REAL-WORLD CONTINGENCY PLANNING KEEPS PLYWOOD PRODUCTION ON TRACK

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Much has been made of "reengineering the finance function," but most of it boils down to cost-cutting. That's unfortunate, since it does a disservice to its predecessor, business process reengineering (BPR). BPR revolutionized production, marketing, and distribution at many companies by exorcising the hand-offs and inefficiency associated with overly departmentalized, task-oriented processes. Cost-cutting was inevitable, but the main benefits were improved responsiveness to customers, vastly accelerated cycle times, and a real sense of employee empowerment. These benefits were generally missing from the literature on financial reengineering.

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EXECUTIVE SUMMARY

- *This article is a follow-up to the article entitled "'Making Planning Relevant: The Real Role of Corporate Finance Reengineering," which appeared in the November/December 1998 issue. The first article explains the theory and consequences of three-dimensional modeling and decision-making for improving the finance function. This second article uses a case study of a major wood products company during the 1994 to 1995 timeframe to develop an intelligent chess-like model of competitors' behavior in a high-stakes, capital-intensive industry for improving a company's finance function.*
- *Unlike the conventional planning process that relies solely on classical equations, a new model is designed that reformulates strategic plans to make them relevant over the long-term by taking into account the different varieties and intensities of risk in the planning process.*
- *The model demystifies risk by representing it graphically so that managers could comprehend, react to, and tinker with the uncertainties besetting the model and thus the real world. Managers who distill orderfrom chaos by making planning exercises contingency aware, will be the business leaders of the 21st century.*

Corporate finance reengineering should be about restoring relevance-about improving management's ability to plan swiftly, realistically, and effectively. The truth is, most strategic plans lack real-world relevance. They are out-of-date before the ink dries, yet consume weeks-if not months-of collective haggling and brainstorming. What most managers recognize is that the brainstorming only works when the world is static and competitors' behavior is predictable. Increasingly, neither condition applies.

The first problem is the tools themselves. When most of our classical financial planning tools were developed in the 1960s and 1970s, the power of mathematics outstripped the power of computing, so we relied on all formulas to explain investor behavior, stock prices, and security risk.The formulas offered one answer-the so-called "expected value." They seldom offered insight into dispersion or bias, even though such insights, in an uncertain world, are what makes planning relevant and useful.

Now that equation has changed. The power of desktops now outstrips the power of mathematics, and personal computers (PCs) are accessible to almost everyone. Simulation-based planning models can thus be used to test growth strategies against uncertain competitor behavior, thereby improving the odds of costly wagers. In addition, the models can help finance professionals assume previously unheard-of frontline responsibilities-anticipating, rather than reacting to, changing business conditions.

Virtually all aspects of the finance function can be improved by three-dimensional modeling and decision-making. Much of the theory and some of the consequences of such models are explained in an earlier article in Corporate Finance Review ("Making Planning Relevant: The Real Role of Corporate Finance Reengineering," September / October 1998). This article is a case study of a major wood products company called Alpha Corp. during the 1994 to 1995 timeframe.The objective was to develop an intelligent, chess-like model of competitors' behavior in a high-stakes, capital-intensive industry.

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CASE ANALYSIS OF ALPHA CORP. STRUCTURAL PANELS

Alpha Corp. is a pseudonym for a Fortune 100 company. The company is a master of continuous improvement. With twenty-one mills and nearly seven billion square feet (BSF) capacity, Alpha dominates the structural panels industry. Its sixteen plywood mills are the industry's most productive-producing, across-the-board, at least twice their original-rated capacities at the lowest cost.

Alpha's secret was scale-ironing the kinks out of labor- and cost-saving innovations at one mill before steamrolling the technology to its other mills. By conducting experiments simultaneously at each of its mills, Alpha routinely produced performance breakthroughs that could not be matched by its less established rivals. When we began working with Alpha, it was virtually assured of preserving its low-cost status in the plywood industry-and of being blindsided by engineered substitutes.

Alpha revolutionized plywood production by introducing two major changes in the 1960s:

1. Shifting production from West Coast Douglas Fir (the only raw material then used) to southern yellow pine; and
2. Building a lot of large, capital-intensive mills to standardized specifications.

With hindsight, the benefits of relocation were obvious: cheaper fiber, faster growth cycles, easier and year-round access, closer proximity to end markets, overlap with chip needs of the paper industry, diminished reliance on the Forest Service, and less environmental impact.

