A Note on Scenario Planning

Background

Scenario planning is a process that stimulates imaginative, creative thinking to better prepare an organization for the future. Participants in a scenario planning exercise first conduct research to understand the major forces that might move the world in different directions. They then map out a small number of possible alternative futures (called “scenarios”), craft narratives to describe these scenarios, and develop options for their organization for managing within these future worlds.

Scenario planning has been described as a way of rehearsing the future to avoid surprises by breaking through the “illusion of certainty.” According to an experienced participant: “The purpose of the exercise is not to come up with a forecast, because you know it will be wrong. Instead, it’s to draw a circle around multiple possibilities and think about whether you are prepared to face the range of futures that might unfold. It also helps you think about how you might be a catalyst for moving the world a little bit in the direction you want it to go.”

Unlike traditional strategic planning, which assumes that there is usually one best answer to a strategic question, scenario planning entertains multiple possibilities. Unlike contingency planning, which normally focuses on a single uncertainty, scenario planning investigates several uncertainties simultaneously. And unlike simulation modeling, which is heavily numbers-driven, scenario planning involves subjective interpretation as well as objective analysis. For these reasons, the technique is particularly useful in situations where uncertainty and change are high, costly surprises have occurred in the past, and the quality of strategic thinking or the supply of new opportunities is low.

Scenario planning was originally used for military planning during World War II. In the early 1970s, it was adapted for industry and popularized by planners at RoyalDutch/Shell, who were looking for better ways to prepare managers for possible changes in the price of oil. Using the new approach, Shell was the first to see the emerging overcapacity in the industry, was better prepared to deal with the ensuing drop in demand, and was consistently able to forecast oil-price changes better than its competitors. Since then, companies in many other industries have used scenario planning for such purposes as providing input to strategic planning, improving investment decision-making, and

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guiding thinking about competitive moves (e.g., product line extensions, new market entry, or the formation of joint ventures and alliances). Specific applications include a regulated monopoly’s preparation for a more free-market-oriented existence in an increasingly integrated Europe, the Los Angeles Department of Water and Power’s investigation of future residential water use, and a healthcare system’s search for options to best position itself for an uncertain future.

**Components**

Scenario planning involves several elements or components that together yield a composite, multifaceted view of the future. See Figure A for an overview of the process and the relationship among components.

**Figure A** Scenario Planning Components

![Scenario Planning Components Diagram]

Source: Casewriter.

**Key focal issue** All scenario planning exercises are built around a critical choice or key focal issue. Usually, the issue is a significant, upcoming decision or a strategic uncertainty that has important, long-range consequences for the fortunes of the organization. The scope and timeframe for choices and concerns should be clearly identified. Many key focal issues take the form of questions. Examples include: “Should we build a research facility in India within the next five years?” “Should we invest in new customer-based technology during the coming year?” and “What is the future of white-collar work in the United States over the next 10 years?”

**Driving forces** Research is an important part of scenario planning. It normally requires interviewing an organization’s key stakeholders—customers, competitors, and suppliers—as well as “remarkable people,” truly unconventional thinkers who may be in fields or industries unrelated to the issue at hand. This research aims to uncover driving forces: themes and trends that are likely to
affect, influence, and shape the key focal issue in fundamental ways. Among the major categories of driving forces are:

- Social dynamics (e.g., changes in population, demographics, lifestyle choices, consumer demands, and societal values);
- Economics (e.g., changes in international trade flows, the value of the dollar or the euro, and industry structure);
- Political affairs (e.g., changes in the electoral landscape, tax legislation, regulations, and the legal environment); and
- Technology (e.g., changes in hardware, software, communication devices, and applications).

In each case, driving forces are further divided into two categories: predetermined and uncertain. Predetermined forces are virtually inevitable; they are unlikely to change radically over the defined timeframe. Examples include trends that are already in the pipeline (such as demographic shifts), slow-changing phenomena (such as the development of new oil resources), and seemingly inevitable collisions (such as the Social Security crisis in the U.S.). Once these predetermined factors have been identified, all other driving forces are classified as uncertain.

**Critical uncertainties** Some of these uncertain forces are more important than others. Those uncertain driving forces that are most likely to define or significantly change the way the future unfolds around the key focal issue are ranked by level of uncertainty and importance to the organization. The top two that are most influential and informative are defined as critical uncertainties.

