manufacturing organization lies in “work-in-process” inventories. Work-in-process inventories are a good measure of hidden costs in the manufacturing process because, if a plant is not efficient, this is where small piles of parts and semi-finished products accumulate.

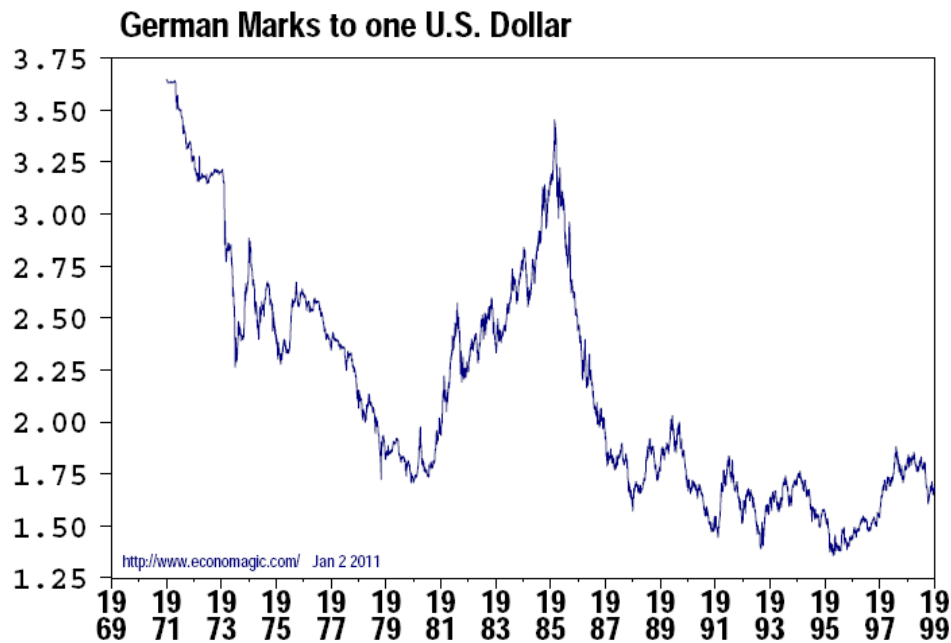
The real change that was needed was an overhaul of manufacturing organizations so that the flow of materials could become quicker and more efficient; so that there would no longer be these little piles of parts and semi-finished products waiting on the plant floor to be picked up; and so that quality could be improved enough to eliminate the need to bring in defective parts for rework, and so on. This real change only started happening in the second half of the 1980s.

In summary, “competitive advantage” can be regarded as a conglomeration of elements including, on the one hand, quality, manufacturing process, design, innovation, etc., and on the other, logistics — e.g., the time it takes to bring a product to market and the cost of bringing it there.

It Worked! (Initially)

As a result of all these new concepts and associated efforts — and, it must be said, with the help of the U.S. dollar’s returning to more manageable levels after an early 1980s spike — the growth of U.S. manufacturing production accelerated noticeably in the 1990s from the previous 15 years (after a pause during the 1990 recession).





The Revolution Betrayed (1990s and Beyond)

Unfortunately, after its initial successes on the global competitive landscape, the spirit of the “New Industrial Revolution” as an unending pursuit of quality and efficiency was corrupted by a new generation of leaders who were short-term-minded and more interested in financial engineering than in manufacturing excellence. Less impressed by the nuances and *cultural* aspects of past achievements, these new leaders interpreted them as the result of traditional cost-cutting, whose results could more readily be seen in quarterly earnings reports — even if it took some playing around with accounting.

Instead of pursuing continuous improvement in existing operations, when there were no “usual suspects” (especially labor) among the costs left to squeeze, these new so-called leaders engaged in frantic merger-and-acquisition programs in the hope that there would still remain some costs left to cut from the combined companies. “Economies of scale” was the reigning term of art.

Thus emerged a new corporate culture that was not only ruthless, but also increasingly unethical. The most visible examples of this new class of corporate leadership were Sunbeam’s Al Dunlap and the managers of Enron Corporation. Here is, with Wikipedia’s help for memory, a summary of the two episodes:

Al Dunlap took over as CEO of Sunbeam Corp. in 1996. He was best known as a turnaround specialist and downsizer, a reputation he had gained, in particular, as CEO of Scott Paper. The ruthless methods he employed to streamline ailing companies by laying off thousands of employees at a time, and then quickly selling the companies off, had won him the nickname of “Chainsaw Al.”

