

Scenario Planning: Plotting a Course Through an Uncertain World

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Contents

Executive Summary 4

Introduction 4

 What is Scenario Planning? 5

Why is Scenario Planning Relevant? 7

Why Should a Management Accountant Care? 11

Applications of Scenario Planning 11

Building a Scenario Plan 14

 Step 1: Define Objectives and Scope 16

 Step 2: Define Key Drivers 19

 Step 3: Collect and Analyze Data 21

 Step 4: Develop Scenarios 26

 Step 5: Apply Scenarios 31

 Step 6: Maintain and Update 34

Risk Factors Associated With Scenario Planning 36

Conclusion 38

Appendix 40

 Applying Scenario Planning at a Not-For-Profit 40

Further Reading 47

Useful Websites 48

Endnotes 49

Bibliography 50

About the Author 52

Review Committee 53

Scenario Planning: Plotting a Course Through an Uncertain World

Executive Summary

Scenario planning is a management tool designed to allow organizations to evaluate the efficacy of strategies, tactics, and plans based on a range of possible future environments. It is particularly relevant for today's increasingly uncertain and volatile world, where the pace of change is accelerating, and significant unpredictable events (e.g., the dot.com bust, 9/11, SARS, Hurricane Katrina, \$140 a barrel oil, the global credit crisis, H1N1, etc.), seem to happen with increasing frequency.

No organization has the luxury of locking into a single view of what the future may look like and placing all its bets on that outcome. The level of global economic interdependence, advances in technology, and changing business models are increasing complexity and hence uncertainty for all organizations. Those that fail to adapt to the new realities will stumble and ultimately fail; those that are able to respond quickly and confidently, and mitigate threats or seize opportunities, will thrive. Scenario planning allows organizations to plan for an uncertain future, enabling them to react with greater speed and confidence. Scenario planning can also be a valuable addition to an organization's risk management toolkit by addressing the impact of alternative scenarios on an organization's risk profile.

For management accountants, a working knowledge of scenario planning can help in applying core management accounting disciplines, such as cost management, profitability analysis, risk management, and performance measurement as well as forward-looking strategic and operational planning, budgeting, and forecasting. Leading or participating in scenario planning programs (a) provides management accountants with an opportunity to demonstrate real added value to their organizations, (b) reinforces finance and accounting's role as a business partner, and (c) is a significant addition to an accountant's skill set.

Although the literature on scenario planning is broad, there are relatively few practical guides that offer a logical and easily implementable approach for efficiently applying scenario planning techniques. This Management Accounting Guideline (MAG) is designed to meet this need, and is specifically focused on providing management accountants with the tools they need to lead, facilitate, or contribute to a scenario planning program.

Introduction

Imagine you are sitting at your desk. It is September 2007, the Dow Jones Industrial Average (DJIA) is close to 13,900; US unemployment is 4.5 percent; oil is at \$45 a barrel; the US/Canadian dollar exchange rate is 0.95; and the UK economy is growing at a healthy 3 percent rate. You are in the middle of developing your organization's plans and budgets for 2008. How likely is that the assumptions in your 2008 plan accurately forecast that one year from now (October 2008) the DJIA will be below

9,000; US unemployment will have risen to 6.5 percent on its way to more than 10 percent; oil will rise to over \$140 per barrel before falling back to below \$40; the US/Canadian dollar exchange rate will rise to more than 1.25; and that the UK economy will shrink by 5 percent? Never mind the impact of terrorist bombs in Mumbai, a collapsing housing market in the US and the UK, a global H1N1 pandemic, and an almost total freeze on credit. An aberration? Maybe – however there is no doubt that volatility and uncertainty are here to stay, and many managers are questioning the logic of basing strategies, plans, and budgets on a single, static view of the future that is derived from an extrapolation of past performance. Increasingly, managers are realizing that the past is not a good predictor of the future – hence the growing interest in tools such as rolling forecasts, dynamic budgeting, contingency planning, and scenario planning.

Scenario planning has been used sporadically for more than forty years. In recent years, interest in using scenario planning has significantly increased as organizations look at its application and potential value in navigating an uncertain future. This MAG will focus on the practical application of scenario planning tools and techniques in a variety of different business situations. Included in the MAG are:

- A discussion of the relevance of scenario planning in today's world;
- A discussion of the applications of scenario planning;
- A scenario planning methodology, illustrated with a case study;
- A discussion of the risks associated with scenario planning; and
- A reading list offering additional sources of information.

Also included, as an appendix, is a case study that illustrates how scenario planning can be employed at a not-for-profit organization.

What is Scenario Planning?

Scenario planning provides a structured method for managers to evaluate alternative views of what may happen in the future as an aid to strategic, operational, and financial planning.

Scenario planning provides a structured method for managers to evaluate alternative views of what may happen in the future as an aid to strategic, operational, and financial planning. Like many planning tools such as strategic and tactical planning, scenario planning has its origins in the military. Its adoption in the commercial world started in the oil and gas industry, notably at Royal Dutch Shell in the 1970s, where its use has been widely credited with helping the company weather the 1973 Arab oil crisis more effectively than many of its competitors. Since then, scenario planning has been used by organizations as diverse as The Australian Government, Autonation, British Airways, Corning, Disney, General Electric, The US Federal Highways Administration, JDS Uniphase, Mercedes, UPS, and The World Bank.

Peter Schwartz, one of the architects of Shell's process, described scenario planning thus, "Scenarios are a tool for helping us to take a long view in a world of great uncertainty."¹ Paul J. H. Schoemaker, founder of Decision Strategies International, expanded on this by saying that, "Scenario planning is a disciplined method for imagining possible futures that companies have applied to a great range of issues,"² and Harvard Business School professor, Michael E. Porter, defined a

scenario as a “discrete, internally consistent view of how the world may look in the future.”³ Simply put, scenario planning is a tool for helping to understand different views of how the future may look, which can then be used to assist in planning and decision making. It is primarily focused on describing plausible, alternative views of how the outside world may develop, and then interpreting the implications of each view on an organization’s current and future plans – it is an “outside-in” process as opposed to more traditional plans and budgets that typically only have an internal view.

Starting in 1994, British Airways has used scenario planning to understand the implications of increased competition from new market entrants, deregulation of airport landing slots, and the relative weakening of the competitiveness of government-sponsored or government-owned national flag carriers such as Air France, Alitalia, Iberia, Qantas, Sabena, and Swissair.

A scenario is a cohesive set of assumptions that describes a view of the future that is then used to develop a forecast or to test a strategy, plan, or decision. Scenario planning is largely focused on answering three questions:

1. What could happen?
2. What would be the impact?
3. What are the implications for our organization?

Scenario planning was initially adopted by very large corporations as part of their strategic planning process; in recent years, scenario planning techniques have become more widely used by many small- and mid-size organizations operating in uncertain or volatile markets, or facing major decisions that will be significantly impacted by changes in the future environment.

For many organizations, scenario planning is now an integral part of their overall planning and risk management processes.

For many organizations, scenario planning is now an integral part of their overall planning and risk management processes. As agility, flexibility, and responsiveness have become prized strategic capabilities, scenario planning has become an important tool, because it allows organizations to envision how their behavior will change in different situations. Scenario planning techniques are being used to help organizations better understand the implications of a broad range of decisions impacting business strategy, investment prioritization, and operations. Of particular note to management accountants is that many organizations are looking to integrate aspects of scenario planning into near-term management processes such as risk management, business case development, budgeting, forecasting, and competitive analysis.

In light of the economic turbulence of 2008-09, consulting firms Bain & Company and Deloitte both predicted growth in the use of scenario planning. Bain’s 2008 survey of Management Tools and Techniques indicated that 42 percent of organizations use some form of scenario planning – a steady increase from around one-third of all organizations when the study was first conducted in 1993.⁴

The First Use of Scenario Planning? General Motors 1941-46

Today General Motors is often cited as an example of all that has gone wrong with American industry since the 1960s; however, for thirty years GM was the largest and most successful company in the world – it was Google, Walmart, and Toyota all rolled into one. The architect of GM's rise was Alfred P. Sloan, who became President of GM in 1923 and eventually retired in 1956. During his tenure, Sloan effectively defined the role of the professional manager, and transformed GM from a mediocre number two, behind Ford in the US automotive market, into the world's dominant corporation. At the time, scenario planning was still largely a military tool, yet one can argue that Sloan was the first corporate leader to actively employ scenario planning in the corporate world, as illustrated by his account of how the company handled the advent of World War II in his 1963 biography *My Years with General Motors*.

In 1941, GM produced 2.3 million commercial vehicles; in 1942, production dropped to just over 300,000 units – an 87 percent reduction in just twelve months. At the same time, orders for defense-related products totaled over \$8 billion in 1942 alone, almost four times the total orders for military equipment that the company had received in its entire history to that point. As World War II ended, the transformation was just as dramatic, as vehicle production increased more than fourfold from 275,000 units to 1.2 million units between 1945 and 1946 before increasing to 1.9 million units in 1947. As Sloan commented with a touch of understatement:

“Fortunately, we had done some advance planning which enabled us to take on this vast problem systematically.”⁵

In fact, the company started to assess the implications of the US entering the war in June 1940, eighteen months before Pearl Harbor. GM's planning for a post-war world also started early. Sloan delivered a presentation to the National Association of Manufacturers entitled “Industry's Post-War Responsibilities” on December 4th, 1941 – three days before Pearl Harbor!

Why is Scenario Planning Relevant?

“First, don't believe your own predictions. Whatever you consider most likely probably will not occur. You have to be ready to question every – and I mean every – significant assumption.”

Michael Hofmann, the Chief Risk Officer for Koch Industries

Uncertainty, volatility, and unpredictability have come to characterize the environment in which most organizations now operate. For many, the luxury of relying on detailed long-term plans or budgets predicated on a stable view of the future has long gone. The global economic crisis of 2008-09 served as a powerful wake-up call: on the one hand managers began to understand the futility of trying to plan future performance in great detail based on a single set of assumptions, and on the other they began to understand the value of explicitly addressing risk and uncertainty in all aspects of the management process. In a *Harvard Business Review* discussion of the lessons to be learned from the economic crisis, Michael Hofmann, the Chief Risk Officer for Koch Industries, one of the largest private companies in the world, offered the following advice, “First, don't believe your own predictions. Whatever you consider most likely probably will not occur. You have to be ready to question every – and I mean every – significant assumption.”⁶ This has major implications for

the way most organizations plan, budget, and forecast – it challenges the value of developing a very detailed but singular view of the future, and then using that view as the basis for setting performance targets, allocating resources, measuring performance, and determining incentives. Scenario planning can help by explicitly contemplating alternative views of the future.

Investors, boards of directors, regulators, and managers are all seeking greater insight into both the positive and the negative impact of risk on future performance. Although most companies have made good progress on improving the quality and availability of financial information (with the occasional prod from regulators), leading companies are simultaneously upgrading the processes, measures, and tools they use to manage business risk. Risk identification, monitoring, and management are now integral parts of any effective performance management process. Scenario planning is one such tool.

Increasingly, success is being defined by those organizations that can anticipate and react best to changes in the marketplace. Two forces are fueling the changes:

1. Unpredictable one-time events that have rapid and broad global impact

These can be major external events like the collapse of the Soviet Union following the fall of the Berlin Wall, 9/11, or the emergence of the H1N1 virus; or they can be situational, where the impact is focused on a specific industry or organization that is unable to respond effectively to an event. For example, the music industry saw its economics blown apart by Napster and iTunes, Lehman Brothers was largely undone by a sudden loss of confidence by its counterparties, and GM's profit model was undone by \$4 a gallon of gasoline.