**Scenario framework** Each critical uncertainty is reduced to a single spectrum or axis of uncertainty, with polar cases at each extremity. The two axes are then combined to create a 2x2 matrix with four different quadrants of uncertainty or futures to be explored. The goal is to end up with a few, clearly contrasting environments “whose differences make a difference to decision-makers.” An example comes from the California wine industry’s inquiry into the future of their business. The first critical uncertainty was a set of changes in the regulatory environment; this axis ranged from a tight regulatory environment to a loose one. The second critical uncertainty was the image of wine with consumers; that axis ranged from a positive, health-priority image to a negative, alcohol-infused image. In combination, these axes produced four distinct futures.

**Scenarios** The different futures that result from the interaction of the critical, selected uncertainties are called scenarios. They are plausible, alternative hypotheses about how the world might unfold, specifically designed to highlight risks and opportunities facing the organization. Effective scenarios challenge the thinking of participants by instilling a deeper appreciation of the many factors that could shape the future. There are no right or wrong scenarios. According to one expert: “Scenarios don’t fall neatly into “good” and “bad” worlds, desirable and undesirable futures. [They] are mixed bags, at once wonderfully dreadful and dreadfully wonderful.” The California wine industry example resulted in four possible futures: a loose regulatory environment with a positive image (greater supply, higher demand, but possibly lower prices); a loose regulatory environment with a negative image (intense competition, lower demand, and wineries facing possible bankruptcy); a restrictive regulatory environment with a positive image (higher demand and

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higher prices); and a restrictive regulatory environment with a negative image (high prices but low demand, leading to excess supply).

**Narratives**  Each scenario is then fleshed out and woven into a narrative or story.\(^5\) These stories must be logically coherent and consistent. They should hang together like a well-written novel, with persuasive and surprising plots that stretch the imagination and break old stereotypes without being seen as science fiction. To that end, it is important to link the scenarios back to the present by answering the question, “How did the world get from here to there?” This link increases the probability that scenarios will be perceived as realistic, rather than as far-fetched staff exercises. It also overcomes a common concern of middle managers—that big picture “strategic scenarios don’t address the competitive issues and the critical decisions that they face in the trenches of their business.”\(^6\)

**Implications**  Once narratives have been created, participants return to the key focal issue, place the organization within each of the four scenarios, and explore the implications of each alternative future. This examination results in the identification of strengths and vulnerabilities, alternative strategies, and options to address gaps in capabilities, as well as further research requirements, necessary actions, and critical decisions and choices.

**Early warning signals**  Early warning signals are leading indicators that highlight the likely emergence of one scenario or another. They strongly suggest that the world is, in fact, moving in a particular direction, and the signals are best used to trigger strategic re-evaluation and midcourse corrections. If carefully selected, these signals can give a company a head start on the competition when changes in the environment occur. Possible examples include changes in governmental regulations, the outcome of pending lawsuits, and shifts in the price of basic commodities like oil.

**Methodology**

A typical scenario planning exercise involves 15 to 30 participants, selected to represent a cross-section of the company or organization. Often, customers, suppliers, regulators, industry experts, academics, and other relevant outsiders are involved as well, largely to provide information. The process typically requires significant preparatory research, a series of half-day or full-day workshops, and a number of senior management debriefing meetings. A complete exercise takes from three to nine months and proceeds through the following five steps: orientation, exploration, scenario creation, identification of options and implications, and integration into current management processes. (See Figure B for scenario planning stages; see Exhibit 1 for a detailed example of a scenario planning exercise.)

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\(^5\) The term “scenarios” is often used interchangeably with the terms “stories” or “narratives.” However, scenarios do not have to be presented in narrative form and may involve the use of other media, such as live or videotaped dramatic scenes.

**Figure B**  Scenario Planning Stages

![Diagram of Scenario Planning Stages]

Source: Casewriter.

**Stage 1: Orientation.** This stage includes background interviews and other research to determine the key issue and associated challenges.

- **End product.** The orientation stage results in a clear statement by senior management of the key focal issue, with specific time and place dimensions.

**Stage 2: Exploration.** This stage involves extensive research and workshop sessions to identify and deepen the team’s understanding of the driving forces and critical uncertainties surrounding the focal issue.

- **Identify, analyze and rank driving forces.** In this interactive brainstorming step, the planning team defines the many driving forces in the macro-environment that impact the success or failure of the key focal issue, and distinguishes those forces that are predetermined from those that are uncertain.

