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SIX SIGMA ACCOUNTING, IN THE NEW MILLENNIUM

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OVERVIEW

I would like to summarize my view of our profession as it enters the next millennium. I hope to convince you that ours is not a healthy position, and that the signals are, at best, bright cautions. But once I convince you that the ledger is half-empty, I will share with you my view of immediate, accessible paths that we can use to return to vitality. It should be made clear that the views I'm going to express are my own, not those of my organization's management. When I conclude this effort, I trust that you will share my view that we are at a critical professional juncture, a juncture at which some important decisions will determine whether we shall look back at our legacy with pride.

General Electric Overview

Before I begin, let me share my framework. Without question, being comptroller of General Electric for the better part of a decade has profoundly influenced my worldview. So let me take a few moments to give you a view of some aspects of those influences.

GE is, by any measure, an astonishing enterprise:

- $110 billion, more or less, in 1999 revenues
- $10.5 billion, more or less, in earnings
- $420 billion in market capitalization--second highest in the world
- For the second year in a row, the most respected enterprise in the world according to a survey by Fortune magazine
- Values that contribute mightily to shareowner wealth
But for all the company's size, power, influence, reputation, and success, it is perhaps three factors that our chairman laid out years ago—speed, simplicity, and self-confidence—that most accurately capture the energy and dynamics of General Electric.

Speed is necessary in all of our markets—perhaps in any modern market. To come in second is to lose. Complexity is the most common reason for slow progress, so simplicity is a vital ingredient of speed. And self-confidence is necessary to achieve simplicity; said differently, complexity often screens a lack of confidence.

Our businesses are highly diversified, but each is a powerhouse. The challenge is to keep this huge organization quick-nimble, agile, and directed to addressing the risks that we have decided to take. One advantage that small companies collectively have over us is their ability to react quickly—there's simply less inertia. But we have one singular advantage that is incredibly valuable in the marketplace, namely that there is no single proposition on which we're betting the company. Don't get me wrong—we hate to lose—we simply hate it. And we'll underwrite and negotiate and walk away from deals with real intensity. But a loss experience—and we have had a few—is one from which we as a culture learn lessons that we apply to the next deals we see.

Bureaucracy is obviously the enemy of a nimble organization. Someone once said that all organizational progress is made when an entity has been knocked off balance and is struggling to right itself. That is known in my culture as "creative destruction." GE of 25 years ago was a model of 1970s organizational structures, with hordes of planners and layers of reviewers and checkers. By current standards, this was a frustrating place to work, and made many more errors of omission than errors of commission. Our chairman, Jack Welch, created a new corporate world in 1981 when he began a difficult but necessary destruction of the layers that buffered the old company from the real world.

And that delayering has translated into freedom, and freedom into productivity. Productivity is the ultimate win-win economic phenomenon; only through productivity can an entire society advance its standard of living.

The GE of Jack Welch is a culture that pushes every performance limit—to think outside the box, to set the bar to what seem to be unreachable heights and use that goal to accomplish more than you thought you could.

I'm an accountant in this revolutionary culture. The difference between what I see going on in my business world and what I see going on in my professional world is stark.

I am going to share with you a personal vision that applies my business formula to my profession, a vision of accounting as it exists in a society in which radical change is a mandate—a society in which, if you stop to watch, you're history.

I want to take you into that society by considering three pervasive phenomena: information technology, quality, and what I've labeled routine intimacy. Each of these phenomena has, in its own way, revolutionized the way we live. For each of these phenomena, I will share with you my view of the effects on our world, then consider the effect on my profession.

Finally, I will recommend three significant mandates for change that could transform our future:

- We must pump up this profession—cheerlead our many successes to keep our extremely rare misses in a meaningful context.
- We must stop setting accounting standards for accountants. I will suggest the radical notion that we can actually learn from listening to management describe its operating results.
- We must, right now, adopt the lingua franca of international accounting standards.
Join me in insisting that we adopt these mandates before the beginning of the next millennium, and I offer you my personal guarantee that we will survive as a profession to face the next major potential catastrophe: the Y1OK bug. The first of our crucial phenomena is that we have moved into an information society.