In his 2007 book, *The Black Swan: The Impact of the Highly Improbable*, Nassim Nicholas Taleb describes the human tendency to rely on observations of the past as predictors of the future, blinding us to the so-called "Black Swan" events that can be our undoing. Scenario planning can help cure this blindness by prompting managers to consider the likely impact and their response to material but unexpected events. For example, the H1N1 pandemic of 2009 should prompt organizations to develop a better understanding as to how they would respond to another such pandemic in the future.

2. Acceleration in the pace at which external and internal trends become material

There are numerous examples of market leaders seeing the future but then choosing to ignore it, only to be quickly vanquished. Levi Strauss understood that its customers were aging but failed to respond to the rise of The Gap and other casual clothing chains that attracted younger customers; Kodak invented the digital camera but worried about the impact on its film business; Wang saw the PC coming but failed to adapt to its introduction, which decimated demand for its word processors; Sony had no effective response to Apple's introduction of the iPod despite owning the portable music player market for more than 20 years; and traditional department stores long ignored the threat from Walmart. In each case, the problems were created by trends that accelerated over time

and that were either ignored or discounted. None of these trends exploded overnight, yet each organization was so locked into its own singular view of the future that markets they should logically have owned were ceded to competitors.

Scenario planning is all about asking questions such as “What if our view of the future turns out to be wrong?” or “What if the unexpected does actually happen?” Scenario planning provides a structured framework for evaluating the possible linkages between what is known today and what could happen tomorrow. It is not a precise science, and there is no right answer. The objective is to provide a framework for evaluating different courses of action. The answers to these questions are not certainties, and many financial professionals find the subjectivity and ambiguity embedded in scenarios unsettling, but the future is by definition unknown, so, rather than ignore it – embrace it!

Microsoft has successfully navigated three major shifts in its business while maintaining a dominant market position. First there was DOS, then came Windows, and then there was the Office suite – each generation preserved the company’s market dominance over a 30-year period. It has only been with the emergence of Google, Linux, and other new tools that the firm’s position has been really threatened.

Critics of scenario planning question the relative subjectivity of the approach and also its applicability to all but the largest organizations. However, many of these concerns are due to a failure to use the tool properly or engage the correct constituencies to ensure that:

- a) Senior management actively sponsors the use of scenario planning;
- b) The scenarios have credibility; and most importantly
- c) That the results are effectively integrated into management decision-making processes.

Like most management tools, the key is to use scenario planning in the right situations and ensure that the right parties are engaged in the process. Scenario planning is as much about the process an organization undertakes as it is about the results. The dialogue and debate that is inherent in effective scenario planning inevitably leads to the discovery of new insights about the interaction of different drivers of both the external and internal environment. The willingness to contemplate the impact of alternative future scenarios on strategies, plans, and decisions equips managers to navigate uncertain times with greater confidence and an increased awareness of the choices and options open to them.

Scenario Planning in Action: Shell

Shell has contributed much to the literature on the use of scenario planning. The company publishes its scenarios on its website (www.shell.com), and has developed a series of tools to help planners including a useful guide entitled *Scenarios: An Explorer's Guide*. Shell describes its use of scenario planning thus:

"Scenarios provide alternative views of the future. They identify some significant events, main actors and their motivations and they convey how the world functions. We use scenarios to explore possible developments in the future and to test our strategies against those potential developments. Shell has been using scenarios for 30 years. Our audience does not only consist of businesses and governments but of all people who are curious by nature, and who are highly motivated to acquire a deeper understanding of themselves and the world around them."⁷

The company goes on to describe how scenarios are used:

"Decision makers can use scenarios to think about the uncertain aspects of the future that most worry them – or to discover the aspects about which they should be concerned – and to explore ways in which these might unfold. Because there is no single answer to such enquires, scenario builders create sets of scenarios. These scenarios all address the same important questions and all include those aspects of the future that are likely to persist, but each one describes a different way in which the uncertain aspects could play out."

Scenarios are particularly useful in situations where there is a desire to put challenges on the agenda proactively (for example when there are leadership changes and major impending decisions), and where changes in the global business environment are recognized but not well understood (such as major political changes and new emerging technologies)."⁸

And, finally, Shell describes the value of scenario planning:

"Good scenarios are ones that explore the possible, not just the probable – providing a relevant challenge to the conventional wisdom of their users, and helping them prepare for the major changes ahead. They will provide a useful context for debate, leading to better policy and strategy, and a shared understanding of, and commitment to, actions."⁹

Why Should a Management Accountant Care?

There are a number of reasons why an understanding of how to effectively use scenario planning has value for a management accountant:

1. To enable the accountant to effectively support the strategic planning process as management considers the financial implications of alternative strategies under different future scenarios.
2. To provide a frame of reference for developing alternative financial plans and forecasts under different scenarios.
3. To test the sensitivity of key assumptions, financial measures, and variables under different scenarios.
4. As an aid in defining key performance measures and leading indicators.
5. As many organizations are integrating aspects of scenario planning into financial planning, budgeting, and forecasting processes, they are looking to their management accounting partners for support in conducting rigorous and insightful analysis.
6. Scenario planning is often used as an input to an organization's overall risk management process and can aid in areas of interest to management accountants such as risk appetite evaluation, capital planning, credit quality, cash flow forecasting, and hedging strategies.

And, perhaps most valuable of all:

7. An understanding of scenario planning equips management accountants with tools that can help advance their careers into more senior finance or general management roles through a richer understanding of how to effectively manage in a volatile and uncertain world.

Applications of Scenario Planning

Scenario planning is a means for managers to visualize the future and assess how they will respond in different situations.

Scenario planning has value in any situation where there is significant uncertainty about aspects of the future that could materially change an organization's strategy, plans, or decisions. Scenario planning is a means for managers to visualize the future and assess how they will respond in different situations. It is best suited to helping organizations understand the different ways fast-moving and/or complex environments may evolve.

To be effective, scenario planning must be focused – ideally around a material question or issue that needs to be answered or understood. These can be very specific, such as “Should we enter the Chinese market?”, or relatively broad, such as, “What are the implications of reducing the reliance on fossil-based fuels?” In either case, many variables could shape the future, making it difficult to construct a single scenario on which decisions can be made.

Looking back into recent history, there are a number of examples of situations (see Table 1) that were ideally suited to the use of scenario planning.

Table 1: Applications of Scenario Planning

Industry and Timeframe	Drivers of Uncertainty	Example Scenario A	Example Scenario B
Newspapers Late 1990s	<ul style="list-style-type: none"> Declining readership Rise of 24-hour television and online news delivery Changing advertising models 	Death of the Newspaper <ul style="list-style-type: none"> Traditional newspapers are replaced by a combination of free and online news services Advertising migrates rapidly to online media 	Reinventing the Newspaper <ul style="list-style-type: none"> Traditional newspapers refocus on less time-critical news delivery, analysis, and discrete local markets with real-time news delivered via online media
Automotive 2005 and Beyond	<ul style="list-style-type: none"> Demand growth in emerging markets Carbon emissions legislation Technology advances in hybrids, fuel cells, alternative fuels 	Slow Evolution <ul style="list-style-type: none"> Moderate oil prices Slow adoption of cleaner fuels and hybrid technologies Improved performance of traditional engine technology Limited government incentives due to weak economic performance and government debt levels 	Disruptive Revolution <ul style="list-style-type: none"> Sustained high oil prices Mandated reduction in emissions over a relatively short time period with penal taxes for non-compliance Emergence of 4 global companies (down from 8) Rapid technological advances in fuel cell technology Government-funded creation of alternative refueling networks
China 2010 and Beyond	<ul style="list-style-type: none"> Political stability Tolerance of economic freedom Trade policy Legislative agenda 	China Leads <ul style="list-style-type: none"> Leads the development of an Asian Economic Community modeled on the EC that embraces Japan, India, Korea, and other SE Asian nations Aggressively invests in US and Europe Domestic market rapidly grows and China becomes a net importer by 2020 	Back to Mao <ul style="list-style-type: none"> China restricts all trade inflows and outflows Dumps US dollar holdings Closes its economy in a return to hard-line communism; dismantles Hong Kong, assumes control of Taipei and Myanmar Engages in oil war with Russia to secure supply

In each of these cases, there was evidence that:

- Past performance was unlikely to be a useful predictor of future performance, meaning that traditional trend-based forecasting techniques would be of limited use; and
- A number of plausible scenarios could play out, based on information known at the time; current market participants could benefit from the ability to rapidly adapt strategies and plans to changing conditions.

These represent the ideal conditions for considering the use of scenario planning. Scenario-based planning can also be a valuable addition to an organization's risk management process, because it helps reinforce the concept of risk management over risk avoidance. Without the ability to test plans across different scenarios,

organizations don't know when they are taking too little or, conversely, too much risk. Being able to evaluate a range of outcomes allows an organization to know if it has reached an optimal balance between risk appetite and return. For example, in 2006 it would have been very plausible to develop a scenario for the US housing market that described an environment where the decade-long appreciation in house prices would cease for a time as the pool of creditworthy buyers and the availability of credit became depleted. By early 2007, the early signs that this scenario was becoming increasingly likely were clearly visible, and any player who had constructed such a scenario could have acted to avoid the worst of the subsequent crash.

Until recently, scenario planning has typically been used as part of the strategic planning process, enabling organizations to develop strategies that can adapt to alternative future scenarios; however, many organizations are now applying the technique to tactical and operational decision making. Examples include:

- Capital investment decisions such as building new plants, opening new retail outlets, and upgrading equipment;
- Market strategy decisions regarding market entry and exit, marketing spend by segment, and channel strategy;
- Financing decisions based on scenarios surrounding credit quality/availability, interest rates, and equity valuations; and
- Human resource decisions regarding location, sourcing, pay practices, and benefits costs.

Scenario Planning in Action: Corning

Corning is a \$6 billion (2009 revenue) global technology company that has five business segments: Display Technologies, Telecommunications, Environmental Technologies, Specialty Materials, and Life Sciences. Corning experienced spectacular growth in the late 1990s as demand for its optical products soared on the back of the telecommunications boom. Revenues grew from \$4.2 billion in 1999 to over \$7.1 billion just a year later. However, just two years later, revenue had collapsed to just \$3.1 billion, a decline of more than 56 percent, and the company had to lay off more than half of its workforce.

In the aftermath of the collapse, senior management resolved not to get caught again by another boom/bust cycle, so they developed a new set of scenario-based management processes to aid in the detection and management of future downturns. Their approach combined a series of early warning mechanisms tied to specific scenarios designed to provide management with time to prepare for a downturn. Each scenario was accompanied by a set of management tactics that could be implemented as soon as certain warning signals were triggered. The recession of 2008 put the company's plans to the test. Although Corning was not immune to the effects – it laid off 13 percent of its staff – the company's management team felt far better equipped to cope with the rapid decline in prospects. By combining research that looked not just at the health of the company's customers but also at its customers' customers to detect early signs

of market stress, with contingency plans that modeled tactics the company could employ under a variety of dire scenarios, managers were able to act with confidence and speed to mitigate the effects of the global recession – a very different story than 2001. Corning remained profitable throughout 2008 and 2009, and although sales fell during the first half of 2009, the company delivered earnings of 40 cents per share.

Building a Scenario Plan

Scenarios are a way of understanding the forces at work today (e.g., demographics, globalization, technological change, environmental sustainability, biotechnology) that will shape the future. There are four broad types of scenario:

1. Social: For example, what are the implications of increasing obesity?
2. Economic: For example, how will the rapid economic growth of China and India change global markets?
3. Political: For example, how will the expansion of the European Community change the political power of sovereign governments within the Community?
4. Technological: For example, what will be the impact of increasing adoption of smart phones on desktop and laptop computer usage?