Dunlap's usual, immediate cost-cutting exercise resulted in Sunbeam's reporting record earnings the following year. However, when he was unable to find a buyer by 1998, he instead decided to buy controlling interests in camping-gear maker Coleman, coffee machine maker Signature Brands (Mr. Coffee), and smoke-detector maker First Alert, all of which raised some eyebrows.

After the company's controller admitted to the board that Dunlap had instructed him to push the limits of accounting principles, Dunlap was fired. Three years later, in 2001, the Securities and Exchange Commission sued Dunlap, alleging that he had engineered a massive accounting fraud.

First, Dunlap and others had created the impression of a greater loss in 1996 in order to make it look like the company had experienced a dramatic turnaround in 1997.

Moreover, Sunbeam became suspected of selling products to retailers at large discounts but storing the products in third-party warehouses, to be delivered later. This is an accepted accounting practice as long as the sales are booked *after* delivery. However, Dunlap booked the sales immediately, to boost current reported results.

He also had offered incentives for retailers to buy products that would have otherwise been sold by Sunbeam later in the year, a practice known as "channel-stuffing." As it turned out, Dunlap had sold retailers far more merchandise than they could handle. With the stores hopelessly overstocked, unsold inventory thus piled up in Sunbeam's own warehouses.

Finally, the SEC argued that the purchases of Coleman, Signature, and First Alert were made to conceal Sunbeam's growing problems.

As a result of all these shenanigans, Sunbeam faced large losses when the time of reckoning came, by the second quarter of 1998, and was eventually forced into bankruptcy.

Dunlap was also suspected of irregularities at Scott Paper and, not long after the SEC sued him, *The New York Times* reported that he'd engineered a massive accounting fraud at Nitec, a paper-mill company he had presided over from 1974 to 1976, when he was fired due to his abrasive management style ("If you need a friend, buy a dog!"). An audit by Arthur Young revealed numerous irregularities, including inflated inventory and nonexistent sales — circumstances similar to the Sunbeam case.

Enron Corporation, before its bankruptcy in late 2001, was one of the world's leading electricity, natural gas, communications, and pulp-and-paper companies, with claimed revenues of nearly \$101 billion in 2000. The company was a favorite of Wall Street, and *Fortune* had named Enron "America's Most Innovative Company" for six consecutive years, from 1996 to 2001. At the end of 2001, however, it was revealed that Enron's reported financial condition was sustained substantially by institutionalized, systematic, and creatively planned accounting fraud: It turned out that its award-winning talent for innovation had primarily been exercised in the areas of accounting and reporting.

Enron's management reportedly did not bully its employees. In fact, the company made *Fortune's* 2000 list of the "100 Best Companies to Work for in America," and was praised by many, including labor and the workforce, for its large long-term pensions, benefits for its workers, and extremely effective management.

Instead of bullying its employees, as Dunlap did at Sunbeam, the company's management showed aggressive vindictiveness against its critics, particularly financial analysts, whom it viewed with contempt as glorified stenographers and did not permit to question management statements or reporting. This also became the pattern for dealing with accountants, lawyers, and the financial media.

In 1993 Enron's CFO, Andrew Fastow, had begun to put the company's debts and losses into "offshore" entities that were not included in the firm's financial statements, thus allowing it to maintain a seemingly robust balance sheet and to preserve its critical investment-grade credit ratings. These entities also created a dangerous spiral, in which *each quarter* corporate officers would have to perform more- and more-contorted financial deception to create the illusion of billions in profits — while the company was actually losing money. For example, Enron adopted "mark-to-market" accounting, in which anticipated future profits from any deal were tabulated as if real today. Thus, Enron could record gains from what might turn out to be losses over time.

As was later discovered, many of Enron's recorded assets and profits were inflated, or even wholly fraudulent and nonexistent, and the company filed for bankruptcy on December 2, 2001. In addition, the scandal caused the dissolution of Arthur Andersen, which at the time had been one of the world's top accounting firms.

The Dunlap saga and the Enron scandal are just the most striking examples, among many other, less spectacular ones, of how *strategic* business management has little by little been superseded and corrupted by *financial* management in American corporations. As this has happened, it is not entirely surprising that it has been accompanied by a general deterioration in the business and financial ethical environment.

Everything Starts at the Top

The new breed of corporate managers has adopted an increasingly short time horizon for measuring and rewarding their results. Bonuses and stock options which, in recent years, have become the main components of executive compensation, typically have been granted on the basis of each fiscal year's financial results and have become increasingly remote from any long-term strategic goals or achievements. The option component of the package, in particular, creates a large incentive for management to do everything possible to push up their company's stock price, which will create capital gains when the options are exercised and the stocks sold.