**INFORMATION SOCIETY**

*In the world*

Three knowledge-intensive industries--financial services, information technology, and pharmaceuticals--accounted for nearly 30 percent of 1998 GDP according to the Commerce Department. In 1997, information technology was 28.3 percent of real economic growth. Why?

The Internet changes everything. I'll leave it to you to decide whether Gutenberg actually invented the printing press or purloined the idea. But if Gutenberg the inventor has a modern counterpart, it's Tim Berners-Lee. Berners-Lee is the software engineer who, while working at a lab in Geneva in 1980, created the World Wide Web.

He didn't "invent" the Internet as we know it. The Net had been around long before, connecting universities and government labs in a crude and nearly unusable way. Nor did he invent the personal computers or the communications lines needed to access the Net. But he did assemble those elements, add his own ingenuity, and create something revolutionary--a network of web--like, interconnected computers that could easily and cheaply share and distribute information.

The result is the modern information society, and every level of life is affected. Obviously, information storage and management professionals are now worried about bytes and data transmission rather than acid-free pages in books. But don't stop there. It is absolutely true that the value in today's society is knowledge--either product knowledge or customer profiles or knowledge about the lowest price for a given product. Obviously, restricting access to data is the new version of safeguarding assets and, just as obviously, data transmission over broadband lines is a much more nefarious threat to our competitive advantage than any unauthorized truck backing up to a loading dock ever was. But alongside the problems are opportunities, and the chance to delight your customers with levels of immediate service is something we're just coming to grips with as a society.

*In accounting*

How does accounting shape up in the free data world? Accounting is many of the things the Internet is not. The Internet is amorphous: one selects and molds data to fit particular needs using tailored decision rules and data selection criteria, often shaping and arranging the data using the powerful hardware available on the desktop. Accounting, on the other hand, *is* structure. Accounting exists because the old world believed it was necessary to see data in a strictly prescribed format. In fact, there are cases in which the strengths of accounting are negative influences. Whether you're an information entity or a widget manufacturer, you must report earnings per share, as defined, and you are prohibited from reporting cash flow per share (that surprises some people, but look at paragraph 33 of FASB Statement 95).

The rigid accounting methods reflect a paper-based approach to accounting and financial reporting. Despite the tremendous success of the SEC's EDGAR system, which makes financial information available on the Internet minutes after it is filed, we clearly have done no more than automate the "hard copy" model for communications with our users. Every day those users remind us that they are a diverse bunch, all with different interests and different needs. And the ones we most want to reach, our share owners, are either choking on or ignoring this formulaic information that we collect, verify, massage, reverify, and, ultimately, distribute.
In tomorrow's society, information won't be broadcast, pushed or forced. Rather, information will be extracted from companies by intelligent agents, trained by users to meet specific needs. These users will get 100 percent of the information they want, but agents will have screened irrelevancies and will constantly refine and improve the decision rules for the data. There will be tensions surrounding access to this data—information is, after all, the competitive advantage. But decisions about what information will be made available will be dominated by judgments about reliability and relevance rather than by cost or how much ink can fit on 68 pages of paper in 12-point type.

Our accounting and reporting model will have to adapt to a less rigid approach that permits users to differentiate useful from other information. Restricted data flows and prescribed, formulaic information is an anathema in the modern world.

**QUALITY**

**In the world**

An additional phenomenon that has changed our world is quality. It would be difficult to overstate the effect that six sigma quality discipline has had on our lives. A decade ago, most of us lived in a world in which quality, such as it was, was achieved through muscle—redundancies, inspections, fixes, patches, and, ultimately, acceptable product. We knew that something as complicated as an automobile would be imperfect simply because it was impossible to make the assembly processes any better. Ultimately, the car would run, regardless of how it was manufactured. Customers would keep taking the faulty vehicle back to the dealer until it did. Yesterday's vehicle also had a life only slightly longer than its associated loan term, and the idea was that, when the loan was paid, we'd trade the vehicle in for a new one with a similar life expectancy.

The Japanese changed all that. The revolution that started in the Japanese auto plants now shows signs of permeating our global culture. We now understand defects in a fashion of which we previously were incapable.