Like most other management techniques, scenario planning is not just about the quality of the results that accrue from the exercise. Scenario planning should serve as a powerful educational tool for managers who participate in the process by (a) increasing awareness of the impact on uncertainty, and (b) allowing them to envision how their behavior and decision making will change under different conditions. A technically complete scenario plan is of little value if the learning and implications are not understood, accepted, and embraced by an organization's leadership team.

There are two basic models for organizing a scenario planning exercise:

1. Expert: A small group completes the scenario planning process, often led by the strategic planning team supported by external consultants and other subject matter experts.
2. Collaborative: The organization seeks input and participation from a broad cross-section of people from inside and outside the organization.

The expert approach, although having the advantage of usually being quicker and more focused than the collaborative approach, sacrifices much of the organizational learning and personal development opportunities. The collaborative approach is likely to ensure a more productive process and deliver more widely understood outputs, but requires careful planning, disciplined management, and the commitment of time by senior management.

Scenario planning should serve as a powerful educational tool for managers who participate in the process.

There are two prerequisites for embarking on a successful program:

1. Secure senior management commitment early in the process; and
2. Select the right participants in the process.

Securing senior management support requires that three conditions be met:

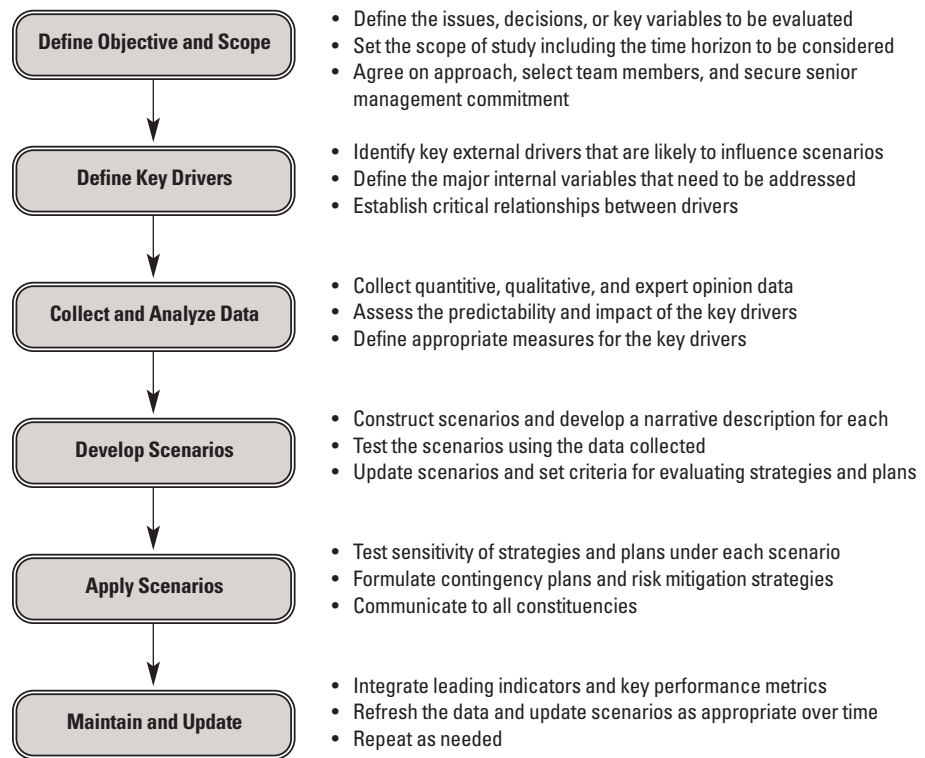
1. The program is sponsored by a member of the executive team;
2. The objectives and scope of the program are agreed by the executive team; and
3. The project team keeps senior management informed and engaged throughout the process.

The team should have the following attributes:

- Comfortable dealing with ambiguity;
- Awareness of the external environment;
- Understand the current operating model;
- Cross-functional;
- Combine analytic and creative minds;
- Excellent communication and facilitation skills;
- Able to access subject matter expertise as needed; and
- Respected by the senior leadership team.

Having secured senior management commitment and assembled the project team, the steps needed to build a scenario plan are straightforward. Although there are numerous methodologies for building scenario plans, they all follow the same basic approach (see Figure 1).

Figure 1: Scenario Planning Work Approach



Step 1: Define Objectives and Scope

Traditionally, scenario planning has been used to support strategic planning. The scope has therefore been broad and time horizons have been in the five to twenty year range. For example, many organizations are developing scenarios around the effects of an aging population in Canada, the US, and the UK, or the likely impact of environmental sustainability on markets.

Today, many organizations are also using scenario planning to evaluate specific plans and decisions over much shorter time horizons in support of prioritizing investments or making tactical market or product decisions. For example, a consumer products company developed a series of scenarios that looked out two to three years and forecasted the likely growth and consumption patterns of the Chinese middle-class in order to evaluate product launch and rollout plans for its products. Another example was a children’s charity that developed a series of two-year scenarios that focused on alternative donation patterns as the UK economy emerges from recession in 2010.

Before embarking on a scenario planning exercise, it is essential (a) to be clear about the issue you are seeking to address, and then (b) to define the appropriate scope and time horizon for the scenarios to be constructed. Answering the

following questions will help in determining whether a scenario planning project makes sense and, if it does, then defining the objectives and scope:

- What issues or decisions are we trying to evaluate?
- Is there a high degree of uncertainty about the future environment in which we will face these issues or make decisions?
- What is the time horizon for making decisions and then executing them?

For example, an oil company may have a 15-year time horizon from initial exploration to full production of a new oil field; a pharmaceutical company may focus on a 20-year time horizon that matches the patent protection period for newly approved drugs; a fashion retailer may only focus on a six- to nine-month window, which equates to the next two (spring and fall) selling seasons; and a government-funded agency may look at the next fiscal year.

Time horizons can also vary by the type of decision an organization is trying to make. For example, a semiconductor manufacturer may need to develop three- to five-year scenarios when looking at the economics of building a new semiconductor fabrication plant, while the same company may only need to look out six months to better understand the demand mix for its best products, based on alternative scenarios for adoption of the next generation of mobile devices.

Examples of Framing Issues

“What would be the impact on our strategy and business plans for the next three years if oil prices averaged:

1. \$55 a barrel?
2. \$110 a barrel?
3. \$175 a barrel?”

“How is the increasing affluence of the Chinese middle class likely to impact demand for our products over the next five years?”

“What implications will a weak dollar and low interest rates have on our plans for next year?”

“How will consolidation in the technology industry affect competition in the ‘software as a service’ marketplace?”

After the organization has agreed on the issue(s) to be studied and defined the scope and time horizon for the project, these should be documented, agreed with senior management, and clearly communicated to all those to be involved in the project. At the end of Step 1, the project team should (a) develop a project charter that clearly states the objectives, scope, issues to be addressed, and deliverables to be produced, and then (b) secure approval from senior management before moving to Step 2.

Below are two examples of framing statements for scenario planning projects.

“We want to better understand how the market for online university degree programs will impact traditional degree programs over the next five years. Specifically, we wish to understand whether online courses will simply increase the total market or siphon off demand from traditional programs.”

“Our objective is to understand the drivers of consumer spending over the next eighteen months and how they might translate into actual spending, so that we can develop budgets for sourcing, production, and inventory that allow us to capture any growth in spending without significant inventory buildup in the event of another economic downturn.”

To illustrate how this methodology can be applied, we will follow the progress of ElectricIQ, a software company focused on the development of smart systems for the management of electric usage in factories and office buildings. Three engineers from General Electric, Philips, and Shell founded the company in 2005. Sales have reached £25 million a year, primarily from the installation of electricity management systems in new office buildings in Western Europe. After five years in business, management believes that ElectricIQ is at a turning point. With the rapid emergence of environmental sustainability and concerns over CO₂ emissions as hot public policy issues, the company believes that the time is right to make a significant play for a piece of the software controls market that investments in the “Smart Grid” of digital environmental management systems is going to generate. They are also considering a move into the residential market; however, management is unsure as to how the market will develop and where to place their bets. Specifically, they want to gain insights as to the relative attractiveness/risk of the market for retrofitting existing infrastructure in Western Europe and North America versus focusing on new construction in China, India, Eastern Europe, and Latin America.

The company has decided to embark on a scenario planning project to help understand the alternatives in order to guide R&D investment, capital raising, marketing and product development plans. The company’s Finance Director and the Manager of Planning are chosen to lead the effort, but the CEO wants to make sure that the company taps the richest insights available. ElectricIQ therefore decides to use a collaborative approach. After initial discussions with the management team, the objective of the project is defined as being to: “Develop a better understanding of the relative growth of the markets for smart grid technology in different geographies, the risk profiles of each market, and the ease of access to such markets.”

The scope is limited to the market for software-based electrical control systems in the residential and office markets in North America, Western Europe, and Asia. The team agrees to defer consideration of the Latin American market until after the first phase. The Finance Director and Manager of Planning agree to devote one-third of their time to the program, and each assigns a full-time senior analyst to work full-time. They also engage an outside consultant to serve as a facilitator. The deadline for completion of the scenario plan is set at 120 days.

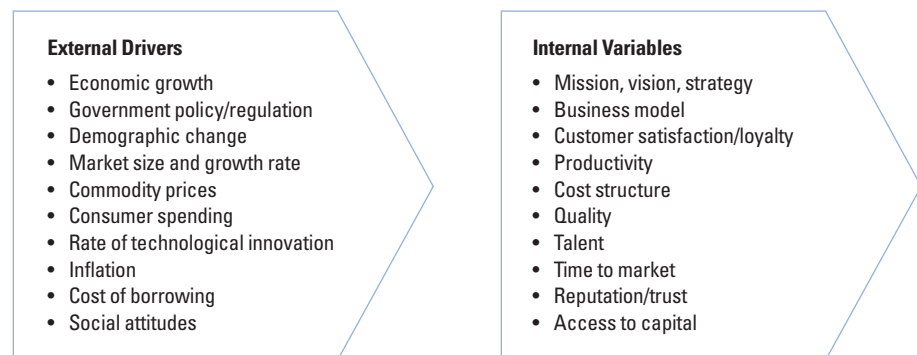
The heart of an effective scenario plan is to identify the right drivers around which to construct the scenarios.

Step 2: Define Key Drivers

The heart of an effective scenario plan is to identify the right drivers around which to construct the scenarios. In the context of scenario planning, drivers are external factors that could influence the future environment and impact key internal variables. This definition is very broad, so it is important to develop reasonable criteria for identifying drivers that are material to the organization or issues being addressed. Typically, this means identifying those factors that could materially impact capital requirements, profitability, or risk over the time period being considered.

Figure 2 provides examples of external drivers and internal variables that may be integrated into the development of scenario plans.

Figure 2: External Drivers and Internal Variables



Simply listing the drivers is the first step. The second step is to organize them around the specific issues that are being addressed in order to be able to then test these relationships during Step 3.

Can you pick the winner?

It is clear that the automotive market is moving in the direction of more economical and environmentally friendly power systems, but which technology will win out? Hybrids? Fuel cells? Battery power? Solar? Natural gas? Scenario planning could help frame the drivers that will determine the outcome.