Indirectly, these incentives have been a contributing factor to the spreading expediency and deteriorating ethics in corporate culture. If corporate management bullies employees into reaching mandated, sometimes unrealistic, goals or else lose their jobs, there will be a temptation to massage figures accordingly. Similarly, accountants and lawyers can sometimes be intimidated into taking a laxer view of standards, rules, and regulations.

Wall Street Abets

Deteriorating ethics have not been confined to corporations. Financial analysts, already under pressure from their firms to avoid negative comments about important investment-banking clients, also risk losing professional stature if they are denied privileged access by corporate managements. But other factors have been at work as well.

Technology and economics, in particular, have contributed to the increasingly short-term bias of financial markets. From memory, the cost of buying 1000 shares of a \$30 listed-company stock might have been somewhere around \$300 (1 percent) in the mid-1970s; the same transaction could probably be executed today for \$20. Not necessarily with the same care and service as before; but the definition of “best execution” by our regulatory agencies has evolved from including a variety of quantitative and qualitative criteria to mean mostly “in the fastest and cheapest way.”

While costs to the brokers have declined substantially too, this nevertheless has squeezed margins *per transaction*. What do you do when your margins decline uncontrollably? You try to make it up on increased volume, and this is what Wall Street did — quite successfully, in fact.

Based on a chart offered by Alan M. Newman in *Crosscurrents* (10/15/2009), the dollar trading volume in U.S. stocks, which had generally remained below 30 percent of Gross Domestic Product for about 60 years, shot up in the 1990s to reach over 400 percent of GDP in 2009. This was achieved in two notable ways:

Encouraging short-term trading Based on NYSE data, the mean stock holding period by U.S. investors fluctuated in a range of about 5 to 7 years in the 35 years between 1940 and 1975. According to James Montier, of the investment-management firm G.M.O., it has now declined to approximately *six months*!



As reformed internet-bubble maker Henry Blodget remarks in “Clusterstock” (8/8/09), “holding stocks for six months isn’t investing...It’s really speculating. When you are speculating, there’s no reason to pay attention to things like fundamental analysis, valuation, future cash flows, and all the other stuff they teach you in security-analysis school.”

In a way, the management team at Enron wasn’t entirely incorrect to regard financial analysts as glorified stenographers. Over the past 25 years or so, with the complicity of the “bubble” TV channels (CNBC *et al.*) and other media, a cozy arrangement has developed between corporate managements and financial analysts. Management “whispers” to leading (or favored) analysts an “educated” guesstimate of the earnings they are likely to report in the coming quarter. This becomes the “Street” consensus, widely shared with the public. The company then reports actual earnings a few cents per share or more above the consensus (in the new financial sports-like reporting language, it “beats estimates”) and *shazam!* traders bid the stock up.

Needless to say, speed of communication and execution are more important to this new arrangement than fundamental investment analysis, and this speed has contributed to the increasingly short-term culture shared by both Wall Street firms and corporate managements.

Selling more products Another way to increase sales volume is to enlarge one’s product offerings. This was, at first, easily done by promoting “derivative” products, such as options, which could allow a speculator to gamble on stock movements without putting up much capital, while still paying substantial commissions. Meanwhile, options on industrial or agricultural commodities, as well as interest-rates, proliferated well beyond their traditional use as hedging instruments for industrial and other businesses.

Today, you can buy an option on almost anything — including “volatility” itself. The VIX index, for example, is *the square-root of the risk-neutral expectation of the S&P 500 variance over the next 30 calendar days* (sic!). It is calculated and disseminated in real time by the Chicago Board Options Exchange (CBOE), and VIX options have been actively traded since 2006. You too can buy one, if you understand what it is.

Meanwhile, all kinds of mutual funds, exchange-traded funds, and hedge funds also proliferated.

More recently, offered either as custom-made products to institutions or through mutual funds to the mass-market, *synthetic* products have been expanding rapidly. These products, through a sophisticated combination of options, futures, and contracts, create an investment product that did not exist as such in the market but is expected to mimic the behavior of such a product if it existed. And you thought quantum mechanics was strange.

Securitization was an associated phenomenon of the synthetic-product craze. It essentially consisted of putting together various commercial or financial assets into a security that could be sold to the public. The notorious mortgage-backed securities were the most popular until, through a lack of discipline, quite a bit of ineptitude, and a smattering of fraud, they triggered the recent financial debacle and, in its wake, the Great Recession of 2008-2009.

Computers and Math Wizardry over Fundamental Financial Analysis

By now it should be fairly clear that traditional financial analysis has a fast-disappearing role to play in this new environment of virtualization and accelerated trading. On the other hand, computer wizards that can create programs and algorithms for trading are in great demand. In fact, many of the complex products mentioned above would not have been possible without computers to both create and trade them.