A good example of what the Japanese did to improve quality was to simplify the design and manufacture of products. In the television business, the most expensive part of the manufacturing process was the assembly of television receivers—a labor-intensive procedure that involved thousands of components. Recognizing this problem as an opportunity, the Japanese manufacturers set out to reduce the number of components. By the late 1980s, their televisions had half as many parts as those of their American competitors. And every American TV manufacturer was losing money—the same manufacturers, by the way, who had developed all the technology. From a data collection perspective, the Japanese concluded that less, better data is superior to more, less relevant data. On one particular occasion, Japanese visitors to a U.S. TV manufacturing facility were awestruck by the boxes of reports that were churned out each week from manufacturing systems. When asked what they thought of the detailed reporting, one of the visitors replied politely: "It's quite impressive, but we're not sure why you need to know all this." For their part, the Japanese identified a handful of metrics that were critical to the manufacturing process and directed their reporting and management processes to those metrics.

Defects have always been a data game, and today's computers have enabled us to conduct the kind of severe, rigorous data analysis that has always been necessary for the design and manufacture of "perfect" product. Several lessons can be learned from the strict quality rigor, among which is that, in the history of manufacturing, we have not demonstrated the ability to inspect the product sufficiently well that defects are essentially eliminated. The inspection limit seems to be 3.5 sigma—a far cry from the six sigma world for which we and our customers strive.

**In accounting**
Quality in accounting is anything but a straightforward question. You will rightly assume that I do not automatically conclude that more detailed accounting standards are higher quality standards. And high quality standards are, of themselves, useless unless they result in high quality reporting.

It is obvious that the level of specificity in standards has increased. As well as I can reconstruct where we were in 1972--a random point, but the year I sat for the CPA exam--the number of pages of accounting standards has increased tenfold or more, to about 5,000 pages. Those of you who join me in the bifocal world of the visually challenged appreciate that type size for some reason has been compressing more and more words onto each of those pages (just another example of the paper-based paradigm in action). I honestly wonder whether I have sufficient shelves in my office to accommodate accounting standards in a 1972-sized font.

Those standards address accounting in excruciating detail. Perhaps the best metaphor for recent accounting standards is that of fractals. Fractals, as you know, are shapes that have the same appearance at every successive level of magnification--a seashore's bays and inlets as seen from an airliner are identical to the patterns one would see in the tiny rivulets from inches above the shoreline. Accounting has this characteristic. Regulations have proliferated during my professional career, but they have proliferated about progressively less and less significant matters. A decision about whether Medicare taxes on stock options are charged to equity or expense--maybe thousands of dollars in some cases--would have been made at a fairly low level of the organization a decade ago. Today, of course, it draws the full force of the EITF, SEC, and FASB staffs.

One can argue that these detailed standards are necessary for comparable reporting. But, and this is a huge consideration, if each of the conclusions in those 5,000 pages were perfect, one must ask whether the result would be perfect reporting. Of course, the answer is, only if those standards are applied perfectly. And obviously they are not.

SEC enforcement cases are an interesting metric for this question. Walter Schuetze of the SEC's Enforcement Division cites about 100 enforcement cases a year out of 16,000 registrants. Even that highly optimistic number (everyone who cheats isn't caught) is only four sigma. Obviously, more and more specificity in standards has not translated into higher quality reporting.

Another interesting question arises about what kind of talent it takes to succeed in the modern accounting world. Accountants of my generation believed that we had some responsibility to understand transactions and to devise accounting that best displayed the results. I recently heard a partner from one of the Big 5 firms say that when he joined his firm a new recruit could, within three years or so, be comfortable answering most accounting questions without help from the national office. Today, the accounting literature has become so detailed and complex that the profession has fragmented into loose confederations of accounting specialists--benefits consultants, leasing gurus, tax whizzes, securitization stars, and now, the latest incarnation, derivatives experts. Another reflection of this trend is that accounting students now have to satisfy 150-credit hour minimums to become CPAs. All of which threatens our ability to attract the high quality talent we need in the accounting profession. And, for signals about just how our appeal has changed, consider the number of CPA examination candidates over the last 30 years--down 20 percent from a peak.

The credo of quality and process improvement consultants can be summarized in one word: simplify. If standard setters would adopt that approach, we could return to an age where mere mortals could apply the standards, and the need for specialists would lessen significantly.