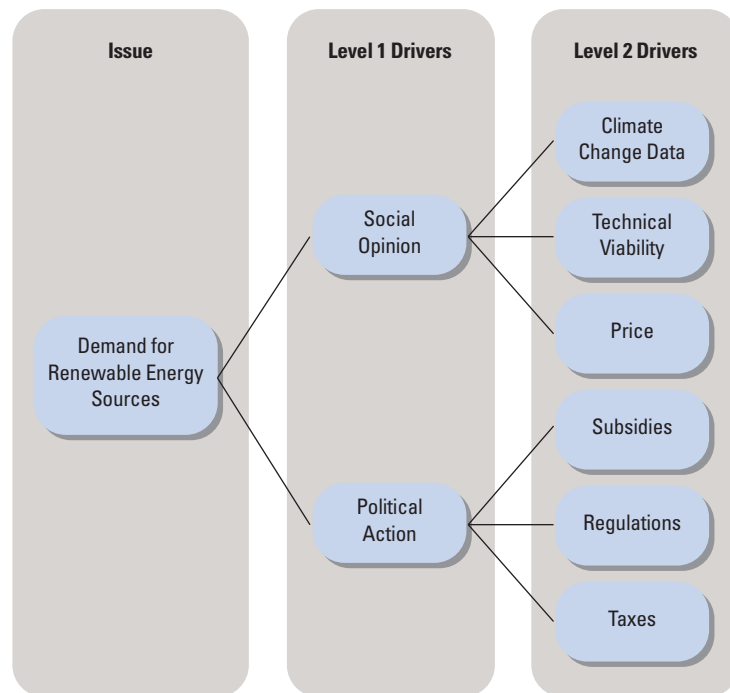
Figure 3 provides an example of how ElectricIQ organized the key drivers the team identified around a specific issue, and then tiered them to guide data collection and analysis (Step 3). ElectricIQ developed a candidate list of external drivers through three forums:

1. Views of the current management team and investors in the company;
2. Input from current customers; and
3. Discussions with external thought leaders in both the public and private sectors, including the European Community, OECD, General Electric, IBM, and Shell.

Based on these discussions, the project team developed a simple driver model around the central issue of the *Demand for Renewable Energy Sources*. Two Level 1 drivers, *Social Opinion* and *Political Action*, were identified as the two primary drivers of the future demand for renewable energy sources; however, in order to construct credible scenarios, it is necessary to define a second level of driver that can direct practical data collection and analysis. In this example, three Level 2 drivers have been identified for each Level 1 driver. *Social Opinion* is seen as being influenced by the credibility of *Climate Change Data*, the *Technical Viability* of potential renewable energy sources, and the *Price* of such options. *Political Action* is seen as being a function of (a) governments' willingness to *Subsidize* research into or use of renewable energy, (b) the *Regulatory Framework* that is imposed on all energy, and (c) the role that *Tax Policy* plays in energy use. This framework provides a basis for defining the types of data that need to be collected to help frame scenarios around the chosen issue.

Typically, the driver models will be more complex than in this example, but they should not be so complex as to lack clarity. Ideally, there will be 10-20 drivers that make up the model. Scenario planning is not an exercise in precision; it is a means of explaining how the future may unfold in rational terms; the end result is not that a scenario is either right or wrong, but simply that it provides a credible view of the future to aid in planning and decision making.

Figure 3: ElectricIQ: Driver Map



Step 3: Collect and Analyze Data

In traditional planning processes, much of the data collected is of a historic nature. After all, in most organizations, the only plentiful source of data is the records of past transactions and activities. As a consequence, the majority of plans and budgets are heavily biased towards the future extrapolation of past trends. This works fairly well when the past is a reasonably good predictor of the future; however, as soon as material uncertainties appear, it becomes dangerous to simply assume that the past describes the future. It is not surprising that usage of scenario planning increased significantly after the Arab Oil Crisis in 1973, Black Monday in 1987, and the dot.com bust in 2000. Similarly, the speed and impact of the global credit crisis in late 2008 has caused many organizations to question the value of trend-based plans.

When embarking on the development of scenario plans, the data collection net should be cast widely. Numerous types of data can be collected, including historic trends, future projections and forecasts, insights as to potential sources of disruption, alternative hypotheses of the future, and analyses of the relationships between key drivers.

At ElectricIQ, the data collection effort focuses on three areas:

1. Data about economic growth for the different markets, with related forecasts of construction activity;
2. Data about possible public policy and governmental actions to encourage the adoption of smart grid technology and other environmental control systems; and
3. The likely players in the market for environmental software control systems, including the entry of new innovative players.

Not all of the data needs to be quantitative; some of the most interesting inputs to scenario planning can be the diverse opinions of experts and futurists who specialize in conceptualizing alternative futures.

Not all of the data needs to be quantitative; some of the most interesting inputs to scenario planning can be the diverse opinions of experts and futurists who specialize in conceptualizing alternative futures. The key is to collect a broad range of data with a view to developing credible scenarios of what the future may look like, based on what is known or believed today. Table 2 illustrates the types of data and their sources that ElectricIQ used in their scenario plans.

Table 2: ElectricIQ Data Sources

Driver	Quantitative Data Sources	Expert Opinion	Other Data Sources
Social Opinion	<ul style="list-style-type: none"> • Polling data 	<ul style="list-style-type: none"> • Thought leaders 	<ul style="list-style-type: none"> • Press coverage • Pressure groups
Climate Change	<ul style="list-style-type: none"> • Climate statistics • CO₂ emissions 	<ul style="list-style-type: none"> • Futurists • Climatologists 	<ul style="list-style-type: none"> • Environmental impact analyses
Technical Viability	<ul style="list-style-type: none"> • Adoption rates • Product availability 	<ul style="list-style-type: none"> • Scientific journals 	<ul style="list-style-type: none"> • Patents • New product launches
Pricing	<ul style="list-style-type: none"> • Relative pricing • Economic cost • Vehicle sales 	<ul style="list-style-type: none"> • Demand patterns and forecasts 	<ul style="list-style-type: none"> • Consumer willingness to pay
Political Action	<ul style="list-style-type: none"> • Polling data • Renewable usage 	<ul style="list-style-type: none"> • Think tanks 	<ul style="list-style-type: none"> • Policy statements • Lobbyists
Subsidies	<ul style="list-style-type: none"> • Availability • Level of investment • Acceptance rates 	<ul style="list-style-type: none"> • Economists • Environmental scientists 	<ul style="list-style-type: none"> • Behavioral studies on impact
Regulation	<ul style="list-style-type: none"> • Emissions growth (decline) • Violations 	<ul style="list-style-type: none"> • Evolution of regulation • Legal experts 	<ul style="list-style-type: none"> • Legislative agendas • Government agencies
Taxation	<ul style="list-style-type: none"> • Redistribution effects • Growth rates 	<ul style="list-style-type: none"> • Assessment of scope and impact 	<ul style="list-style-type: none"> • Macroeconomic policy analyses

Scenario Planning in Action: Tourism Australia¹⁰

In 1993, Australia created the Tourism Forecasting Council to produce forecasts of tourism activity in Australia to assist both public and private sector decision making. In 2004, the Council was renamed the Tourism Forecasting Committee (TFC) and now forms part of the Tourism Australia government department. The TFC uses a number of quantitative and qualitative forecasting techniques to develop forecasts of key tourist metrics, such as inbound arrivals and domestic travel on an annual basis with a ten-year time horizon. Initially, the TFC did not use scenarios; forecasts were developed based on models of the key drivers of tourism such as GDP, relative price of travel in Australia and overseas, inflation rates, exchange rates, and population change. These quantitative factors were then adjusted for qualitative factors such as tourist preferences and tourism marketing efforts, and included expert opinion on how the relationships between key drivers and actual tourist activity might change over time. For example, what would be the impact of increased airline competition on routes to Australia?

The process worked well until the Asian economic crisis in 1997 when wild fluctuations in exchange rates and rapidly declining asset values made forecasting very difficult. In response, the TFC started to integrate a scenario-based approach into its forecasts by offering a range of possible future outcomes rather than a single forecast. The knowledge gained since 1997 prepared TFC very well for dealing with the global credit crisis in 2008-09. For 2009, TFC published its forecasts under three different scenarios. The first was the base case – their

most likely scenario; the second offered a more optimistic view; and the third a more pessimistic view. Table 3 below illustrates the impact of the three scenarios on the key metric of the change in number of tourists arriving in Australia.

Table 3: Change in Tourist Arrivals

	Pessimistic	Base Case	Optimistic
2009	- 7%	- 4%	- 1%
2010	+ 4%	+ 3%	+ 2%

The base case reflected TFC's most likely view based on currently available information at the time the scenarios were created; however, the level of uncertainty about the long-term impact of the still evolving recession was very high. The team went on to develop two additional scenarios, both of which were very plausible. The pessimistic case reflected a longer and deeper recession together with a more severe H1N1 effect that would have a more negative impact on tourism. The more optimistic case reflected a faster recovery with a much more limited effect from H1N1. The drivers of these two scenarios are described below.

Drivers of the *Pessimistic* case

- Lower increase in aviation capacity serving Australia driven by higher than expected oil prices;
- Less price discounting of tourism product (aviation, accommodation, tours, etc.) as providers focus more on yield than volume;
- A more prolonged slowdown in the world economy:
 - Fall in consumer confidence as unemployment rises
 - Less consumer response to tourism price discounting
 - Higher consumer savings rate;
- More negative impact on travel activity from H1N1.

Drivers of the *Optimistic* case

- Higher increase in international aviation capacity serving Australia as capacity is moved to relatively profitable Australian routes; or airlines lower price for air travel to Australia;
- Sustained price discounting in other tourism products;
- Shorter slowdown in the world economy:
 - Faster recovery of consumer confidence and spending
 - More positive consumer response to discounting of tourism product
- Minimal impact from H1N1.

The purpose of the scenarios was to offer the tourism industry the government's best view of the future, but also to ensure that industry participants understood the high level of uncertainty that existed and the possible implications, both positive and negative, for planning and operations.

The descriptions of the drivers of each case provides users with a clear set of "leading indicators" that they could use to modify their plans based on the real-time flow of information. Measures for these drivers such as unemployment, airline capacity, or H1N1 infection rates could then be included as key performance indicators in an organization's performance management process, enabling them to quickly identify and respond to changing market conditions.

Having collected the base data, the next step is to identify the relative impact and predictability of the drivers. For example, the supply of hotel rooms is largely predictable in the short term, whereas fashion trends or exchange rates are far less certain.

Even for drivers where the long-term trend has been reasonably stable, scenario planners should not be afraid to ask the question: "What could materially change this trend?" For example, during decades of relatively low gas prices, the US automotive market was relatively unconcerned with fuel economy; even the Arab oil crisis in the 1970s did not change long-term consumer buying patterns, whereas the arrival of \$4 a gallon of gasoline in the US, which happened to coincide with rapidly increasing environmental concerns, led to an upending of the market. Sales of high-profit, gas-guzzling SUVs and pickup trucks collapsed, and both General Motors and Chrysler filed for bankruptcy in 2009.

An even more spectacular inversion of a long-term trend was that US house prices would continue to appreciate as population growth, immigration, and economic growth drove demand ever higher. The bet that loosening credit quality would not increase risk, since appreciating asset values would cover any defaults had been a winner for more than a decade. However, the trend was reversed in late 2007 as house prices started to decline, and the rest is history.

Expect the Unexpected – The Extraordinary is Now Ordinary

We live in a world of extraordinary and largely unpredictable events. Since 2000, we have experienced the dot.com crash, 9/11, Hurricanes Katrina and Rita, the Asian Tsunami, SARS, the global credit crisis, H1N1, and the bankruptcy of GM and Chrysler.