And there's more to come. We now possess computers that will either detect some pricing discrepancies or garner early information about what orders other institutions are entering, and will *automatically* generate buy or sell orders, virtually without human intervention. Some of this is referred to as "high-frequency trading," and for good reason: We are no longer talking about response times measured in seconds (which would already stretch the calculating and physical abilities of most traders); we are talking about milliseconds, and contemplating response times measured in *nanoseconds* (billionths of a second). No one knows for sure how much of this high-frequency trading takes place, but I have seen estimates as high as 50 percent and even 70 percent of the daily volume on the NYSE.

If this makes you a little dizzy, you should also know about what has become known as the "Flash Crash." On May 6, 2010, within *minutes*, the Dow Jones Industrial Average plunged about 900 points, only to recover those losses soon thereafter. It was the biggest one-day point decline on an intraday basis in Dow Jones Industrial Average history. Apparently, a mutual-fund firm's algorithm started selling an unusually large number of E-mini S&P 500 futures contracts, exhausting the available buyers; then high-frequency traders' computers started aggressively selling, accelerating the effect of the mutual fund's selling and contributing to the sharp price declines. The price of the E-mini S&P 500 contract fell 3 percent in just *four minutes*. During this same time, cross-market arbitrageurs who did buy the E-mini simultaneously sold equivalent amounts in the equities markets, driving the price of the S&P 500 index down by about 3 percent as well.

Still lacking sufficient demand from fundamental buyers or cross-market arbitrageurs, high-frequency traders' (HFTs) computers began quickly to buy and then resell contracts to each other — generating a "hot-potato" volume effect (Wikipedia) as the same positions were rapidly passed back and forth. Between 2:45:13 and 2:45:27 (a matter of *seconds*), HFTs traded more than 27,000 contracts, which accounted for about 49 percent of the total trading volume, while buying only about 200 additional contracts net.

To Whom?

Algorithms or not, one thing computers cannot learn (yet?) is common sense.

Even before computers became so prevalent, there were multiple examples of speculators trying to "corner" a market by accumulating most of the available supply of a financial asset or commodity, thus pushing prices up in a thinning, publicly traded "float." Most of these instances ended poorly, because when time came for the speculators to cash in on their paper profits by selling out, the perennial question arose: "To whom?" Hence the added danger of mathematically-engineered trades which, in addition, are entered automatically by computers.

An early warning of this type of danger was Long-Term Capital Management, a hedge fund that failed spectacularly in the late 1990s. LTCM was founded in 1994 by John Meriwether, the former head of bond trading at Salomon Brothers, who recruited some brilliant mathematicians and traders as well as Myron Scholes and Robert C. Merton, who shared the 1997 Nobel Prize in Economic Sciences. In 1998, LTCM lost \$4.6 billion in less than four months following the Russian financial crisis. The fund was closed in early 2000.

LTCM had used complex mathematical models to take advantage of fixed-income arbitrage opportunities in U.S., Japanese, and European government bonds. Price differences between a 30-year Treasury bond and a slightly shorter Treasury bond should be minimal, since both will see a fixed payment roughly 30 years in the future. However, small discrepancies will arise between the two bonds because of differences in liquidity. By a series of financial transactions, essentially amounting to buying the cheaper bond and selling “short” the more expensive, but more liquid, bond, it would be possible to make a profit as the difference in the value of the bonds narrowed over time.

Because these differences in value were minute, the fund needed to take highly-leveraged positions to make a significant profit. At the beginning of 1998, the firm, which had equity of \$4.72 billion, had borrowed more than \$124.5 billion.

In August and September 1998, when the Russian government defaulted on their bonds, panicked investors sold Japanese and European bonds to buy U.S. Treasury bonds. The profits that were supposed to occur as the value of these bonds converged became huge losses as the value of the bonds diverged. By the end of August, the fund had lost \$1.85 billion in capital. As a result of these losses, LTCM also had to liquidate a number of its other positions at a highly unfavorable moment and suffer further losses.

Long-Term Capital Management did business with nearly everyone important on Wall Street, and it was feared that its failure could initiate a chain reaction in numerous markets, causing catastrophic losses throughout the financial system. Seeing no options left, the Federal Reserve Bank of New York organized a bailout of \$3.625 billion by the major creditors to avoid a wider collapse in the financial markets.