Is it possible? Certainly some are trying: the International Accounting Standards Committee (IASC) issued a comprehensive standard on financial instruments that is 85 pages (and is considered long for IASC). The comparable but much less comprehensive guidance under US GAAP, GAAP that is still under development, and excluding EITF literature, Q&As, and proposal-stage literature, is four times as long. What accounts for the difference? In large part, it is extra specificity that some deem necessary to
prevent "scoundrel" accounting. In reality, no accounting standard is going to prevent that. (Tim Lucas, the FASB's seasoned director of technical activities, admits that we have yet to devise an accounting standard that can't be circumvented.) Instead, what such complexity "prevents" is ordinary people from being able to apply the standards.

INTIMACY

In the world

I think this point is so obvious that I will not dwell on it, but there is little doubt that we are, as a culture, more intimate than our culture was several decades ago. Whether Harvard's Francis Fukuyama is right and we'll return to Victorian behavior standards, I cannot say. But it does seem clear that John F. Kennedy lived by different publicity standards than we see applied in, say, the current administration. This trend is not showing signs of any slowdown. My chairman recently said it very well when he said, "Everybody is going to see everything."

In accounting

The days of accounting having a monopoly on performance measurement are numbered. I will borrow freely from former SEC Commissioner Steve Wallman in observing that the world is not going to continue waiting for publication of historical financial statements. Now, when the market sees those data, they are hopelessly out of date, and it is rare for the market to react to a 10Q. But the market does react to historical earnings releases, sometimes violently.

Intimacy with the information that drives those earnings releases is possible, and it would certainly seem to be in the best interests of markets to provide access to those data. Hundreds of billions of dollars ride on this information content.

Accounting, in every important sense, is a language that synthesizes complex transactions into financial statement formats. This is quite a feat, and inevitably entails some loss of information content. Perhaps, if you'll permit us to think aloud, a perfect information world would offer every user a complete description of every transaction of an enterprise, and would permit that user to synthesize those events into performance measures however he or she chose. Cash collected from customers for sale of products might be evaluated as more or less important than cash used to settle a contentious piece of litigation. The investor evaluation of an enterprise's use of stock options would certainly differ based on the net cash flows from such options and based on whether such options were or were not in the money. Who knows--if each of us were to feed the analytical world complete and accurate data about our products, our employees, our backlog, and our research and development activities, modern data processing might synthesize several different views of our performance, and ultimately the free market would find and reward the best of those experiments.

We are certainly approaching a world in which such data could be transmitted, modeled, and interpreted. Where does accounting fit into this picture now? Not a pretty sight. We're debating such elementary matters as whether the performance measure for earnings ought to consider goodwill. I'll share a concept with you. Financing an acquisition carries with it a cost. If I use equity, an expensive way to achieve anything, I dilute each of my previous share owners. If I use cash, I can borrow, and, economically, I know that borrowing is a less costly way of financing acquisitions, all else being equal. Both earnings per share and after-tax interest cost fairly reflect the results of any of my decisions about funding acquisitions. What, then, does goodwill amortization have to do with actual performance? And, assuming we continue down that strange path from which the FASB has been unable to divert itself--fragmenting goodwill into interdependent factors like customer lists and trained workers--what are users supposed to make of the information?
In a demanding world in which e-business and e-trading operate continuously and on a global scale, the traditional system of quarterly reporting in pre-defined formats with an auditor's opinion sometimes attached isn't viable. Curious about where reporting is headed? I invite you to look at the leading financial institutions that post to their websites the bank's value-at-risk computations at the end of each business day. Accounting needs to define its role in a universe where reporting occurs "on demand" or at very short intervals. The key to success is to define the niches of this reporting stream where accounting adds value and to studiously avoid the areas where it does not.

Faced with a demanding world in which we are accustomed to seeing everything now, the highly structured accounting world in which we all live needs revolution. Revolution is a broad, sweeping, unpredictable phenomenon. I'd like to share with you the steps necessary to start what I referred to earlier as the creative destruction of our profession.

**WHAT MUST CHANGE**

I said that the first stage of the revolution required three steps. Let me share those with you now.

