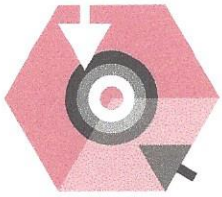

STRATEGY

Strategy-Making in Turbulent Times

A dynamic new model

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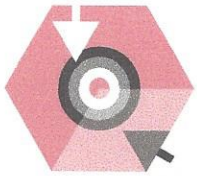

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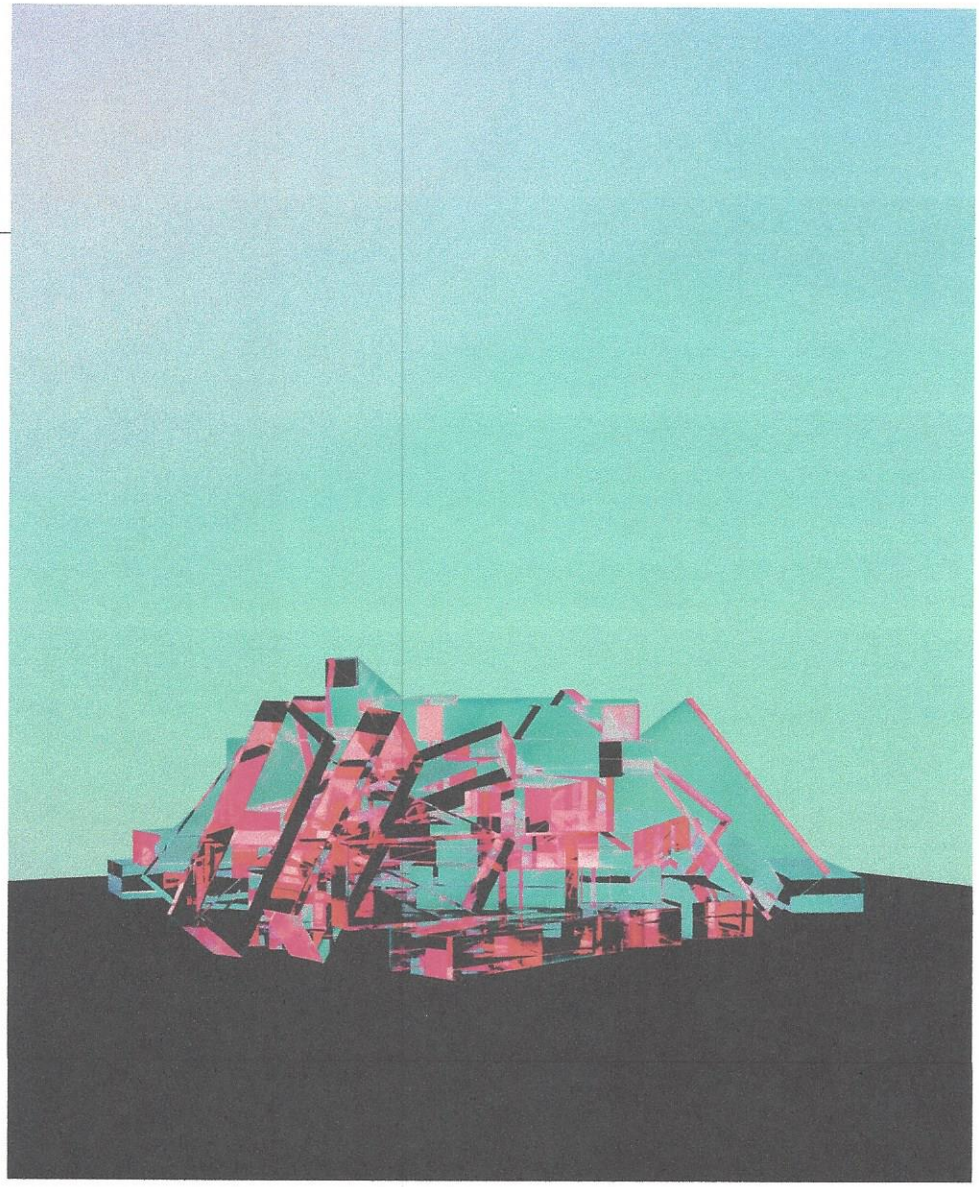

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IDEA IN BRIEF

THE PROBLEM

Few companies use the strategic tool kit—scenario planning, Monte Carlo simulation, and real options—for strategy development under uncertainty. Most have stuck with conventional techniques for strategy-making, to the detriment of customers, shareholders, and other stakeholders.