Marketers Take Over Investment Strategy

The proliferation of products on Wall Street made it difficult for traditional investment strategists to expound their firm’s philosophy and investment stance. At the same time, the bubble media, which stressed recent performance and novelty, led investors to adopt a shortened time horizon and to be attracted by the latest gimmicks and black boxes. Marketing departments aided and abetted this process: They not only actively peddled the latest innovations but, increasingly, they helped invent new ones that would sell well. In a way, they replaced traditional research departments as originators of ideas.

Needless to say, the credibility of brokers and investment bankers eventually suffered as the investing public became aware that all these new products created fortunes for their promoters, while the “customers’ yachts,” as the old adage says, were nowhere to be seen. Some wise investors walked away from these financial-product factories, but others continued to be

impressed by the apparent credentials and the personal financial success of their promoters. This is how, in the end, someone like Bernard Madoff was able to enroll thousands of investors into history's most spectacular Ponzi scheme.

And, of course, without the symbiotic relationship between investors looking to get rich quick and marketers looking to sell the next big thing, the Great Recession would not have played out as it did.

Regulation: Late and Lacking

Shortly after Tocqueville was created in 1985, we had our first SEC audit. The team, led by a knowledgeable senior agent, outnumbered our staff, and the team leader explained that we were one of a relatively few firms that operated globally and that he wanted to train his "rookies." My standing instructions to the Tocqueville staff had always been, "We have a new regulatory compliance manual. As experienced professionals, you already know everything that's in it; so, whether you have read it or not, I have two requirements: 1) In everything we do, *within the law*, each client's interest comes first; and 2) Stay away from anything that even smells like a conflict of interest." Our attorneys later told us that the SEC letter of comments had been one of the shortest they had ever seen.

Times have changed. Not only would my admonitions of 25 years ago not suffice today for a firm of more than 100 employees; but the scandals and excesses of recent years (as noted above) have triggered, in response, an exponential growth in new rules and regulations (and in the billable hours of lawyers needed to keep up with them).

It is clear that the financial industry has been in need of better supervision. My main concern is that, busy as we are watching the trees of regulation, we are losing track of the forest of ethics. No amount of regulation can bring back a sense of probity. In fact, the load of paperwork and the hours spent on the details of compliance with the ever-mounting body of new rules leave little brain-time to reflect on doing "what is right." It could even be argued that each new rule creates a potential loophole, so that crooks, who do not waste much time thinking about ethics, will always find a way around the *spirit* of the law. In that way, I am concerned that, instead of directing us toward a more ethical society, the proliferation of new rules may have the opposite result.

The Societal Role of the Stock Market

I always have viewed the beneficial role of the stock market for society in a rather simplistic way. Technically, its dual role is: 1) To bring idle capital to productive uses in a dynamic economy; and 2) To provide liquidity, so that investors do not feel locked in for an inordinate length of time. But my view is simpler. In a free economy, it is the entrepreneurs who create growth and wealth (as well as true employment). For those who cannot or do not wish to be entrepreneurs, the only way to participate in that wealth-creation is to invest in the stock market.

There is a risk that recent scandals will have discouraged individual investors and that, as reform does not seem to have changed attitudes on Wall Street, they will capitulate by

eschewing stock investments. But it is also possible that, over time, they will rejoin the real entrepreneurs and regain the longer-term perspective that is compatible with industrial investment, innovation, and economic growth. When they do, they will find out that excellent long-term investment opportunities remain.

A New Industrial Revolution?

The thought of long-term investment opportunities leads us to the final piece of this mosaic: technology, and its potential going forward. While computers have at times been part of the problem, they, and their related industries, can also be part of the solution from an investment standpoint, in ways that we are only beginning to comprehend. In the December 23, 2010, and January 6, 2011, issues of her *High Technology Observer*, Roxane Googin observes:

We are moving from the inefficient, expensive, limited and slow client-server (computer) systems of the 1990s to the scalable, always-on, mobile...systems of the 2010s... We need flexible resources so that we don't overpay for stranded resources in slow times only to get caught critically short during demand spikes... We cannot afford to just guess at demand when we can predict it using extensive data gathering... We cannot tolerate product development cycles measured in years as we wait for physical mock-ups of everything from soap boxes to new airplanes....

These problems, from small to huge, represent giant sources of productivity gains that we are going to need to wring out to afford baby boomer retirements and continued education of our youngsters....

What we are seeing is the leading edge of a giant wave of infrastructure replacement, like the emergence of client-servers over a decade ago.

After several years of pain, we are at the cusp of a product cycle [in information technology] the likes of which come at most once a decade (my emphasis).

This is my wish for all of us for the coming year and the coming decade.

François Sicart (in Mexico)

January 10, 2011

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