By standardizing its mills, Alpha could conduct large numbers of controlled cost-savings experiments. The company thus assured itself that, in addition to sourcing cheaper materials, it could stay ahead of copycat technology. Even today, after thirty years of catch-up, the average Southern plywood manufacturer still spends 20 to 30 percent more than Alpha per panel. The average western plywood producer spends 50 to 100 percent more. The impact, given present timber shortages, is that higher-cost western manufacturers set the price for the industry, yielding attractive margins for Alpha.

CONTINUOUS IMPROVEMENT IS NO LONGER SUFFICIENT

Two competitive forces pressured Alpha to reexamine this long, successful reliance on total quality management (TQM) and continuous improvement. First was the increasingly concentrated behavior of suppliers and customers. A great advantage of relocating to the South was the atomized nature of the timber market. The vast majority of timber stands were held by small, independent landowners. In any given wood basin, mill owners were essentially monopsonists, since transporting logs out of the basin was cost-prohibitive. That purchase-power imbalance is fast disappearing as timber management consultants increasingly coordinate timber sales, and as untapped timber sources shrink.

At the same time, mega-distributors like Home Depot have redefined the ground rules for allocating producer surplus. Between stronger vendors and distributors lies the specter of an industry which, despite huge producer profits, sees less and less of it allocated to manufacturing. Manufacturing is just one step in the process of satisfying a home builder's need for construction materials. How his construction outlays are distributed across the value chain is neither static nor wholly predictable, and is of no concern whatsoever to the consumer.

The other competitive intrusion is engineered substitutes. Just as Alpha revolutionized the plywood industry by displacing Douglas Fir, Louisiana-Pacific and others were revolutionizing the structural panels industry by introducing chip-based alternatives to veneer. From 1989 to 1994, chip-based structural panels (oriented strand board, or OSB) grew from less than one percent of production to 20 percent. In addition, the selling price for equivalently measured sheathing products was almost identical-strong evidence of market acceptance.

WHITHER OSB?

This, however, is the rub. OSB is produced from smaller-diameter logs costing, on a volume basis, roughly one-fourth the cost of logs peeled for plywood. Furthermore, OSB mills consume everything, including branches and "tops." Even after adjusting for greater density and resin requirements, OSB still costs 65 percent of what Alpha spent to produce plywood, and Alpha was the plywood cost leader!

The industry was thus scrambling to build OSB mills. Equipment orders suggested OSB capacity tripling during the next five to seven years, expanding total structural panels capacity by 33 percent or more.With only modest demographic improvements, something had to give-most likely consumer prices. Those most adversely affected would be plywood producers, including Alpha.

Of course, Alpha did have six OSB mills and was well-positioned to build more elsewhere. OSB mills, though, are very costly to build. If panel prices cratered too

Planning is made meaningful when it embeds uncertainty explicityly into the target setting and investment appraisal process.

far, scarcely anyone would recoup their investment.

Even so, Alpha was undeniably exposed in plywood, traditionally its most dependable cash source. Especially for a company reminded of its high debt load from recent acquisitions, the need for something fundamental and radical was clear.

It was also clear that traditional reliance on continuous improvement would not alone meet the immense challenges Alpha faced. Continuous improvement could, for example, be used to shift Alpha's mix to more specialized products than OSB, but the overall market for such specialties would be relatively small, and would thus be contested by other, equally-crowded plywood producers.

Alpha also could not hope to attain the same supremacy over manufacturing costs as it today reaps in plywood by rolling out more OSB mills. For one, many of the prime sites are taken. Second, Louisiana Pacific already had fifteen mills to Alpha's six, and it was better positioned to win the game of continuous improvement.

Finally, there was the recurring nightmare of over-development and the kind of protracted boom-bust cycle that has plagued so many capital-intensive industries, including paper. Sure,Alpha might win the battle to reduce cost, but it could suffer pyrrhic reductions in margins to the point where the cost savings were not worth the capital invested to reach that goal.

Like many companies in its industry, Alpha was in danger of paralysis-paralysis from fear of igniting a no-win "arms race" between panel producers, from fear that further OSB investments would only cannibalize its plywood business, and from fear that both plywood and OSB investments might be rendered uneconomic by falling prices.