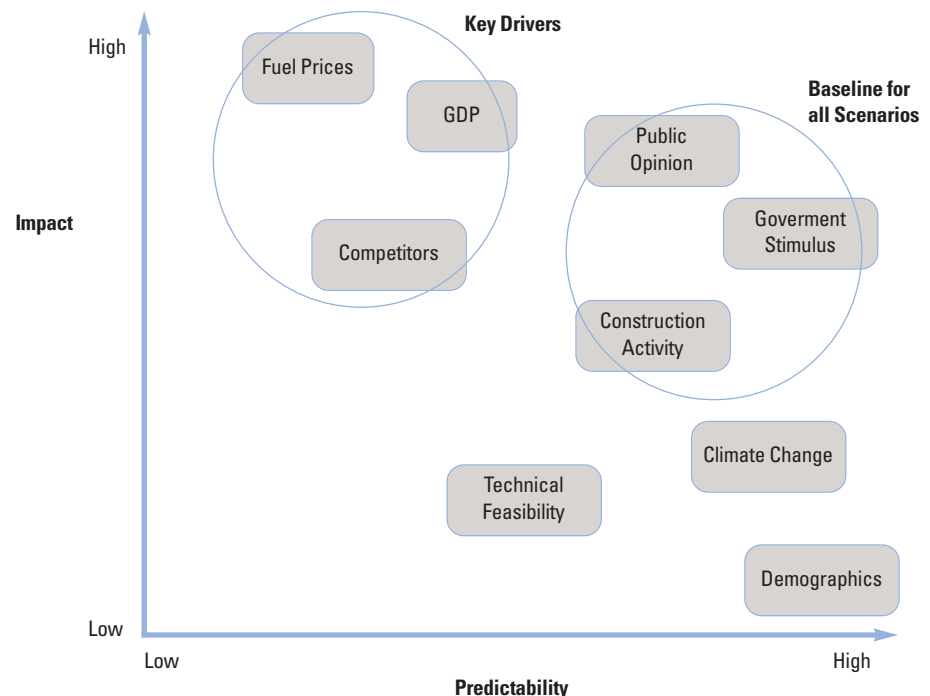
One of the key uses of scenarios is to test the unexpected. For example, it is widely predicted (and, it appears, generally accepted by many) that human actions are progressively leading to a warming of the planet that will have disastrous consequences if action is not taken; however, there is an alternative view supported by many that the earth's warming is natural and caused by the planet's emergence (over thousands of years) from a minor ice age. If the second argument turns out to

be true, many of the assumptions built into public policy and private enterprise strategies will be flawed. Scenario planning can help assess the impact of such events and guide the action that needs to be taken. Many organizations have used scenario planning to evaluate the impact of the current majority opinion turning out to be wrong. For example, in the late 1960s, there was considerable concern that the world's rapidly rising population would exhaust many of earth's finite resources before the end of the 20th century. This turned out to be wrong; many resources remain plentiful and the predicted demise of the oil industry has not occurred.

Scenarios are not directly concerned with probabilities; they are more concerned with plausibility. Several of the defining events of the last few years such as 9/11, the global credit crisis, and the H1N1 pandemic all had low probabilities, but were plausible. In a world characterized by increased volatility and uncertainty, the number of plausible but low probability events that can impact an organization or a market is increasing – hence the increased interest in scenario planning.

One technique that can assist in prioritizing drivers is to map them against two axes. The first axis is an assessment of each driver's impact or importance to the issue or decision being analyzed, and the second looks at the predictability of future trends for each driver. Figure 4 shows how the ElectricIQ team assessed their drivers. Drivers that are both material and reasonably predictable (top right-hand circle) can form a consistent basis for all the scenarios that are to be developed. Those that are material but difficult to predict (top left-hand circle) will be those that define the differences between the scenarios.

Figure 4: Evaluation and Identification of Key Drivers



After collecting and analyzing the data, the team updated the drivers identified in Step 2 that focused on the overall market, and identified those that were most likely to shape the demand for their products in the future.

Table 4: ElectricIQ – Likely Drivers of Demand

	High Impact
More Predictable	<ul style="list-style-type: none"> • Availability of government stimulus • Social opinion • Construction activity (at a given GDP level)
Less Predictable	<ul style="list-style-type: none"> • GDP growth rates • Fuel prices • Emergence of new competitors

Step 4: Develop Scenarios

The starting point for many scenario plans is the traditional planning view of the future, which is based on an extrapolation of current trends. In this context, describing how the key drivers are likely to behave in the future, based on how those drivers behaved in the past, leads to the definition of one scenario. This is a perfectly valid approach, and in many cases will turn out to be a reasonable basis for decision making. Such an approach (a) served the automotive industry very well for almost thirty years after World War II, (b) correctly explained consumer adoption of a succession of new electronic devices from televisions to DVD players, and (c) described the migration from Main Street to the mall.

The value of scenario planning comes to the fore when the past is not a good predictor for the future, and disruptive change occurs. For the automotive industry, it was the significant advantage that foreign manufacturers gained by focusing on quality; for consumer electronics, it was the disruption caused by the emergence of low-cost broadband Internet access; and for the retail model, it was the emergence of the “big box” retailer such Walmart, Target, The Home Depot and Best Buy. Organizations that continued to operate under the “business as usual” scenario suffered rapid declines are exemplified by General Motors, Chrysler, Motorola, Sears, and Woolworth.

The value of scenario planning comes to the fore when the past is not a good predictor for the future, and disruptive change occurs.

Disruptive Innovation

Who would have predicted that Apple would steal the market for portable music players from Sony, or that Netflix would beat Blockbuster at its own game – home viewing of films. Market leaders must continuously innovate if they are to stay relevant. Scenario planning can help by framing the range of possible changes that could occur in the future.

Crafting scenarios that lay out plausible alternative views of the future based on a change in the behavior of drivers or the relationship between them is at the heart of effective scenario development.

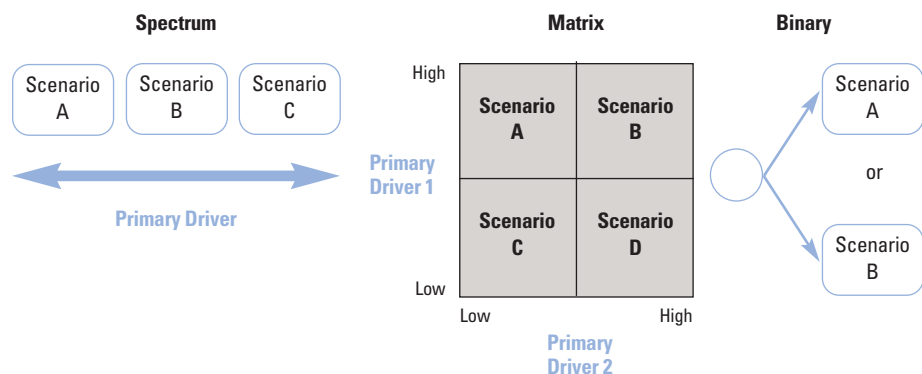
Guidelines for Developing Scenarios

1. Scenarios should be organized around the key questions or issues defined in Step 1.
2. Develop between two and four scenarios. Developing more than four scenarios can be confusing and counterproductive.
3. Each scenario should clearly describe the assumptions or preconditions on which it is based.
4. Each scenario must present a credible and logical alternative view of the future.
5. Each scenario should have a sufficiently distinct material impact on future plans or decisions.
6. The intent is not to develop the perfect scenario, but to provide a mechanism for testing strategy, plans, decisions, and behaviors under a range of credible future scenarios.
7. Scenarios do not have to be mutually exclusive; however, the differences between each scenario should be clearly documented and understood, and each should represent a different set of challenges across one or more key drivers.
8. The completed scenario should include:
 - a) A narrative description that sets out the major elements that describes each scenario.
 - b) A listing of the key drivers that will determine whether the scenario prevails.
 - c) The definition of the leading indicators that will provide early warning that a particular scenario is unfolding.
 - d) Quantifiable metrics that allow the organization to test strategies, plans, or decisions for efficacy under each scenario.

There are three common approaches for defining scenarios (see Figure 5):

1. Spectrum;
2. Matrix; and
3. Binary.

Figure 5: Approaches to Defining Scenarios



The spectrum approach isolates one major driver that has a spectrum of credible future states. A simple example would be the approach that many organizations used for developing their plans for 2010. During the latter half of 2009, when most plans were being developed, there was considerable uncertainty as to the medium-term economic outlook. Although stock markets were signaling signs of recovery, many other indicators such as unemployment, gold prices, housing, and credit quality were less positive. A prudent approach was to cast plans for 2010 under two or three different scenarios. Table 5 illustrates this approach.

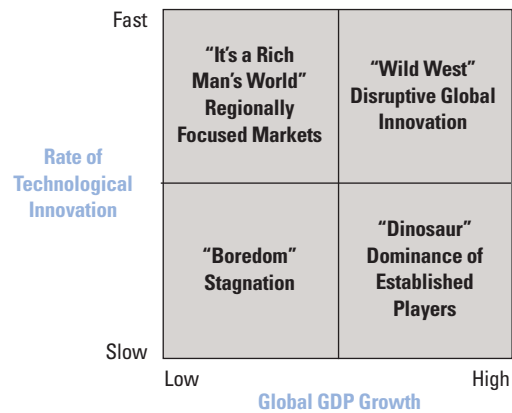
Table 5: Example of the Spectrum Approach

	Plan Scenario	Upside/ Strong Growth	Downside/ Continued Weakness
Description	Moderate pickup in economic growth in second half of 2008 that continues into 2009 with sustained low inflation.	Strong growth alternative more typical of a robust economic recovery.	Continued weak economic growth with inflation trending toward zero. Results in the longest period of economic weakness since the 1930s.
GDP Growth			
2008	3.4%	4.3%	2.6%
2009	3.3%	4.1%	2.3%
2010	3.8%	4.3%	2.4%
Consumer Spending	3.0%-3.5% growth with pickup due to increases in real disposable income, tax cuts, low interest rates, and low inflation. Relatively modest compared to prior economic recoveries.	Moderately stronger than the plan scenario.	Weak and well below the historical trendline
Business Fixed Investment and Inventory	Rebounds but at a slower pace than prior recoveries. Low pace of inventory-building following a sustained period of liquidation.	Significant pickup in business investment and inventory-building. Heightened business confidence with both faster growth in production and employment.	Ongoing business uncertainty with limited business investment and low inventory levels.
Corporate Profitability Growth	10%-12% growth with stronger economic growth and sustained productivity gains.	Faster profit growth generates greater stock price appreciation and improved credit quality.	Weak economic profits adversely affect the stock market and credit quality.

Organizations using this approach would have developed their baseline plan under one of the scenarios; typically this would be called the “plan scenario.” They would then test the sensitivity of their plans under the two alternative scenarios, identify the impact on results, and then develop alternative tactics or contingency plans that would be executed in each case.

The second approach is to organize the scenarios around two drivers in the form of a matrix. The matrix approach isolates two material dimensions that have a high degree of uncertainty associated with them. Figure 6 shows an example for the consumer electronics industry. The two drivers selected are the rate of technology innovation and the level of global GDP growth. This leads to four possible scenarios that are described below.

Figure 6: Sample Scenario Matrix for Consumer Electronics



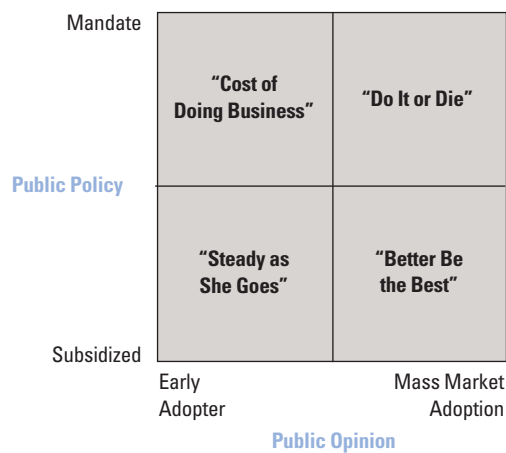
- **"Boredom"**: The lower left quadrant represents an environment of low economic growth and a relatively slow rate of innovation. In short, not much is happening. The period after World War II in Europe is a good example. For a decade, the continent was rebuilding, and innovation in consumer electronics did not really take off until television gained a foothold in the mid-1950s.
- **"Dinosaur"**: When GDP growth is robust but little innovation takes place, the established players and products tend to dominate. The European and US markets from the mid-1950s to the mid-1970s followed this model when, except for the introduction of color television, not much changed.
- **"It's a Rich Man's World"**: High levels of innovation but low global GDP growth tend to mean that innovations only penetrate already affluent markets. This happened in North America, Japan, and Europe from the mid-1970s to the mid-1990s. Despite many innovations – transistor radios, videocassette recorders, fax machines, PCs, and compact discs – the benefits were largely restricted to the already developed world.
- **"Wild West"**: When both innovation and GDP growth are healthy, the market is characterized by lots of growth and lots of innovative new companies with cool products – for example, the period from 2002-2008 as the smart phone, iPod, DVR, Xbox, video on demand, and flat-screen television emerged.