WHY IT HAPPENS

Executives complain that the tools require data that is impractical to gather and analysis that is too expensive to perform routinely. Moreover, the output can be counterintuitive and complicated to explain to senior leaders and a company's board.

HOW TO FIX IT

Business leaders need to think of strategy-making as a continuous process that generates a living, dynamic plan. That demands a new approach and mindset for making decisions along with a new model, proposed here, for strategy development and performance monitoring.

In crafting strategy, companies often struggle to cope with volatility. Using the traditional strategic-planning model, managers attempt to forecast how markets will evolve and competitors will respond, and then define a multiyear plan for winning in that future state. The organization is then called upon to execute that plan. Performance is routinely monitored, ostensibly to keep everyone on track.

Most companies have stuck with conventional techniques for strategy-making, to the detriment of customers, shareholders, and other stakeholders.

That approach worked well when markets were more stable and the primary factors influencing future growth and profitability were easier to forecast. Consider commercial aviation. From 1980 to 2000 growth in that sector was relatively constant, with air traffic miles growing at just under 5% a year. Manufacturers and airlines employed discrete models to assess investments in new commercial-airplane programs and to plan fleets. Airbus and Boeing expanded aggressively over those two decades: The global fleet tripled from 5,000 to nearly 15,000 aircraft.

But then came the 9/11 terrorist attacks, wars in Iraq and Afghanistan, oil price spikes, the global financial crisis, environmental concerns, SARS, and Covid-19. Forecasting commercial air travel became arduous and complex and was frequently wrong. And that's just one industry.

The world is now changing so quickly that no business can plan for every eventuality. Scholars and practitioners have spent years crafting tools and frameworks for strategy development under uncertainty—including, most notably, scenario planning, Monte Carlo simulation, and real options analysis. Each of those represented a significant advance. Scenario planning, which became popular in the 1970s, encouraged executives to consider multiple future states in assessing strategic investments, rather than rely on a single, deterministic forecast. Monte Carlo simulation went even further, specifying a probability distribution for each critical variable and then running thousands of simulations so that executives would focus on the distribution of potential outcomes as much as on any prediction of the most likely one. Real options analysis emerged as a further refinement in the 1980s, explicitly incorporating flexibility in the consideration of strategic investments.

But none of those techniques has caught on widely. Fewer than a quarter of large organizations regularly apply them in capital budgeting, fewer still in strategic planning. Executives tell us that the tools require data that is impractical to gather and analysis that is too expensive to perform routinely. Moreover, the output can be counterintuitive and complicated to explain to senior leaders and a company's board. The upshot: Most companies have stuck with conventional techniques for strategy-making—even in the face of extreme volatility—to the detriment of customers, shareholders, and other stakeholders.

We believe that business leaders need to reconsider what good strategy looks like in turbulent times—and to think of strategy-making as a continuous process that generates a living, dynamic plan. In this article we describe what it takes to produce great results during uncertainty and propose a practical model for strategy development that we have seen work at several leading companies.

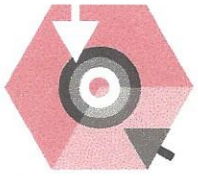
A CONTINUOUS PROCESS

Dell Technologies is one company that has made the shift. In 2014, shortly after Michael Dell took his company private, its leaders put in place a new, continuous approach to strategy development and resource allocation. At its core is the "Dell agenda," a backlog of strategic issues and opportunities that must be addressed to improve the long-term performance and intrinsic value of the company. Rather than devise a "strategic plan" to address the agenda, Dell's executive leadership team defines a multiyear outlook (MYO) for each of the company's businesses. The MYO establishes a forecast for the performance trajectory of each business on the basis of decisions leadership has already made; it does not incorporate decisions that leaders might make in the future.

The MYO is compared with a multiyear performance goal that is defined separately and tied to leadership's strategic and financial aspirations for the company. Invariably a gap exists between the MYO and those aspirations. This is helpful and a cornerstone of the approach: The Dell agenda focuses the company's executives on making the decisions necessary to close that gap. Moreover, the Dell agenda is evergreen: As soon as one issue has effectively been addressed (and the MYO updated to reflect the resulting performance commitments), a new issue is added to the agenda from the backlog. As a result, Dell has a "living plan"—which captures all decisions that have been made—and a process focused on making decisions to drive better performance.