*Promote our profession*

You've all seen the headlines challenging the accuracy of reported earnings and challenging the integrity of management responsible for those reports. Of course, in today's world, the press delights in this type of story. The easy-to-paint picture is that of management--properly adorned in black hats--achieving stupendous wealth in exchange for their easily perpetrated malfeasance. The poor victims are all cut from the kindly grandmother model, who asked for nothing more than trustworthy, accurate footnotes. To read the press, you would be absolutely certain of the following:

- Every annual report is prepared simply to achieve the reporting results that management seeks, which is inevitably at least a penny better than analysts' consensus expectations.
- Auditors cannot be expected to impede management's freedom to fabricate, since nefarious management threatens to withhold lucrative consulting services, without which the auditors' children would be begging for crumbs in the streets.

What's the truth? Financial reporting can be improved, but nothing I've seen suggests that we are experiencing even a one percent rate of material error in U.S. financial information. I'll submit that most of that error rate is caused by problems that we can remedy in the design of financial reporting. Further, my suspicion is that many more erroneous financial decisions result from conclusions by users who don't understand the basis for what is being reported than result from intentional reporting errors.

Let me illustrate with the following example. Most would agree that earnings per share is the most important measure of performance used by the market. So one might expect that analysts would be all over the intricacies of EPS calculations, and when the companies adopted the FASB's new EPS standard, they would have already done their homework and be ready to guide the investing public on how to interpret these new measures. But the reality is that when companies started reporting basic and diluted EPS in January 1998, most analysts didn't know whether their EPS estimates for companies included the effects of dilution. Take a company with a consensus EPS estimate of $1 that reported diluted EPS of $.90 and basic EPS of $1.10. Confusion ruled on Wall Street for a couple of days because no one knew whether reporting companies beat or missed the estimates. In my view, information about how well users understand accounting standards would be a fascinating piece of research.

But, since reporting, by any measure, is short of six sigma, what's wrong with the negative feedback we are receiving from our spokespersons? We all know, based on our indelible experience with those masters of ultimate performance--our high school football coaches--that humans perform best when they're made to understand just how badly they're performing. And add to the equation the fact that we
accountants are trained—or maybe selfselected—to view matters in a negative light. The truth, of course, is that headlines like those of recent vintage have devastating short—and long-term effects.

In the short term, inevitably, management throughout any organization will hold accountants and auditors in lower esteem. While the high school coach analogy would have the objective of creating bolder accountants and auditors, the actual behavioral result is that the profession's esteem is reduced, so that holding the line on particular points becomes far more difficult.

In the long term, the supply of bright kids joining the profession will continue its negative trend discussed earlier. The fact is that it is generally not a lot of fun to study accounting in college. It requires a deep commitment to absorbing some truly difficult material. When the profession's regulators declare openly that accounting is not performing up to their expectations, it sends a strong signal to students that they should move to a more rewarding profession as soon as possible.

*Study management's communications*

We have a wonderful laboratory for accounting standards, and that is modern business. While it is true that, given a choice, it is human nature to report one's performance using the view that is most favorable, it is also true that management devotes enormous energy to finding the least biased view of its operations. Management's view is pretty simple—we'll measure things that matter so long as the benefits justify the cost of the measurement. Accounting, on the other hand, is quite resourceful at creating quite complex, quite expensive measurements meeting no decision-making justification whatsoever. Examples:

- New methods of reporting--or failing to report--restructuring decisions
- Income tax accounting
- Employee benefits accounting, especially pensions
- Amortization of goodwill--seldom a wasting asset--against current earnings

Although I am personally reserving judgment, Statement 133 is already drawing this pointed criticism.

And, although good sense has prevailed so far, we fight a lot of battles in areas like stock option accounting. Another personal favorite is the continued drumbeat in favor of the so-called direct method of cash flow reporting. Maybe one percent of U.S. public companies report cash flows using the direct method in financial reports to shareholders. I have asked, but have never encountered, a company that uses that method for internal reporting to management. If you were the treasurer of a major organization, and you believed that cash flow management—a factor that the market clearly values—could be improved by a particular reporting method, even a more expensive method, how long do you think it would take to install that system? Answer: not very long. The fact that it is not widely used by U.S. enterprises raises the compelling question about whether management is willing to pay a penalty in the market because it does not use all available information. That conclusion seems unlikely.