The third option is the binary approach that focuses on creating two scenarios using a simple structure where one scenario is "good" and the other is "bad." This can be effective for simple yes/no decisions where it is possible to define clear criteria

for the key drivers that determine whether they can support a decision. However, most situations are not so clear-cut, and the binary approach may provide insufficient choices.

ElectricIQ adopts the matrix approach and constructs four different scenarios across two dimensions (see Figure 7). The dimensions are (a) public opinion, which describes the level of consumer demand for environmentally friendly or “green” solutions, and (b) public policy, which describes the extent to which government policy incentivizes or mandates “green” standards. This leads ElectricIQ to four define four different scenarios to guide their planning:

Figure 7: ElectricIQ Scenario Development



- Necessity – “Do It or Die”: Public opinion swings rapidly to green solutions and dramatically changes customer buying patterns. Products not seen as being green are shunned in the marketplace. Governments mandate adoption of environmentally friendly technologies for new construction and remediation for all existing construction.
- Market-driven – “Better Be the Best”: Public opinion moves to green, and consumers are willing to pay extra for the best green products. Governments offer some incentives. Adoption is balanced between market innovation and a series of tax-based incentives by governments to encourage adoption of smart grid technologies. Being green becomes a source of competitive advantage.
- Mandate – “Cost of Doing Business”: Governmental action leads to hard mandates for adoption in the California model. Little support is provided and adoption becomes a “cost of doing business,” akin to a tax. Public opinion is not a major driver; consumers will not pay more for green solutions unless forced to do so through taxation or mandate.
- The “S” Curve – “Steady as She Goes”: Demand for smart grid systems follows a traditional adoption cycle of early adopters leading the way at high prices; as the market scales and prices drop, mass market adoption takes off before flattening out as maturity is reached. Little effective public policy or incentives are provided/needed.

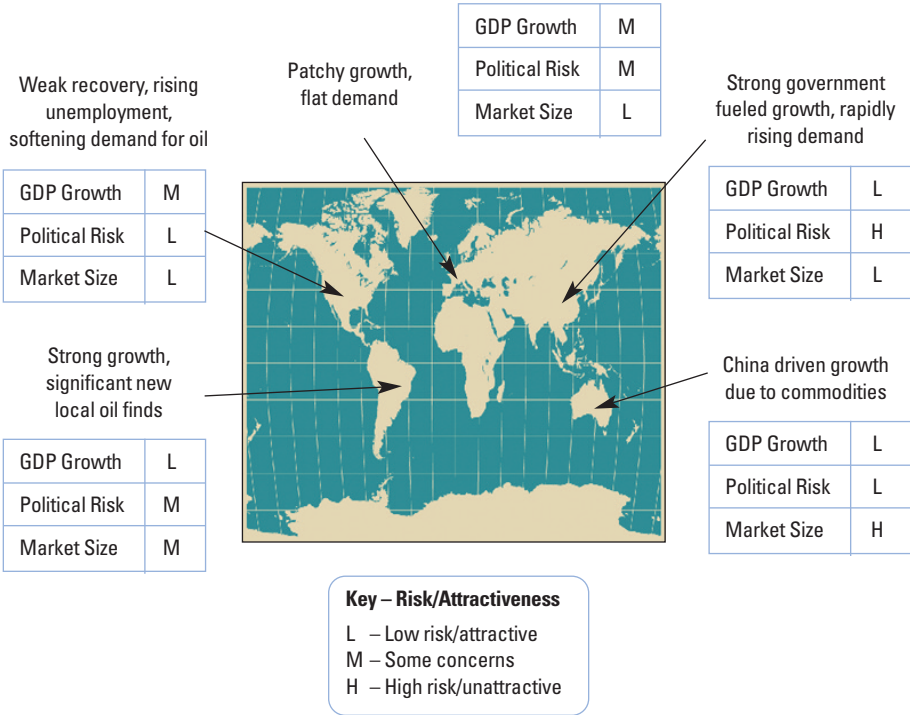
Having constructed a set of plausible and interesting scenarios, many organizations mistakenly think they are done – they’re not! Although creating plausible scenarios that resonate with management is satisfying, the real value comes by using the scenarios in a structured manner to test and adjust strategies, plans, and decisions.

Step 5: Apply Scenarios

One of the criticisms of scenario planning is that it can become a largely conceptual exercise with little practical application. It is a valid criticism, not of the technique itself but more of how the results are used (or, more accurately, not used). Too often, organizations pour a lot of effort into developing rich scenarios but fail to apply them in the planning and decision-making process.

Beyond envisioning alternative views of the future, the next step is to assess how plans, decisions, and priorities will change under different circumstances. For example, the effects of the global economic downturn during 2008/09 were not uniform. Many global businesses adjusted their investment priorities and reset their performance expectations as economies in China, Australia, and Brazil outperformed those in Western Europe and North America by a wide margin. Figure 8 provides an example of the type of scorecard one global business uses to assess the relative attractiveness of investing in different markets. During their planning process, they develop scenarios around each major region and then develop alternative investment portfolios based on the attractiveness of the regions relative to each other.

Figure 8: Prioritize Investment Risks and Opportunities



Similarly, a large Norwegian shipping line develops a number of different scenarios for global trade flows based on similar drivers, so that it can optimize the location and routing of its fleet under a wide variety of economic conditions. The company's finance staff uses the scenarios as a baseline for forecasting revenue and expenses each quarter under different sets of economic conditions. The team then updates this weekly, based on actual shipping movements.

The first step after completing scenario development is to test the sensitivity of strategies, plans, and budgets under different scenarios by asking, "What will be the impact?" Developing an understanding of the validity of different strategies and plans under different scenarios gives management a much clearer understanding of the risk factors, and hence the appropriate risk mitigation and management techniques that may need to be employed.

Back in 2006, Mike Jackson, Chairman and CEO of Autonation, a \$14 billion (2009) auto retailer, asked his management team two questions:

- What if car owners replace their cars once every five years instead of once every three years?
- What if cheap credit dries up?

After modeling the results of these, at the time, low probability scenarios, the company moved to reduce inventory levels and beef up its service operations to be able to cushion the effect of this scenario actually happening. What were the results? Autonation was profitable and generated positive cash flow in both 2008 and 2009, two of the worst years ever for the auto industry.

Let's look at how the four scenarios ElectricIQ defined in the previous step could be used to frame strategies and make decisions affecting key elements of the business.

Table 6: Scenario Implications

	Do It or Die	Better Be the Best	Cost of Doing Business	Steady As She Goes
Approach to Innovation	The minimum is not enough; must be best to win	Innovative leadership has real value	Must meet the standards; little advantage in being ahead of the curve	Focus on select areas where there is strong demand and we have a capability
Marketing Strategies	Either be the safe option (compliant) or the best	Must be a leader	Partner with builders and owners to secure share	Be #1 in select niches
Market Goals	Own the high end	Acquire share	Be the preferred supplier	Build share in niches
Financial Goals	High margins	Focus on size and scale	Low-cost producer	Modest growth over time

After understanding the broad implications of each scenario, organizations will frequently complete more detailed analysis of specific initiatives or decisions. For example, management accountants can use scenario plans to:

- Recast budgets under each scenario to assess the financial implications on revenues, margins, cash flows, and capital expenditures.
- Test the financial impact of alternative approaches under each scenario. For example, at Electric IQ under the “Do It or Die” scenario, the management accounting team could look at the alternative profitability and cash flows of positioning the company as (a) the low-cost source of compliance with new mandates, versus (b) seeking to establish a leadership position, whereby ElectricIQ’s products consistently exceed the minimum standards and can command a price premium in the market.
- Identify leading indicators and key performance metrics that can provide the organization with an early warning that the most likely future scenario is changing. For example, the adoption of broadband Internet technology in Asia progressed much faster than almost all forecasts, making online business models much more attractive. Leaders such as Google and Microsoft capitalized on this trend, while others such as America Online and eBay were less successful.

Table 7 shows how ElectricIQ’s management accounting team used the scenarios to develop a high-level financial model that laid out how forecasts of key market measures, business volumes, and financial measures would change under each scenario.

Table 7: ElectricIQ – Scenario Forecasts 2011-2013

Market: Western Europe				
	<i>All metrics expressed as percentage change from the current three-year trend (2008-2010)</i>			
	Scenario			
	Do It or Die	Better Be the Best	Cost of Doing Business	Steady as She Goes
	A	B	C	D
Market Metrics				
GDP Growth	3%	5%	1%	2%
Demand: New Construction	15%	24%	5%	4%
Demand: Remediation	20%	22%	8%	4%
ElectricIQ Volumes				
Existing Products	12%	32%	3%	7%
New Products	5%	28%	1%	3%
Western Europe Share	-2%	7%	0%	0%
ElectricIQ Key Financials				
Revenues	18%	30%	3%	5%
Gross Margins	4%	8%	0%	2%
Net Margins	7%	12%	1%	1%
R & D Investment	15%	25%	9%	5%

Step 6: Maintain and Update

Some organizations treat scenario planning as a one-off exercise or project. There is certainly merit in using scenario planning in this way, particularly as the effort required can be significant. However, in today's increasingly volatile world the future is rarely predictable, so many organizations are adding scenario planning to their management toolbox. A well-maintained set of scenarios would allow an organization to quickly (a) identify changes in the underlying assumptions on which their strategies and plans are built, and (b) change course. This can be translated into specific abandonment criteria that can be applied to strategies or projects. Abandonment criteria clearly set out the circumstances in which a particular strategy or project no longer makes sense because the underlying assumptions that were made when the investment was approved have changed.

The management accountant can use the developed scenarios to identify leading indicators that show whether the market is moving towards one of the scenarios, and then re-evaluate the mix of projects and investments that the organization is pursuing and determine what adjustments to make. For example, in ElectricIQ's case, the finance team looks at the number of state and local government authorities that mandate limiting of carbon emissions and then adjusts the marketing mix to target those markets more directly.

Scenario planning does not have to be an annual activity; many organizations tie the development and update of their scenario plans to major events rather than simply the turning of the calendar.

Scenario planning does not have to be an annual activity; many organizations tie the development and update of their scenario plans to major events rather than simply the turning of the calendar. For example, fast food chain McDonald's completed work on a new three-year strategic plan in October 2008; less than two months later managers realized that the rapidly changing global economic outlook required them to revisit the plan. Rather than stubbornly sticking to a plan that had been made obsolete by rapidly changing market events, they reworked the plan to include different scenarios for their plans for opening nearly 1,000 new outlets. Managers looked closely at the housing, employment, and retail market data in the specific locations where new openings were planned to fine-tune plans using the latest and greatest data.¹¹

Updating scenarios in response to material changes in the internal or external environment serves two purposes:

1. It forces managers to revisit the original scenarios and develop an understanding of what worked and what didn't, which provides valuable input to future iterations.
2. It will help flush out new opportunities and threats that have been created since the original scenarios were developed.