TRADITIONAL PLANNING TOOLS WERE NOT HELPFUL

What was needed was a financial planning process that balanced the need for aggressive technological advancement against the danger of industry over-expansion, and that did so in light of uncertain economic conditions, governmental policy, non-wood substitutes, and competitor behavior.

The problem with the conventional planning process was that it was not a process at all but a set of classical equations-a collection of point estimates that were doomed to be inaccurate because of the many independent and overlapping uncertainties influencing industry profits. Depending on the inputs, management and the board could justify anything. The impact could easily have been the path of least resistance-continuous improvement of existing manufacturing techniques, migration to specialized (and thus insulated) product offerings, and an unspoken prayer that the industry would collapse from over-expansion, thus vindicating standing on the sidelines.

The reality was that classical point estimation techniques offered no practical way to balance
ping uncertainties, and thus guide decision-making. Without some

way of illustrating and measuring trade-offs, the financial planning process offered no improvement over the division manager raising his finger to the wind. Indeed, the plans almost certainly were worse, since the collaboration to produce a plan inevitably involved hand-offs and disjointed judgment calls as to risk factors.

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BUILDING A BETTER MODEL

For nearly a year, we worked with the line and staff managers of Alpha to reengineer the way strategic plans were formulated. Our vision was to make them relevant-not merely at the time of development, but long thereafter by properly incorporating and automating responses to identifiable sources of uncertainty. Relevance meant more than just capturing bottom-line objectives. It meant providing managers with a bottoms-up guide to dealing with identified contingencies, and corporate staff with the means to allocate capital fairly on the basis of verifiable risk criteria.

To accomplish this, management needed to understand that all corporate strategies and tactics connote different varieties and intensities of risk-risk that cannot be captured by a long-term forecast and uniform cost of capital. Management had first to abandon the traditional "one-size-fits-all" discounted cash flow (DCF) model of performance-harsh medicine for any company that has struggled to make line managers believe that cash flow and risk determine stock prices; and counterproductive, if corporate staff can do no better than make ad hoc adjustments to the hurdle rate after they have first seen the investment proposal.

At a minimum, the new planning process had to build differential risk into a project's cash flows, not its cost of capital. We saw this as a perfect setting for Monte Carlo-based modeling, since differential risk could, for the first time, be illustrated and modeled in a manner that was understandable to, and wholly consistent with, the way line managers viewed their business.

COMPLEX MODEL, SIMPLE INTERFACE

Pulling off such a transition required building an industrywide model of construction activity, finished product pricing, and individual mill profits. The challenge was to make the model comprehensive (and thus complex) enough to anticipate the business' many tradeoffs, interrelationships, and regional distinctions without sacrificing clarity and management participation.

It was viewed as imperative that the proposed planning process, as ambitious and dynamic as it was, be dramatically easier to comprehend than the traditional DCF fire drill. The comprehension would come from the process' vastly simplified and coordinated graphical interface, not from compromises in necessary detail.

What we were dealing with was the so-called "paradox of decentralization." Decentralization in data assembly is supposed to improve efficiency, accuracy, and response time by pushing responsibility down the ranks. The reality is that decentralization often breeds chaos by nurturing an unworkable collage of inconsistent data and assumptions.

Decentralization at Alpha extended well beyond interdepartmental bounds, since virtually every numerical entry into capital budgeting or planning was prepared by separate individuals, operating separate desktop computers, using different software, applying separate data entry formats, and finally, sharing the information by hard-copy or sneakernet.The problem was not too little data, but too much data poorly coordinated.

Another problem was that the divisions' truly value-adding data systems, freight management and logistics, were imposing black boxes. This distanced line managers from the essential simplicity of what the programs were doing (optimizing freight costs by matching mills with customers on a real-time basis) .The tendency here, as at so many companies, was to halt programming once it delivered accurate answers. In our view, that's where the real programming begins. The real programming challenge was to make accurate answers accessible through a seamless, unintimidating, and widely subscribed interface.

To reduce intimidation, we chose the most widely used spreadsheet in the world, Microsoft Excel@. We also devoted slavish attention to add-ons that made intuitive sense of complex economic relationships. This meant building filters (or gophers) to navigate the network and retrieve real-time information from previously disconnected sources and investing those gophers with intelligence--the intelligence to recognize different names (or even spellings) for the same mill or product, to detect and correct differences in periodicity, to interpolate data gaps, and to prompt management when data conflicts or deficiencies called for individualized solutions.