- **End product.** This step produces both a set of driving forces and a list of critical uncertainties. Once the team is satisfied with the list of uncertain driving forces, it then ranks them to identify the two critical uncertainties that are most influential and informative to serve as the basis for developing scenarios.

**Stage 3: Scenarios and narratives creation.** This stage involves two steps: the selection of the scenario framework and the creation of narratives.
• **Select scenario framework.** The team creates a 2x2 matrix from the two most critical uncertainties, resulting in four scenarios. The team then identifies the key characteristics of the scenarios, their causes, and the events that occurred as the world evolved from the present to the future point.

• **Create the narratives that describe the scenarios.** This next step involves a great deal of imagination as the team creates narratives for each scenario. This step is often undertaken by subteams, with each assigned to write one narrative.

Scenario planning experts suggest starting the process with the development of a headline, a catchy title or name for the scenario that can be easily remembered. Headlines can be song or movie titles, cartoon characters, or memorable phrases. Writers then weave the scenario characteristics and driving forces into stories that match the headline.

Here, several techniques are helpful for building compelling narratives:

- Craft a newspaper story. The technique starts with a headline describing key events or trends that might take place during the time of the scenario. A straightforward, believable news item is the goal. For example, “Cell phone use sees dramatic decline in 2010,” “U.S. government ends all immigration restrictions,” or “Moore’s Law disproved.” The story then steps through the history of the developments that preceded or followed the headlined event.

- Use characters. Another technique for story development is to identify characters who live in or drive the scenarios, conveying vividness as well as the magnitude and direction of change. Unexpected connections are especially powerful. For example, “Bill Gates named Education Czar,” or “Oprah Winfrey named head of General Motors.”

- Draw on standard plot lines. The best plots are easily recognizable because they are so common in popular fiction. Many involve conflict or competition—“winners and losers,” “good news and bad news,” “David and Goliath”—and are easy to build into full-blown narratives. For example, “Europe, India, and China commit to a common currency, eliminating all trade barriers in an effort to overtake the U.S.”

• **End product.** The result of these creative activities is a set of believable narratives that are simple to understand, yet compelling enough to stimulate new thinking. Experts emphasize that the point of the exercise is not to create four stories, one of which will materialize and turn out to be true. Rather, the goal is heightened sensitivity and awareness, a recognition “that the ‘real’ future will not be any of the four scenarios, but will contain elements of all of the scenarios.” For this reason, most experts recommend that teams avoid assigning probabilities to the stories and not try to determine which is the likeliest future.

**Stage 4. Options consideration.** The next phase involves the generation of implications for presentation to senior management, senior management reviews, and prioritization and selection of options. It is only in this phase that planners should start thinking about their own company and the impact of the scenarios on their own strategic choices.

• **Idea and option generation.** Once scenarios have been developed, the team returns to the initial focal issue and plays it out across each scenario to determine the implications in terms

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of gaps, vulnerabilities, and options. The team packages the scenarios and the list of implications for senior management discussion.

- **Prioritization and selection of implications.** Senior management then reviews the scenarios and discusses their implications. The primary goal is to test alternative strategies and options for “robustness”—their ability to be successful over the full range of possible scenarios. Robust options are preferred because they provide benefits whatever future emerges. Non-robust options are also examined to determine whether there are low-cost, low-risk actions that would allow the company to move quickly once it is clear that a particular scenario is likely to emerge.

- **End products.** This stage results in a list of strategies to implement and actions to consider, as well as a sense of the robustness of different approaches.

**Stage 5: Integration of scenarios into current management processes.** A successful scenario planning exercise is not a one-time event. Instead, it is woven into senior management decision-making in several different ways. In part, this integration occurs through osmosis, as the language of the stories is incorporated into senior management conversations. The accuracy of the scenarios is less important than the types of strategic conversations and discussions they spark. More explicit integration steps include the monitoring of the environment through an early warning system and the use of scenarios to guide strategic choices.

- **Select leading indicators and signposts.** For those actions that will only be effective in certain circumstances, experts recommend developing early warning signals that indicate the likely emergence of one scenario rather than another. These warning signals should be monitored regularly.

- **Use the scenarios to evaluate strategic options.** The scenarios can be used to evaluate the effectiveness of strategic investment decisions, as well as other significant choices. Shell, for example, introduced a rule requiring that all investment proposals presented to top management be economically evaluated against the full set of oil price scenarios to examine their robustness. This rule forced managers “to pull out the scenario book each time they wanted to propose a project.”