Thinking of strategy-making as continuous and generating a living plan enables executives to build on what's best about existing tools for coping with uncertainty—leading to more-flexible strategies and more-agile strategy-making.

Let's look in detail at the five steps of this new approach and how each leverages the tool kit for strategy-making under uncertainty.



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1 Define Extreme but Plausible Scenarios

Companies that employ scenario planning attempt to forecast how political, economic, technological, and social conditions may evolve. They then develop best-case, worst-case, and base-case scenarios that are probability weighted to assess strategic moves.

In our experience, looking at scenarios in that way too often produces incremental thinking—tweaks in a company's current direction rather than a wholesale change in course, which is often what's needed. Breakthrough insights come from examining what we call *extreme but plausible scenarios.* The goal of this analysis is not to understand which outcome is most probable but to uncover new and different ways to compete and win, given a plethora of possible outcomes, and to reveal "no regret" moves that should prove worthwhile under most scenarios.

Consider CMS Energy, Michigan's largest electric and natural gas utility. A decade ago the company's leaders recognized that the fundamentals of its business were changing rapidly. CMS was facing a dynamic regulatory environment; the emergence of new generation and distribution technologies; changes in the supply and cost of critical inputs for coal, gas, and nuclear power; and evolving market conditions that affected the demand for electricity locally and nationwide. Amid this uncertainty CMS needed to determine which strategic investments to make and when to make them.

Historically the company had developed investment plans by carefully examining futures prices for coal and natural gas along with forecasts for future rates based on discussions with regulators. Had CMS stuck with that approach, it probably would have continued along its prior path—investing incrementally in additional gas and electric capacity and waiting for changes in regulation or competition to threaten its profitability before altering course.

But CMS chose to employ a different model. Its leaders developed four extreme but plausible scenarios: *deregulation* (which envisioned a near-complete deregulation of the interstate electricity market); *elimination of hub-and-spoke* (which foresaw point-to-point flows of power across state lines); *decarbonization* (which anticipated a rapid increase in environmental regulations); and *abundant gas* (which built on the possibility that new sources would provide low-cost natural gas to the U.S. market). None of those scenarios was viewed as likely. Rather, they represented outcomes that the company might face, each with a very different impact on CMS's core utility business.

Using an analysis of the company's position under each of the four scenarios, the executive leadership team identified several no-regret moves, such as deleveraging CMS's balance sheet, improving customer advocacy to help manage regulatory risk, and finding ways to reduce the costs of fuel and purchased power. Those actions would be valuable under all four scenarios. Leaders also saw the potential to reconfigure the company's generation portfolio according to the availability and cost of natural gas balanced against pressures for decarbonization. As important, CMS discovered that its traditional strategy of incrementally adding capacity was risky under all four scenarios: It would leave the company vulnerable to assault by regulators and competitors and behind potential changes in the market for electrical power. In fact, no one anticipated at the time that natural gas prices would fall some 67% in 2014, but that's exactly what happened.

Because leadership had identified extreme but plausible scenarios as opposed to most-likely scenarios, the company was better placed than competitors to switch generation from coal to gas quickly, which put CMS Energy in the top decile of utilities in terms of shareholder returns from 2015 to 2020.

2 Identify Strategic Hedges and Options

In an uncertain world, flexibility has tremendous value. If at the start of your commute you foresee the potential for traffic congestion, for instance, you might choose to avoid an elevated highway (with few off-ramps or on-ramps) and take a more flexible if longer route to save time. Likewise, leaders can incorporate the value of flexibility—in the form of hedges and options—into their strategic decision-making.

Investing in strategic hedges and options is not the same as placing a bet on every square. Juggling competing bets dilutes leadership focus and squanders scarce talent.

Real options analysis emerged as a methodology to help companies better account for this value. A real option represents a right but not an obligation to undertake some business decision, which means that the option holder can delay further investment until additional information has been analyzed. Techniques based on financial option pricing allow analysts—given the right data—to quantify the value of being able to delay or walk away from an investment. In the early 2000s real options analysis was widely seen as a cutting-edge tool for valuing natural resource investments, formulating new product-development plans, analyzing R&D spending, making acquisitions, and evaluating technology investments. Sadly, it has never really taken hold in strategic planning. Strategists have struggled to specify the model's parameters sufficiently to render its output useful to them.