Imagine for a moment a different model—a model in which we create standards based on negotiation between management and analysts, the parties engaged in conversations about how the enterprise is doing. We now set standards on the odd premise that accountants know best how to think about business. Direct cash flow reporting is one example of this hubris. But managers are paid for results, and they want to be able to forecast those results. And they want information that will signal to them when those results are in jeopardy.

I submit that either we ought to require every accounting standards setter to spend one hour a day watching CEOs make decisions and talk about performance, or we ought to let management and the analysts negotiate reporting in a free and open format without interference from accountants. In any event, we certainly ought to monitor analysts' reports, and we ought to view each analyst's statement that attributes a reporting result to accountants as a standards failure.
**Adopt International Standards Now**

I have met few accounting standards that I really love. I am more concerned about the economic cost of the failure to have a lingua franca. When GE is looking at an acquisition in Hungary, I dream of having language as the only communications barrier.

I believe that we should accept IASC standards for use in U.S. markets as soon as possible. Why? Quite simply, I think U.S. investors are better protected if foreign companies use IAS than if they use their national GAAP, even if the financial statements prepared in national GAAP are reconciled to U.S. standards. Right now the SEC Division of Corporation Finance reviews filings by foreign companies that follow more than 40 different national sets of GAAP. As hard as they might try, I think it is impossible to achieve rigorous enforcement of high quality financial reporting under such circumstances. Standardization on IASC permits the SEC to leverage their reviews and develop standard questions for registrants based on emerging trends in filings, a practice they regularly follow with U.S. registrants.

A second benefit from accepting IASC standards is that more foreign companies will register with the SEC. Today, those companies trade in the netherworld of the ADR market--a market in which roughly $600 billion in equities changed hands in 1998. ADRs are not shares of stock but are "interests" in shares that are traded on foreign exchanges. From an investor's perspective they behave exactly like traded shares, and many investors unwittingly take false comfort that the financial data they get conform to U.S. GAAP. The problem is the frequent absence of a strong regulatory presence like the SEC to monitor conformity.

In the new frontier of around-the-clock e-trading, individual investors don't want to know about financial fraud or international accounting differences. They want clear, comparable, and accurate financial data for all companies around the world. Moving from national GAAP to IASC standards today would solve a lot of those problems and can only get better in the future.

**CONCLUSION**

I entered the accounting profession when life was a little different. Yes, even in the old days, there were long hours and complex transactions. My original public accounting outpost was a tiny little office in North Carolina. Matters were evolving there at a stunning rate--the year before I was hired was the first year that a manager hadn't been assigned to be in the office all day on Saturday in case a client happened to call. And that manager was expected to be properly attired--in a suit, with the jacket on. But more has changed than the wrenching debate about whether "business casual" attire includes or does not include socks.

The emergence of e-business and e-trading will require the accounting profession to map out a complementary e-strategy that remains relevant. The profession needs the best and brightest for this step, and we cannot hope to attract the best and brightest without marketing. We each need to find a Gen-X'er and tell him or her, "Here's why I'm an accountant and why what I do is supremely relevant to economic decisions."

In addition to the effect of the Internet, the drive for quality in reporting requires simpler standards. The move to IASC standards is a first and necessary step toward simpler standards, and that move ought to be a global one. I am including all of us in the U.S. who now spend enormous energy applying purportedly perfect standards imperfectly. Simpler standards will also increase the chances that the accounting profession will once again attract the kind of talent it needs to succeed in the future.

And, finally, accounting can aspire to no nobler objective than to reflect the underlying business activity it purports to represent. To achieve this goal, the profession must continue to monitor business reporting.
and evolve in a way that it continues to provide the most relevant representation of business performance. We have lost our data monopoly. Users are on the verge of being able to apply their own performance measures based on specific retrieved data. When we reach that point, the expensive systems and mechanisms we devote so much time to will only meet a legislated data need.

Abraham Lincoln delivered his second inaugural address with the end of the bloody Civil War in sight. What he said then captures how I feel about our profession. He said, "With high hope for the future, no prediction with regard to it is ventured."