- **End products.** This stage results in a list of early warning signals, as well as the continued use of scenarios in the analysis of significant decisions.

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Exhibit 1  An Example of Scenario Planning: Linux Strategy at ABC Company

Stage 1. Orientation.

The Key Focal Issue identified by senior management at ABC company was: “How will Linux affect our company, its customers, and suppliers both here in the United States and around the globe over the next 10 years?”

Stage 2. Exploration.

Driving Forces: Exhibit 1A lists some of the approximately 200 driving forces identified by the team at ABC company exploring the issue.

Exhibit 1A
Key Factors and Environmental Forces

1. Customer push
2. Government mandate
3. Supplier push
4. Windows backlash
5. Copyright laws
6. Terrorist strike against Microsoft
7. Anti-American sentiment
8. Company profitability
9. Budget reductions
10. Vendor adoption
11. Application availability
12. Future of Linus Torvalds
13. Future of Bill Gates
14. Survival of Sun
15. SCO lawsuit

Critical Uncertainties: The team at ABC company reviewed its list of driving forces, divided the factors into several groups, and then ranked them by importance and uncertainty. Exhibit 1B lists the two most critical uncertainties that were identified in the ABC company example.

Exhibit 1B
Critical Uncertainties Ranked by Uncertainty and Importance to ABC company

1. External Push/Acceptance
2. Total Cost of Ownership

Stage 3. Scenarios Creation.

Step 1: The team used the two most critical uncertainties to create the scenario framework, and then built the matrix shown in Exhibit 1C.
Exhibit 1C
Axes for Linux Example

Focal Issue: How might Linux affect the company and its customers, suppliers, etc.?

Step 2: The team then wrote narratives for each of the four scenarios. Exhibit 1D provides a brief synopsis of the narratives developed by the ABC team.

Exhibit 1D
Narratives

Focal Issue: How might Linux affect the company and its customers, suppliers, etc.?

“Niche Market”
Wall Street Journal, December 18, 2009
“Who Stuffed the Penguin?”
We can today derive some lessons for the future as we look back at a platform that was heralded in 2003 as having great promise. Open Source was an open question back then. Unfortunately, the question was answered in large part by SCO prevailing in its lawsuit regarding their Intellectual Property contained within the Linux base code. Despite low costs associated with Linux, lack of confidence in its future and few leaders in the field led many – although not all -- companies to abandon their conversion efforts.

“Penguins Rule!”
Wall Street Journal, December 18, 2009
“Linux Dethrones MS”
In a move that just a few years back was not even a twinkle in Linus Torvald’s eye, Linux finally surpassed Microsoft as the dominant desktop and general-purpose operating system. As major vendors entered the field with new applications, driving down costs, more and more organizations and governments began to adopt the technology. With a plentiful supply of skilled technicians and improved security, Linux became the de facto standard in the industry.

“Why Bother?”
Wall Street Journal, December 18, 2009
“Rise and Fall of the Linux Dynasty”
Linux was officially declared dead today, as Linus Torvalds accepted the position of Chief Technical Officer at Microsoft. In a press release, Linux declared his complete abandonment of the open source version of the operating system that he created. “The hurdles were too high to overcome,” Linus said. Its advantages were never accepted as significant enough to warrant the high costs of conversion and difficulty finding technical support. Torvalds indicated he was working with Microsoft to find the next new technology.

“Penguins for Profit”
Wall Street Journal, December 18, 2009
“Linux Ten Years Hereafter”
After years of litigation, Microsoft and Linux have reached parity with similar product lines and international support. While Microsoft still owns 50% of desktops, Linux and Microsoft share the transactions processing space. Linux has the majority of middleware and mobile solutions. Although widespread litigation, intellectual property issues and limited supply of skilled workers had driven up costs, the technical superiority and elegance of Linux continued to attract new users, especially as vendors delivered new products to fit with both platforms.
Stage 4. Options Consideration.

The team then developed implications and options for the organization. Exhibit 1E presents the implications defined by the ABC team.

Exhibit 1E
Implications and Options

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Stage 5. Integration.

The team then identified early warning signals that could point to possible future directions and the likely emergence of one scenario rather than others. These signals are described in Exhibit 1F.

Exhibit 1F
Early Warning Signals

- SCO wins lawsuit over Linux
- Microsoft changes its pricing model
- Non-US countries demand Linux
- Sun declares bankruptcy

Source: ABC company documents.