Updating scenarios can be a simple process of revisiting Steps 2, 3, and 4 by refreshing the data and then assessing the impact of any material changes in the scenarios on current operations and future plans. The most critical element is to avoid assuming that the relationships between key drivers and results remain the same. One of the most frequent causes of discontinuity in any market is a change in a long-established cause and effect relationship. Recent examples include the

breakdown between low interest rates and real estate prices; the reducing dependence of Chinese economic growth on US consumer spending; and one that is likely to emerge in the near future – that economic growth is directly correlated with an increase in carbon emissions.

Adapting planning and management processes to reflect increased volatility and uncertainty makes sense. Successfully navigating an uncertain world requires flexibility to adjust tactics and sometimes strategies in response to trends in the marketplace. Scenario planning offers a powerful tool for envisioning alternative futures and testing different plans and strategies; however it is not a substitute for ongoing risk monitoring or management. Employed appropriately, the regular updating of scenarios is both educational and impactful.

ElectricIQ decides to update its scenario plans at least annually, given the pace of evolution of the environmental agenda around the world. However, just six months after the initial scenarios are completed, oil rises in price to \$200 a barrel and a surprise global climate agreement by the G20 imposes strict mandates on CO₂ emissions that must be met within five years. ElectricIQ immediately revisits the scenario plans and decides to narrow its focus to just two of the original four scenarios. ElectricIQ's CEO directs the finance team to develop a six-quarter rolling forecast by region under both the "Do It or Die" scenario and under the "Cost of Doing Business" scenario.

Based on the results of the forecast modeling, the company decides to target its investments toward achieving a leadership position in delivering solutions that far exceed the mandated minimums while keeping pricing reasonable. They believe this is possible, as their current product range already delivers results that are superior to the new standards. The company does not abandon its scenario planning, although the focus changes to look more at the rate of adoption in different geographic markets as uncertainty about the level of public policy mandate has effectively been eliminated.

Scenario Planning in Action: Société Générale¹²

In November 2009, French bank Société Générale, the world's 11th largest bank with assets of more than \$1.5 trillion, published a series of scenarios for its clients. The three scenarios sought to (a) present plausible future views of how the world economy would emerge from the global credit crisis, and (b) provide investors with insights as to their investment strategy under each scenario. Table 8 summarizes the scenarios.

Table 8: Société Générale Debt Scenarios

	Worst Case	Central Case	Boom Case
Summary	Lengthy deleveraging and slow recovery over a five-year period	Back to potential economic growth in three years	Strong boom in one year
Characteristics	<ul style="list-style-type: none"> • Growth in emerging markets unable to offset negative GDP in developed markets • Property and equity markets continue to decline • Massive government borrowing 	<ul style="list-style-type: none"> • Moderate economic growth • Continued consumer deleveraging and increasing government leverage • Slow recovery in real estate 	<ul style="list-style-type: none"> • Low interest rates and government stimulus fuels strong growth with boom as rapid as the prior slump • Interest rates rise in 2011 to check inflation • Low equity and real estate prices fuel bargain hunting and increased valuations
Implications	<ul style="list-style-type: none"> • Record unemployment • Increased protectionism • Stagnant consumer spending 	<ul style="list-style-type: none"> • Unemployment peaks in 2010 and then starts a slow decline • Consumer spending picks up at a moderate rate as unemployment peaks • Taxes rise to fund government debt levels 	<ul style="list-style-type: none"> • Sharp decline in unemployment • Consumer sentiment improves as does spending • Stimulus and low interest rates drive strong business growth
Investment Focus	<ul style="list-style-type: none"> • Focus on bonds • Some exposure to commodities • Limit equity exposure 	<ul style="list-style-type: none"> • Balanced exposure across all asset classes with a slight bias to commodities 	<ul style="list-style-type: none"> • Commodities • Equities

Risk Factors Associated With Scenario Planning

Like any management tool, there are risks in implementing and using scenario planning. Successful scenario plans demand careful planning and clear communication. Table 9 lists some of the more typical risks and proven approaches to mitigate each risk.

Table 9: Risks and Mitigation Strategies

Risks	Mitigation Strategies
<p>Poorly defined issues or decisions make it difficult to identify key drivers and therefore construct scenarios.</p>	<ul style="list-style-type: none"> • Take enough time to frame the issues or decisions. • Up front, ask the question: “Can we define the decisions that will need to be made and who will need to make them as a result of completing this process?” • Always ask the “So what? Who cares?” questions to ensure relevance and ownership of issues and decisions.
<p>Too many scenarios are defined.</p>	<ul style="list-style-type: none"> • Limit scenarios to no more than four by mapping all potential scenarios against each key dimension, and combining those that have the most similarity. If you still have too many, let the senior management team vote on their top four. • Emphasize that the goal is not to define the perfect scenario. • Focus on material differences between scenarios.
<p>Scenario definition and refinement becomes a never-ending process.</p>	<ul style="list-style-type: none"> • Establish a clear timeline. • Frequently step back and ask the question: “Have we defined a logical and consistent scenario yet?” • Remember that with respect to the future, more detail does not equal more accuracy.
<p>Scenarios are perceived as being too subjective.</p>	<ul style="list-style-type: none"> • Ensure an appropriate balance of quantitative and qualitative data. • Each scenario needs to be perceived as credible; one way to do this is to show how each scenario can realistically evolve from the current state.
<p>Management becomes fixated on a single scenario or continues to rely on a single scenario long after it has ceased to be relevant.</p>	<ul style="list-style-type: none"> • Restate the objectives. • Offer real-world examples of situations where fixation on a single scenario proved dangerous. • Periodically refresh the scenarios and update assumptions used in strategies and plans as appropriate.
<p>Little changes as a result of developing scenario plans.</p>	<ul style="list-style-type: none"> • Clearly set expectations up front and secure senior management commitment through participation in the process. • Illustrate the impact, in both operational and financial terms, on current plans and strategies of different scenarios.
<p>Development of scenario plans is outsourced to third party consultants.</p>	<ul style="list-style-type: none"> • Ownership of the process must remain in-house; outside consultants can provide valuable facilitation or subject matter expertise but must not own the whole program.
<p>The explicit definition of multiple plausible scenarios makes it difficult to secure commitment to the chosen strategy or plan.</p>	<ul style="list-style-type: none"> • Emphasize that uncertainty is a fact of life, but that does not invalidate commitment to a common plan of action. In fact, the existence of scenario plans increases the likelihood that a chosen strategy or plan can adapt to changing circumstances by providing managers with a road map to respond to variability.
<p>Confusion exists between forecasts of future performance that offer a singular view of the future and scenarios that offer multiple views.</p>	<ul style="list-style-type: none"> • Forecasting is predicated on the assumption that the future is predictable, based on information and relationships known at the time of creation. Scenario planning assumes that the future is not predictable with any degree of confidence. Both techniques have value; however, it can be dangerous to apply scenario planning to factors that are reasonably predictable and, conversely, develop forecasts for inherently unpredictable factors.

Conclusion

Scenario planning is a powerful tool for focusing management's thinking around future risks and uncertainties in order to understand the implications on current strategies, plans, and decisions. However, it is not a silver bullet – no management tool is.

Scenario planning (a) creates awareness that the future will not always mirror the past, (b) helps ensure that managers take uncertainty into account in their planning and decision making, and (c) assists in understanding the implications of alternative future scenarios to be able to make fast, confident decisions on the actions that need to be taken.

Specifically, scenario planning can help in the following ways:

- By building sets of scenarios, organizations can develop several different versions of the future at the same time. This helps managers to keep thinking of the future as full of opportunities (and threats).
- It is a collaborative process that can accommodate multiple points of view.
- Different types of data and fields of expertise can be combined to develop a rich picture of what the future may look like and how it could evolve.
- Developing a few plausible scenarios can simplify planning by taking a huge volume of data and organizing it into a manageable number of alternative future states.
- The process of developing scenarios can be as valuable as the end result, by allowing managers to begin to understand the drivers of the future and their inter-relationships. Scenario planning is focused on developing alternatives rather than the fruitless task of coming up with “the right answer.”
- Scenarios do not demand consensus; opposing views can be equally valid (and useful).
- Scenarios address blind spots by challenging assumptions, expanding vision, and combining information from many different disciplines to increase awareness of future possibilities.

Consider the impact of the following:

- The impact of a flat rate income tax in the US.
- The creation of a Southeast Asian version of the EU that includes China, Japan, and Korea.
- The re-establishment of an eastern European political region mirroring the old USSR.
- The establishment of stable, democratic governments across much of Africa.
- Discovery of cures for all major cancers.

If these scenarios sound improbable, consider the following:

- It is 1985 and the question is asked: "What if the Berlin Wall comes down in the next five years?"
- It is the spring of 2007 and someone suggests that US unemployment will more than double in the next two years.
- It is 2005: What if Apple becomes the second largest cell phone supplier in the world?
- It is March 2009. A small flu outbreak in Northern Mexico is projected to become a global pandemic in eight weeks' time and essentially shut down the whole of Mexico for one week.
- It is September 10th, 2001, and a forecast is published that predicts a 70 percent decline in commercial air travel over the next 90 days.

For the management accountant, scenario planning offers a number of specific benefits:

- It helps put financial plans and budgets into the context of an uncertain future;
- It provides a foundation for explaining variations in performance by reference back to the drivers described in the scenarios;
- It can provide an early warning of potential opportunities and threats that can be incorporated into performance analysis;
- It identifies the risks of relying on the simple extrapolation of past performance as a basis for planning and budgeting; and
- It increases awareness of the external drivers of future performance.

As organizations across the world struggle to deal with an increasingly uncertain world, they are looking to their finance teams to assist in helping them understand the choices, opportunities, and implications that uncertainty presents. Applied judiciously, scenario planning can provide valuable insights into how the future may unfold, thereby equipping organizations to react with speed, agility, and confidence.

Finally, remember the words of Benjamin Franklin: "Those who fail to plan, plan to fail."

Applying Scenario Planning at a Not-For-Profit

This case study is based on a real organization (the author serves on its Board and Finance Committee); however the content has been developed/modified for illustration purposes. Although the organization is a not-for-profit, the study is applicable to all organizations.

Background

Summit Path School (SPS) is an independent, co-educational school with 600 students in Preschool through Grade Eight. The school is located in a national park in NE Ohio. Three major population centers totaling more than three million people lie within 25 miles of the school. The region, like much of the Mid-West, was once a major manufacturing center. Over the last 30 years, the region has experienced a major transformation as the once-dominant manufacturing sector declined. The few growth sectors in the economy are focused on healthcare, local government, services, and specialty chemicals. Although the overall economy continued to grow strongly in 2007, early signs were emerging that this may not be sustainable. The school's Board wants to understand the possible implications for the school's future. They decide to use a scenario-based planning approach to help gain a better understanding of the implications for the school of alternative future operating environments.

Step 1: Define Scope, Issues, and Time Horizon

Given the national economic uncertainty, the changing nature of the local economy, and broader demographic and social trends, the Board of Directors wants to better understand how the region may evolve/develop over the next decade in order to develop a long-term strategy for the school that can guide marketing, student recruitment, programing, and capital investment. Specifically, the Board wants to answer two questions:

- What will the region look like in ten years' time?
- How will that influence the demand for a Summit Path education?

A team is formed comprising two members of the Board, the school's chief financial officer, and two faculty members. In addition, a broader group of internal and external subject matter experts are identified who can provide input in specific areas, such as the changing economics of education, the impact of environmental issues, local economic trends, and social attitudes to private education. A steering committee comprising the executive committee of the Board, the head of development (fund raising), and the headmaster is also formed.

