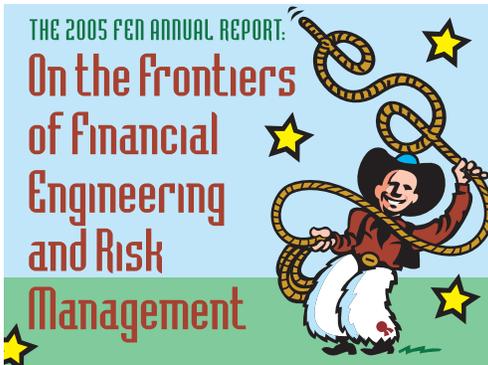


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## The Future of Risk Management in Historical Perspective

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A perennial fallacy voiced even by normally sophisticated people is that, "The past is not a reliable guide to the future." Like all tenacious errors, this bromide does contain a kernel of truth. Life is full of surprises and simple extrapolation of the past assuming only slow incremental changes is not realistic. That said, however, the past is all we have as a basis to forecast the future. Indeed, recognizing the pattern of periodic surprises in the past, and their likely frequency and magnitude, is an essential component of coping effectively with the future.

I have been active in various forms of economic and financial analysis for the past 30 years. Looking back over that period, I do find some important lessons that can help us navigate the inevitably uncertain course of events. Even in combination, however, these lessons will never support a detailed roadmap for the future.

### Lesson 1: Don't underestimate the pace of technological change.

There is a recurring tendency to marvel at technological changes we have seen in the past but to believe that the pace of change cannot be sustained. In part this is because the past is known in specific detail while the future can be imagined only in vague outline. Nevertheless, the most plausible scenario today is one in which the pace of technological change not only continues but accelerates. An essential senior management responsibility for the foreseeable future will be monitoring emerging technological possibilities and taking early action to avoid the threats and leverage the opportunities they offer.

### Lesson 2: Most things are technically feasible long before they are commercially viable.

This reality can provide vital lead time for organizational responses both to threats and to opportunities. Unfortunately, a more common reaction is to downplay the challenges by focusing on the commercial obstacles. The litany is usually predictable,

the cost is prohibitive, quality is poor or inconsistent, the complexity is too great to be widely accepted. "PCs are an interesting sideshow but will never be powerful enough to become the core source of corporate computing." "Digital photos will never be good enough to replace high-quality film images." "Internet telephony is okay for geeks but it is plagued by annoying delays and poor sound quality."

In fact, skeptics simply focus on present obstacles, implicitly believing (perhaps subconsciously hoping) they will remain in the future – but any technology with significant advantages will attract major resources aimed at eliminating obstacles to its application. The conclusion: don't dwell on the obstacles. Assume they will be removed, monitor how fast this occurs and start planning an effective response.

### Lesson 3: Big changes often require a combination of enabling circumstances.

While unraveling the human genome has been completed, we all have heard that isolating links to most genetic diseases has

only begun. The reason is that many such links involve a combination of genetic flaws rather than just one. In a similar fashion, major changes in financial market practice often hinge on more than one enabling circumstance. For example, the pioneering work of Harry Markowitz on portfolio theory and the efficient frontier was published in the early 1950s. It was not, however, until the 1970s and the advent of the minicomputer that sufficiently cheap processing power allowed widespread practical application of the theory to investment decisions. The Black-Scholes-Merton option pricing formula was developed in 1973. Derivative markets did not take off, however, until the early 1980s when PCs and spreadsheets put analytical development tools and associated computing power into the hands of traders.

Today there is much discussion of the need to view any risk decision in the context of a company's entire portfolio. In effect, this is simply the extension of Harry Markowitz's insight to the world of corporate financial risk management. In last year's series of *FEN* thought pieces, Joe Pimbley pointed to this as the basis for what he called Quantitative Enterprise Management or QEM. Today, pervasive fragmentation of data and systems is the troublesome legacy of the evolution from mainframes to minicomputers to PCs over the past 30 years. That said, object-oriented programming and XML-type

messaging protocols are the technical foundations for improved interoperability. These tools demand substantial communications capacity to be effective, but the significance of this obstacle is likely to fade as greater high-speed capacity, driven by growth of on-demand video, drives down costs. Finally, adoption and implementation of widely accepted semantic protocols such as FpML is a slow and costly process. Eventually, however, a tipping point will be reached at which beneficial network effects become compelling. Then there will be a mad rush to make QEM a reality.

**“Rigorous quantitative analysis should support sound judgment: it can never replace it.”**

#### **Lesson 4: Scientific analysis will continue to advance, but human judgment will always be required.**

Dramatic advances in computing capacity over the past 30 years have allowed the application of rigorous quantitative analysis to an ever-wider range of problems. A comparable revolution in communications

capacity over the next 30 years (combined with the likely availability of still greater computing power) will accelerate this trend. Some argue this signals a decline in the role of human judgment in business decisions. Nothing could be farther from the truth. What is true is that the nature of such judgment will change. A working understanding of the concepts that underlie such quantitative analysis will be essential. Lacking that, such analysis can only be used on a purely mechanical basis, and that is a dangerous course to follow. Rigorous quantitative analysis should support sound judgment; it can never replace it.

In summary, the next 30 years will be filled with unforeseen and surprising events just as have the past 30 years. Coping with such changes will not be simple. Nevertheless, careful monitoring of developments in technology, financial theory, business practices, competitive forces and the legal and regulatory environment will allow thoughtful managers to respond effectively to emerging threats and capitalize on opportunities that are often just the flip side of those threats. ■

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