UNCERTAINTY IS BEST DESCRIBED GRAPHICALLY

Alpha sought to break the vicious cycle of skeptical managers participating in half-hearted ways, leading to weak conclusions, weaker participation, and still weaker conclusions. (See sidebar, "Graphically Representing Risk.") The company sought a financial management system that was so powerful, simple, and immediately relevant that managers would be curious to participate, and having participated, be sufficiently excited to propel continued reliability and relevance.

Not all organizations are suited to the challenge. Divisional managers may be nearing retirement, while others may be more concerned with rotating to their next assignment than with challenging their present one. For example, a U.S. automotive manufacturers planning department suffered immeasurable inertia because it was constantly refreshing its management pool from unrelated departments, thus studying the same issues repeatedly.

Alpha's chief financial officer (CFO) selected the structural panels team for good reason. The team was young; turnover was low; and more important, the team understood how radical insights in the 1960s made them a powerhouse in the 1980s. The team also showed pride and resourcefulness in pulling the company through the difficult cash flow years following a large, unrelated acquisition. They were also keenly aware that their unit's contribution to corporate cash flow would be jeopardized by competing technology.

Even at structural panels, the reengineering process was painstaking. Nevertheless, several developments cemented credibility early on, improving participation.

Graphically Representing Risk

De-mystifying finance meant representing risk graphically, so that managers could comprehend, react to, and tinker with the raft of uncertainties besetting the model and, we believe, the real world. It also meant channeling the many disconnected corporate finance worksheets into one easy-to-understand navigator, which would open and close related worksheets automatically. The vision was to make the interface so common-sense, but the resource so potent, that line managers would clamor to use it.

In most companies, planning is fragmented by so many tasks that their only shared characteristic is tedium. Participation is consequently ambivalent. Except for ulterior considerations like pay, managers devote little attention to the outcome.The result is a cycle of deteriorating participation and deteriorating conclusions.

IRRATIONAL PRICES RATIONALIZED

First, the model explained erratic and lofty panel prices as a rational interaction of supply and demand. When we first began working with the unit, few managers believed panel prices bore any systematic relationship to cost or demand. Even with the intrusion of low-cost OSB, plywood producers enjoyed operating margins in excess of 25 to 30 percent. Prices also changed 10 to 15 percent a week, far exceeding movements in interest rates or housing starts. Few people on the selling floor could describe how prices were set, and few cared. They were just glad to be working. They were also perhaps a bit unnerved that a string of back-to-back bearish weeks could render them unprofitable.

To explain prices, we started with operating costs-the area where Alpha's reconnaissance excelled. Alpha's network of foresters, mill managers, and sales representatives routinely collected (on diverse spreadsheets and slips of paper) enough data to produce a compelling picture of the industry's supply curve over the last five to ten years. We observed that among Alpha's peers, costs differed modestly. The supply curve rose slowly and smoothly, but for a kink where OSB capacity ended and plywood capacity began. Staring at Alpha's peers, one could mistakenly conclude that panel prices exceeded anything that could be justified by cost.

The explanation was that production was near capacity. At the high end of the supply curve were a number of small, independent, predominately West Coast plywood producers with much higher costs than the industry average. Some mills were configured to peel larger logs than they could presently source; surrounding forests were depleted by competition and over-harvesting; and equipment was old.

The result was a cluster of mills at the end of the supply curve whose dramatically higher (and varied) costs made for extreme steepness in the cost of the final three to four billion feet of industry capacity. It was these mills, not Alpha's peers, that were filling the last plywood orders, and thus setting prices. For these companies, panel prices were very definitely a function of cost.

The exercise also explained high price volatility. This volatility, in turn, made reluctance to fold by some unprofitable mills understandable, since the mills held an option on possible future price rises.

Management thus gleaned its earliest insight-that the supply curve would flatten as additional OSB capacity pushed demand back to the more homogenous section of the supply curve. The result would be swiftly falling panel prices, as predicted by industry economists and diminished price volatility, reducing the option value associated with sustaining unprofitable mills.

Of course, old practices die slowly, and it could be quite some time before marginal players realized the roller coaster ride of feast and famine had been replaced by a slow, steady death march. This slow learning process could, in turn, exert a retarding influence on industry consolidation, forcing profitable mills to forgo sales as companies vainly cross-subsidized and propped up unprofitable mills. Even mills with low variable costs could sustain damage as industry over-capacity spread volume thin.