In our view, companies have sidelined real options analysis prematurely, paying far too much attention to the mechanics of determining the *absolute value* of a specific real option rather than relying on the tool's basic principles to understand the *relative value* of competing strategy alternatives. For example, if two alternatives are equally capable of addressing a company's competitive issues, but one provides greater flexibility to alter course, defer investment, or redeploy resources on the basis of better information, that one has a higher relative value in most instances and should be selected. We encourage leaders to account for the value of flexibility in evaluating strategy alternatives, even when it is challenging (or maybe impossible) to quantify it absolutely.

Strategic flexibility has a variety of sources. In some instances new technology can create it. For instance, many railroads are replacing their aging locomotives with new engines. As the volatility of fuel prices has increased, deciding which fuel to choose for future locomotives has become critical. Starting in 2016 the spread between oil and natural gas prices increased significantly, creating an opportunity to shift to natural gas to fuel future locomotives. But no one could be sure whether the spread would persist or whether it would widen or narrow. At the same time, locomotive technology was changing, with flexible-fuel locomotives emerging as a viable alternative to single-fuel engines. The latter are less expensive but, obviously, far less flexible. Depending on a railroad's route structure, customer base, and strategy, the flexibility offered by the new engines can offset the additional up-front cost of purchasing them.

Often, though, the situation is less clear-cut, and leadership teams must choose between options with wildly differing payoffs, depending on how the future unfolds. By accounting for the value of flexibility, executives can often uncover strategies that allow them to hedge their bets while preserving valuable options for the future.

Walt Disney is a case in point. Several years ago Disney's leaders realized that streaming was threatening the viability of traditional cable and satellite services. In August 2017 Disney announced that it would acquire majority ownership of BAMTech, a global leader in direct-to-consumer streaming technology and marketing services. Disney's $1.58 billion investment caused a stir at the time, leaving investors wondering why the company would put so much into a relatively small platform (an offshoot of Major League Baseball). But that acquisition put the company in a position to launch Disney+ just over two years later. Four months after its investment in BAMTech, Disney initiated an acquisition of 21st Century Fox. At first that $71.3 billion investment looked like an attempt to double down on traditional broadcast media. But the acquisition was in fact a hedge, providing Disney with access to Fox's extensive film library—a collection that would be valuable no matter which distribution model persevered over the long term.

Disney's investments in strategic hedges and options enabled the company to pull far ahead of less-prescient rivals and led to a doubling of its market value between 2017 and 2020. Other organizations are following Disney's example as part of their long-term strategy.

It's important to note that investing in strategic hedges and options is not the same as placing a bet on every square. Trying to reduce risk in that way makes it nearly impossible for a company to score a big win (after all, we've seen few examples of relatively small positions being parlayed into market leadership) and locks in the certainty of many small losses that add up to real money. Worse yet, juggling a list of competing bets dilutes leadership focus, wastes precious time, and squanders scarce talent, further compounding the damage.

Consider Dell once again. In the years before 2013, not knowing how technologies would play out, Dell invested

across the board in smartphones, tablets, Chromebooks, printers, consumer PCs, commercial laptops and desktops, workstations, servers, storage, IT services, and software. Beyond PCs, workstations, and servers, Dell was a distant follower in most of the markets in which it had paid handsomely to play.

Only after Dell anchored its decision-making in extreme but plausible scenarios—ranging from *the death of the PC* to *mobility everywhere*—did the leadership team realize how many of its small bets were unlikely to pay off. Smartphones, tablets, and printers were among the first to be cut. Later the company jettisoned IT services and software. But the analysis also highlighted areas where it could double down on its investments and potentially win in the long term. Accordingly, Dell simplified its PC and server portfolios and reinvested a portion of the resulting savings to improve product design.

Those moves (and others) helped Dell win as the personal computer and server markets commoditized and consolidated. By exiting multiple markets to focus its bets in a strategic way, Dell drove up its operating income more than threefold from 2013 to 2020, and the company's market value increased by 420%.

3 Run Experiments Before Locking in Investment

Amazon's founder, Jeff Bezos, sees experiments as the key to innovation. Many of the company's experiments have spawned profitable new businesses—think Marketplace, Amazon Web Services (AWS), and Prime. Others, however, fared less well and were shut down quickly: Crucible, the company's foray into multiplayer gaming; Haven, its health care joint venture with JPMorgan and Berkshire Hathaway; and Spark, Amazon's attempt to build an Instagram-like shopping platform. But even the failures provided important lessons that helped Bezos and his team make future investments more successful. Its test-and-learn culture has made Amazon one of the most innovative and valuable companies in the world.