Step 2: Define Key Drivers

The project team starts by developing a list of likely drivers of the future for both the school and the region. This is developed through a series of focus groups with the

faculty and administration, the Board, parents, and local political and economic leaders. A subset of the drivers identified is shown in Table 10:

Table 10: Internal and External Driver Identification

Internal to the School	External to the School
Quality of the faculty	Economic growth – local and national
Quality of the curriculum	Demographic change
Student outcomes (test results, post-SPS path)	Public policy – state and federal
Marketing effectiveness	Availability and price of alternatives
Affordability (pricing/financial aid capacity)	Social attitudes to private education
Expense management	Changing educational delivery methods
Endowment growth and returns	Parental expectations
Perceived value relative to alternatives	Adoption of home schooling

The team also takes time to look to see if new drivers are likely to emerge that have not historically been material to the school. A number of candidates are identified, such as (a) the likely requirements for environmental sustainability, (b) attitudes to home-schooling, and (c) new curriculum alternatives, with a specific focus on globalization, language, and technology.

Step 3: Collect and Analyze Data

In Step 3, the team gathers historic and forecast data around each of the likely drivers. Data is collected from a number of sources including:

- Government, including the IRS, Department of Education, and State agencies;
- Private sector, including banks, economic forecasters, and think tanks;
- Educational institutions, including the National Association of Independent Schools and local school boards; and
- Internal information regarding student and parent demographics, economic profiles, financial aid patterns, post-graduation careers, etc.

The team analyzes the data using a variety of different techniques such as statistical modeling, root cause analysis, and what-if questioning to look at the relationships between different drivers and to understand the ability to predict future outcomes with any degree of certainty. After a number of iterations, including review with the full Board, internal brainstorming, and discussion with external subject matter experts, the team hones in on two primary dimensions that seem to best encompass the range of future scenarios:

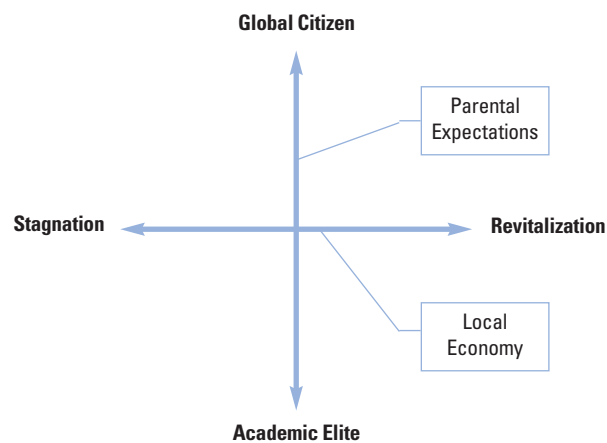
1. The local/regional economy: This is the primary external influence on a number of key drivers for the school, such as the pool of potential families who can afford a Summit Path education, the relative strength of alternative offerings

from public and parochial schools, and the ability to increase the school's endowment. The spectrum runs from a stagnant local market to a revitalized and growing economy.

2. The expectations of parents from a private school education: This driver influences much of the internal structure of the school, including curriculum, programing, staffing needs, and physical plant requirements. The spectrum runs from a parental focus on academics only to one where parents are seeking an education that prepares their children to become well-rounded global citizens and includes the alternative option of home schooling.

The team then develops descriptors for each end of the spectrum along each dimension (see Figure 9). So, for the economy, the two extremes were defined as "Stagnation" and "Revitalization," and for parental expectations: "Global Citizen" and "Academic Elite."

Figure 9: Defining Axes for Scenario Development

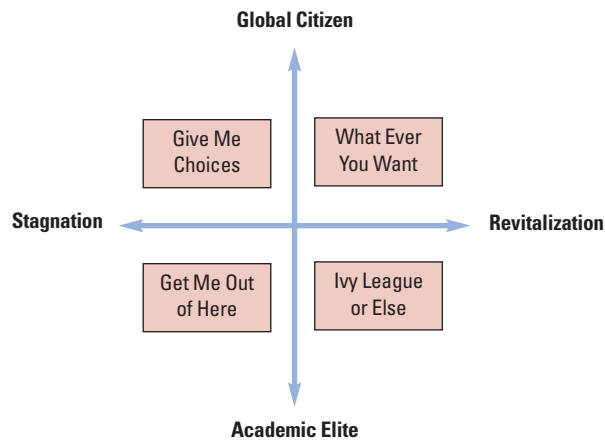


Step 4: Develop Scenarios

Having identified the two primary dimensions along which the team wanted to construct their scenarios, they plot each dimension onto a matrix (see Figure 10) to frame a possible set of future scenarios.

The team developed labels for each of the four quadrants as a frame of reference. They came up with *Give Me Choices*, *What Ever You Want*, *Get Me Out of Here* and *Ivy League or Else*.

Figure 10: Scenarios



With the basic framework for the scenarios in place, the team looked at the behavior of each of the key drivers under each scenario and drafted narrative descriptions for each.

Give Me Choices

The local economy is stagnant with little growth in population. Public school systems are weak and constantly wrestling with budget cuts. However, the global economy is reasonably strong, fueled by massive investments in environmental technologies. Global connections fueled by technology continue quickly, and young people are increasingly mobile in both their physical location and career choices. Parents want their children to get a good academic grounding but also highly value development of their children into socially aware and responsible citizens with a strong commitment to service and sustainability.

What Ever You Want

Choice matters. The key requirement of parents is to provide their children with the broadest range of opportunities possible in a changing world where globalization, sustainability, and technology are the dominant drivers of economic growth and social development. Parents are willing to pay a premium for an education that provides their children with an advantage in terms of the breadth and strength of academic and personal development programs. The region is successfully emerging from a prolonged downturn on the back of high technology, specialty, chemical, and renewable resource businesses, a thriving healthcare sector, and continued population growth in nearby rural areas.

Get Me Out of Here

Education is seen as the only viable way to escape the stagnant local economy. The local public school systems are deteriorating and Summit Path is seen as one of the few credible educational establishments. Those parents who can afford a private education will pay for their children to attend Summit Path if the academic return on

their investment, measured in terms of test scores, and high school and college admissions for SPS graduates, is demonstrably better than the alternatives; however the pool of families who can afford an SPS education is dwindling.

Ivy League or Else

Parents are singularly focused on academic excellence and seek out the very best education for their children and are willing/able to pay a premium for it. Educational achievement becomes the passport to everything in a manner very similar to Japan. Non-academic activities are tolerated only to the degree that they enhance the chance of future academic success.

Step 5: Apply Scenarios

Having developed the four different scenarios, the team then went through a process of analyzing the impact of each scenario on key aspects of the school from enrollment to the curriculum. Table 11 summarizes some of the findings.

Table 11: Scenario Impact Assessment

	Give Me Choices	What Ever You Want	Get Me Out of Here	Ivy League or Else
Enrollment	Reduce to two streams per grade (400+)	Three streams full enrollment (560+)	Reduce to two streams per grade (400+)	Three streams full enrollment (560+)
Tuition pricing	Seek to minimize need for financial aid with a smaller enrollment	Emphasize diversity and price to achieve	Selective use of financial aid to manage enrollment levels	Full price with limited financial aid
Market positioning	The best education in the region	Developing the global leaders of tomorrow	Clearing a path to success	Superior academic achievement guaranteed
Curriculum	Structure driven by need to maximize student options upon graduation within the confines of a limited budget	Breadth and choice emphasized – options such as Mandarin, Performing Arts offered	Excellence in the basics; outperform the public alternatives by a wide margin	Singular focus on preparing for elite high schools and colleges
Endowment	Steady focus on growing size of unrestricted funds that can offset tuition and staff costs	Aggressive solicitation to fund new programs and plant	Balance endowment growth with annual giving to manage to a tight budget	Aggressive growth but with a focus on funding to reduce student-teacher ratios to offer more personal tuition

This impact assessment was then used to test the degree to which current strategies and plans made sense under each scenario. Where appropriate, changes were made to minimize the downside impact. The Board’s chosen strategy was modeled on the *What Ever You Want* scenario that balances academic excellence with global citizenship. The school’s location in a national park lends itself to

creating a model of environmental responsibility, with plant and programs designed to not only be *green* but also prepare students to be effective and responsible citizens. Although this scenario is the preferred one, the Board recognizes that each of the other three scenarios are plausible, if not probable, outcomes, so they resolve to closely monitor the situation and adjust plans if needed. The CFO’s team also developed alternative views of the school’s five-year financial plan and 10-year capital plan under each of the different scenarios in order to establish the trade-offs that would need to be made in each situation.

Step 6: Monitor and Update

SPS uses the scenario plan in two primary ways:

1. As a means of communicating the school’s strategy and plans to various constituencies, including Board members, faculty and administration, donors, current and prospective parents, and accreditation bodies.
2. As a starting point for the annual and strategic planning process. The scenarios are updated (and sometimes redefined) based on the latest and greatest information now available.

One of the first tasks was to define a set of leading indicators that could provide the organization with an early warning that the environment was changing and that the Board and administration may need to take action. Table 12 illustrates some of the metrics that the school focuses on.

Table 12: Metrics Definition

	Internal	External
Future demand (enrollment)	<ul style="list-style-type: none"> • Inquiry pipeline • Parent and student delight (net promoter index) • Exit interview data 	<ul style="list-style-type: none"> • Regional economic growth • Competitive environment (number and pricing) • Incidence of home schooling
Parental expectations	<ul style="list-style-type: none"> • Regular surveys 	<ul style="list-style-type: none"> • Social trend data
Academics	<ul style="list-style-type: none"> • Test scores • Graduate destination and performance 	<ul style="list-style-type: none"> • Peer data • Awards and recognition
Financial	<ul style="list-style-type: none"> • Financial aid demands • Expense control • Accounts receivable 	<ul style="list-style-type: none"> • Inflation rates – general and education • State funding

These metrics are reviewed at least annually and are used as input to the annual update of the five-year strategic plan. One example of how the scenarios benefited the school was during the recession of 2008/09, when the Board was able to introduce aspects of both the *Give Me Choices* scenario: delivering the best academics on a tight budget, and the *Get Me Out of Here* scenario: outperform the public alternatives and temper expectations for endowment growth, in order to balance longer-term strategic goals with the near-term fiscal realities. The finance team at the school now develops the budget for the following year under two or

three different scenarios depending on the trends for selected key drivers, so that the Board can better understand the sensitivity of the school's financial performance.

Going forward, the school plans to refresh the scenarios every two to three years, or when a material event dictates the need. In reviewing the value of the exercise, the board commented that, "Going through the process was as valuable as the results since it gave everyone an appreciation of the significant impact changes in certain key drivers could have on the school."

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Useful Websites

Shell's scenario plans can be accessed at www.shell.com/scenarios.

A general site addressing many aspects of scenario planning
www.scenariothinking.org

An article from *Wired* on developing scenario plans
www.wired.com/wired/scenarios/build.html

World Economic Forum site on scenario planning
www.weforum.org/en/initiatives/Scenarios/index.htm

Interesting application of scenario planning in Malaysia
http://mpa.ub.uni-muenchen.de/10856/1/MPRA_paper_10856.pdf

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- ¹² Société Générale, *Worst Case Debt Scenario*, Core Asset Research, The Société Générale Group, November 2009.

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David A. J. Axson is an acknowledged expert in the field of business performance management. Over the last 25 years, he has advised more than 250 public and private sector organizations in Europe, Asia, Australasia, and North America. His most recent book, *The Management Mythbuster*, was published in January 2010. He is also the author of *Best Practices in Planning and Performance Management*, which is now in its third edition. He is a noted speaker, having delivered keynote presentations in more than 35 countries since 2007. Prior to his current role as an advisor, consultant, and author, David spent 12 years with The Hackett Group, of which he was a co-founder and chief operating officer, helping lead the company from start-up to an IPO in six years. Prior to moving to the United States in 1991, he held management positions at A.T. Kearney, Deloitte, Haskins & Sells, and Lloyds Bank in London, England. He holds degrees in Accounting and Computer Science from the University of Leeds in England.

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