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LEADING RESEARCH MODEL DE-MYSTIFIED

There was a second development that, early on, helped build credibility and interest in the project. We "reverse engineered" the econometric relationships in a widely subscribed model of industry performance-the model prepared by Resource Information Services, Inc. (RISI).
RISI is a Boston-based think-tank that publishes detailed semi-annual projections of building products activity. The building products industry pins many an investment decision on RISI's semi-annual prognostications, and it stands dolefully by when underlying conditions change, awaiting RISI's semi-annual revisions.

Reverse engineering the econometric model allowed Alpha's managers to anticipate how RISI would have modified its projections in light of changing economic forecasts or superior plant information-without waiting for the official (and highly publicized) transcript. In addition, we modified the econometric relationships to include error terms-better reflecting the imprecise nature of forecasting. Managers were thus able to visualize the impact of deviations in Federal Reserve policy as a continuum of construction activity levels clustered around a certain range, rather than as certain-to-be-disappointed point estimates. Managers could thus visualize their exposure to macroeconomic uncertainty, but see how the odds were skewed by underlying shifts in governmental policy or interest rates.

The two developments were significant. By leveraging off Alpha's proprietary edge in engineering and forestry reconnaissance, we were able to generate a coherent explanation of the inexplicable-the volatile, high level of prices for finished products. We were also able to assist management in modifying a leading research bureau's conclusions with superior source data.

Last, we turned the imprecision of econometric forecasting to advantage, as a means of quantifying exposure to uncertainty.

MEASURING AND MANAGING UNCERTAINTY

Once these early missions were accomplished, we were able to focus management on thinking proactively about contingencies. We provided a non-statistical, highly visual format for distinguishing systematic risk from noise. We also provided a sobering illustration of how swiftly plywood manufacturers could be displaced through obsolescence. The model thus catalyzed attention on how rapidly the supply curve flattened-from convergence in saw log and pulp log prices, and from expanding capacity among the more homogenous companies in Alpha's peer group.

Strategy sessions were focused accordingly. For example, competition from OSB in the sheathing market occurred so rapidly in most simulations that plywood seemed destined to suffer, absent major extensions of product consumption. Managers thus turned attention away from non-core and comparatively small niches like furniture and boat hulls.

While these areas had received considerable attention (with visible and promising results), the markets were simply too small to offset plummeting demand for plywood sheathing.

Management instead marshalled its attention to the only consumer who could potentially absorb the industry's new capacity-the general contractor. In particular, management set its sights on lumber.

THINKING OUTSIDE THE BOX

To date, most engineered lumber facilities (plywood, OSB and 2x4s glued together to resemble a wider dimension product) have fared poorly against conventional sawmills. The wisdom is that all the extra steps of converting logs to veneer and webstock, and then gluing them together to make beams, render engineered products unprofitable against state-of-the-art sawmills. While companies are racing to produce OSB, comparatively few are racing to join it into I-joists.

The pricing model challenged conventional wisdom. If intense OSB competition pressured structural panels prices downward, raw material costs for engineered lumber would fall as well, conferring a potentially sweeping cost advantage to engineered lumber over sawmills. That, in turn, would moderate the impact of falling panel prices on plywood mills.

Taken further, invigorated competition by engineered lumber against traditional wide cuts could cause predominately West Coast sawmills to shift their mix to narrower dimensions, squeezing the many small-diameter sawmills and stud mills in the South. The ultimate cash drain, while widely presumed to be in plywood, would actually be in conventional lumber, a market that consumes 2 to 3 times as much fiber as structural panels.

The immediate benefit of modeling the building products business, as opposed to filling in charts of accounts, was that management could make sense of the many sources of uncertainty affecting their business and exploit the prevailing industry confusion to competitive advantage. By addressing important interproduct relationships, the building products model helped management:

- Evaluate the true risk-adjusted return from prospective OSB investments;
- Balance greenfield investments against acquisitions;

Distilling Order From Chaos

The chasm between line managers and corporate personnel can be narrowed. But it won't happen as long as line managers communicate their business options and prospects to corporate officers and outside experts using a static collection of best, worst, and most likely case scenarios. Nor will it happen if corporate officers and outside experts continue to describe the world to line managers as a series of hard-and-fast targets.The static case-oriented model of target-setting and performance measurement is simply inconsistent with the vagaries of a real world business climate.