Leaders should set concrete guidelines for where they choose to experiment, because running many small experiments can quickly degenerate into placing many small bets—a losing strategy, as we've noted. At Amazon, for example, experimentation is confined to testing "dreamy" ideas—ideas that customers love, that could become very large businesses, that could generate very strong returns, and that have a decent chance of enduring.

Marketplace, AWS, and Prime all met those guidelines. Take Prime: No one on the Amazon team could point to data showing that giving customers free shipping for a yearly subscription fee would ever pay for itself. Through experimentation, first in select local markets and then globally, Amazon was able to validate the idea and build Prime into a $25 billion business by 2020, 15 years after it launched. In summary, small experiments are perfectly fine (in fact, encouraged), but each experiment should be tied to something very big to ensure that the test is worth running. Correctly applied, experiments prove the viability of big bets.

4 Identify Trigger Points, Signposts, and Metrics

The value of an option depends a lot on when it is exercised. In sectors where the winner takes most of the future profit pool, moving ahead of the competition can lead to enormous advantages. Consider Uber and Lyft. Uber accepted its first rider just 18 months before Lyft did, but that brief head start enabled it to build a sizable lead, with a 70% share of riders; Lyft has been confined to a 30% market share ever since. Even in markets where first-mover advantages are far less, knowing when to move is important. Accordingly, leading companies identify trigger points, signposts, and metrics to help them spot changes before the competition does and capitalize on the flexibility embedded in their strategies.

A leading automotive original-equipment manufacturer (OEM), for example, identified the penetration of battery electric vehicles (BEVs) as a critical factor, or trigger point, affecting most elements of its strategy—from the

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investments the company should make in traditional internal-combustion engine (ICE) technology to the size of its dealer network to its long-term governance and operating model. At the time, forecasts for BEV penetration varied widely, from less than 20% of worldwide vehicle demand by 2030 to greater than 50%. The manufacturer's leaders developed several extreme but plausible scenarios and decided to shrink the company's ICE footprint and investment plans consistent with a 30% penetration of BEVs by 2030.

However, management recognized that this planned reduction could prove insufficient if BEV penetration were to accelerate. So it identified some leading indicators, or signposts, to monitor BEV penetration—for example, government regulatory announcements, manufacturers' BEV commitments, BEV competitor production guidance to investors, BEV battery costs and trajectory down the cost/experience curve, and observed penetration rates by geography—with explicit metrics for each. It identified trigger points, signposts, and metrics for six other factors as well.

The specificity of these was critical, enabling the manufacturer's leaders to remain vigilant, poised to alter course at the first sign of a significant change in the market's trajectory. The company tracks metrics tied to each important signpost quarterly. The senior executive team agreed that if the signposts indicated that BEV penetration would hit 30% by 2028, the company should shorten its shift from ICE to BEV manufacturing by four years. By thinking through potential course changes in advance, leaders could exercise their options to best effect, taking full advantage of the flexibility associated with waiting to act with the benefit of additional information while maximizing the value of their profitable ICE business as long as was practical.

Signposts and trigger points are never static. By design, they reflect management's best understanding of the "known unknowns" affecting a company's strategy at a particular point in time. As more "*un*known unknowns" become known, signposts and trigger points must be revised and refined. For example, Netflix may not have identified Disney's acquisition of BAMTech as a signpost in advance. But it had to respond or risk losing its dominant position. Likewise, prior to January 2022 very few (if any) companies we know of had specified signposts tied to Russia's invasion of Ukraine. The few companies that quickly incorporated

The Drivers of Unpredictability

Four related sources of unpredictability make it almost impossible for strategy-makers to rely on deterministic forecasting.

The number of change vectors. Most sectors are affected by changes along more than one or two vectors. Take gold mining. Mining companies have long incorporated the volatility of gold prices in their planning. But today environmental concerns, arsenic regulations, changing safety standards, political instability, global monetary policy, technology breakthroughs, and a host of other factors have increased uncertainty for producers. Each factor must now be considered in making production decisions and assessing new projects. Miss even one, and a company could easily commit to the wrong course.

Connections among change vectors. Many vectors are interrelated: Changes in one area exacerbate changes in others. These interconnections multiply the number of variables that strategists must account for.

Forecasts for steady state. There is typically a wide range of forecasts for what "steady state" will look like along each vector. In the early 1980s one of the world's largest telecom companies concluded that cell phones would remain a novelty: Handsets were absurdly heavy, battery lives were short, coverage was spotty, and the cost per minute was high. Forecasting that the global market would be a mere 900,000 units by 2000, the company pulled out. Meanwhile, other operators, relying on forecasts 50 times larger, invested heavily in cellular. Trying to pick a single, best estimate is more likely to make you wrong than right.

The anticipated time until steady state will be reached. Forecasts about adoption rates often differ dramatically, and for good reason: They are hard to make. It took 18 years for 50 million people to trust ATMs, whereas WeChat had 50 million users in less than a year.

To understand the impact of these drivers on forecasting, take a simple example: If an industry faces eight change vectors, each with just four forecasts for steady state, that means 32 potential scenarios to be considered in making strategic choices. Factor in just four projections for the time required to reach steady state along each of the eight vectors, and the number of scenarios grows to 128. Because many of the eight change vectors and steady-state forecasts are interconnected, it quickly becomes apparent that the number of potential outcomes that executives would need to assess in setting strategy, even in this simple example, easily approaches 1,000 or more. And the world is far more unpredictable than this example implies.

Leaders must approach performance monitoring with a new mindset. The central question should be not "How did we perform?" but "Should we alter course?"

that event into their strategy were better positioned than competitors to keep employees safe and the business on a stable footing.

Strategy must respond to unanticipated changes in market and competitive conditions. Accordingly, when those conditions abruptly change, leaders must quickly revise the trigger points and signposts they are tracking, following the same process they used to establish the initial metrics. The more up-to-date a company's signposts, the better the odds of executing a successful response to external shocks.

5 Provide Prescriptive Surveillance

At most companies performance monitoring amounts to little more than reporting the weather. The leadership team meets, typically quarterly, to review each unit's performance against plan and identify variances. In some cases leaders push for better performance; in others they simply revise the plan to accommodate the variances. In such situations performance reviews provide little if any useful surveillance regarding likely future conditions or helpful guidance as to whether the company should consider changing direction.

To become more adaptable to changing conditions, leaders must approach performance monitoring with a new mindset. The central question cannot be "How did we perform?" Instead it must be "Should we alter course?"

Answering that question requires more and different information than does the standard weather report. Leaders must understand the root causes of any performance shortfall. And they must have prepared contingency plans that can be put into motion speedily to address any significant changes in market or competitive conditions. A few leading companies have created thresholds for grading signposts green, yellow, or red. When a signpost crosses a critical threshold, it signals a change in direction (red) or a need for deeper investigation (yellow).

Tetra Pak, an €11 billion food-packaging and -processing company headquartered in Switzerland and Sweden, has this type of performance monitoring in place. In devising the company's strategy, its leaders considered four scenarios, ranging from *go green faster* to *strong push toward commoditization*. The company tracks 42 signposts each quarter, including leading indicators such as the percentage of packaging required by law to be recycled in key geographies, the percentage price increase realized on packs with sustainability features, the percentage share of e-commerce players in the food and beverage segment, and average operating margins of food and beverage retailers.

CEO Adolfo Orive and his team keep quarterly business reviews focused on the future ("What do we need to do?"), not the past ("What were our sales in India last quarter?"). When signposts suggest a move toward one scenario over the others, management takes steps to accelerate its existing programs or launch new ones. That has enabled Tetra Pak to adapt its strategy quickly to fundamental shifts in environmental policy and customer preferences. To take just one of many examples at the company, as price elasticity in its largest markets increased far faster than its base forecast—a flashing-red indicator of commoditization—Tetra Pak accelerated its push toward lower-cost packaging. The new model has also made performance monitoring at the company far more action oriented and consequential, resulting in much higher levels of growth and profitability.

ALTHOUGH MANY PROMISING tools have been developed to help cope with uncertainty, most executives struggle in consistently applying them to make better decisions. Winning in uncertain times requires a new model for strategy development. Companies that move quickly to adopt the more dynamic approach we've set out will pull ahead—and stay ahead—in the coming decades. Those that stick with their "plan then do" ways risk falling irreparably behind.

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