Planning is made meaningful when it embeds uncertainty explicitly into the target-setting and investment appraisal process. This is made possible when corporate managers develop probabilistic models, not individual forecasts, to describe their businesses. Such models modify performance targets to reflect changes in macroeconomic conditions beyond management's control-and do so in a manner that is widely understood and accepted in advance.

Such models also provide guidance as to the distribution of aggregate performance measures, since they can be run on a PC hundreds of times-allowing competitors' behavior and the economy to vary randomly, but in accordance with well-defined patterns.These distributions can be used to determine, for example, how steep management's hills are to climb, and thus how to calibrate an incentive plan.

In addition, the hundreds of simulations generated by a single probabilistic model divulge many paths to the same earnings per share (EPS), return on equity (ROE), or economic value-added (EVA). A quick discounted cash flow comparison will, however, reveal that only one such path is value-maximizing.The database of simulations thus becomes a powerful practical guide for identifying which specific tasks and decisions of management are most consistent with increasing stock prices-not just an accounting target.

Finally, the database of simulations shows how clustered value-enhancing patterns are, and thus each pattern's probability of attainment. It is quite possible, for example, for a value-maximizing strategy to be outweighed by a less ambitious, but far more probable, value-enhancing strategy.

- Determine which mills should forgo capital improvements, despite significant cost-savings; and
- Develop an integrated (as opposed to product-based) strategy for maximizing the value of the building products group.

Critics will object that the conclusions management reached were obvious. Perhaps this is true for seasoned line managers, but it was most certainly not true for the corporate office, the company's board, or the division's peers in pulp and paper. The resources and attention devoted to reconstituting Alpha as the premier vendor of low-cost engineered wood products, rather than a major manufacturer of conventional lumber and plywood, could as easily have been diverted to another kraft or linerboard plant, or to a massive stock buy-back. Management simply could not balance the wide range of alternatives without a full and unbiased appreciation of the risks involved-something classical financial analysis tools did not provide.

In addition, there was previously no means of proving the need for a radical change in strategy, as opposed to continuous improvement. Alpha could have methodically improved costs at its plywood mills, but lost the war to OSB. It could have penetrated ever further into niche products and specialties, but found an unexpected tide of competition from sheathing manufacturers. There was previously no means of satisfying anti-alarmists that the alarm bells were real-that a status quo future would be an outlier.

Not all the strategic decisions have been made at Alpha. It still has far to go before realizing its vision of a fully-subscribed, real-time, contingency-aware planning model. The company is nevertheless close to its vision in building products, and has registered substantive changes in the way it plans its future-ways that vastly improve the likelihood that it will be a beneficiary (and not casualty) of technological change.

CONCLUSION

The key distinction between the probabilistic and traditional modeling approach is that the probabilistic approach is dynamic. (See sidebar, "Distilling Order from Chaos.") On any day after generating the forward plan, there will be a subset of scenarios that fit existing circumstances, and that paint a realistic, probability-weighted mural of subsequent outcomes. Those scenarios that offer the greatest promise of stockholder return can then be distilled into line-by-line guides for refocusing management attention, and for reevaluating corporate expectations.

Management's focus can thus be shifted to beating the odds it faces, given circumstances to date, rather than surpassing static, out-of-date targets.This is closer to the perspective of stockholders, who make extraordinary returns only if a company's stock outperforms market expectations-expectations that adapt constantly to emerging circumstances.

Phrases such as "probabilistic," "PC," and "hundreds of times" conjure up images of mad scientists tinkering on sub-basement mainframes. The reality is much gentler. The power of off-the-shelf spreadsheets and add-ons has advanced so far that, for most companies, the transition to measuring and managing uncertainty is intuitively appealing and straightforward.

The applications discussed are only the tip of the iceberg. There are many scholars and practitioners who believe that three-dimensional modeling is the next great advance in corporate finance-as revolutionary as the two-dimensional DCF and Black-Scholes models were to the last two decades. We now live in a world in which chaos has become the norm. Those who can distill order from chaos, by making planning exercises contingency aware, will be the business leaders in the 21st century-a beneficiary (and not casualty) of technological change. ■