

Using Scenario Planning as an Aid in Project Portfolio Management

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Introduction

Within the past few years, more and more companies have begun to realize the value of using portfolio management principles and processes to select, prioritize and manage internal and external projects and the resources to execute those projects. Project portfolio management includes the processes to determine which projects should be started, stopped, or continued and to ensure that the projects selected and prioritized are in alignment with corporate objectives; and once selected, properly allocating resources among the projects within the portfolio to ensure maximum utilization of resources.

It is important to remember that the primary objective of project portfolio management is to identify the proper mix of strategic and tactical projects that will enable an organization to meet or exceed the expectations of the organization's investment strategy. In addition, not only are projects essential to the organization's current health and industry position, but they are also the basis for the organization's future. Historically, companies have not paid much attention to the mix of projects in the investment pipeline. As a result, valuable resources, both human and material, have been wasted on unnecessary or ill-conceived projects. Recently, as conceptually illustrated in Exhibit 1, organizations have begun to focus on methods, processes, and tools to ensure that projects selected and initiated fit within logical groupings, such as business areas, markets, strategic thrusts, etc. However, management must continue to work toward improving the process for making logical decisions regarding the project portfolio's composition.

A good definition of portfolio management is "... a dynamic decision process whereby a business' list of projects is constantly updated and revised. New projects are evaluated, selected, and prioritized; existing projects may be accelerated, killed, or deprioritized; and resources are allocated and reallocated to active projects" (Cooper, Edgett, and Kleinschmidt, 2001). Cooper et al. go on to emphasize that project decisions must be made in accordance with the organization's strategic direction.

Effective project decision-making does not occur by accident. Decision-makers have found that the business environment is which they must operate continues to become increasingly more complex. Gone are the days when management appeared to fully understand the consequences of their decisions and could accurately forecast impact of projects on their organizations and the com-

munity at in general. Success is often dependent upon many factors, both internal factors (such as the skills and knowledge of technical and business resources) and external influences (such as technology trends, demand and price developments, etc.).

In order to be competitive, businesses must be able to look forward toward the future, try to anticipate the impact of the many influencing factors and the outcome or outcomes, and position themselves to take advantage of opportunities as they arise. That is the reason many organizations continually struggle with finding the right project balance or optimal portfolio mix between, considering elements such as, risk versus reward, maintenance versus growth, and short-term versus long-term projects. What manager wouldn't want to be able to look into a crystal ball, see what will happen 10 years, 5 years, 1 year into the future, or even tomorrow for that matter?

As a strategic decision-making tool, scenario planning is a structured process that consists of developing a conceptual scenario of the future based on a well-defined set of assumptions. Thus, by starting with different sets of assumptions, many different future scenarios can be presented, helping companies envision several possible futures they otherwise might not have considered, as well as, helping management become alert to signals that foreshadow major changes in the marketplace, especially with respect to emerging technologies in emerging markets. A scenario-based approach

Exhibit 1. Emerging Approach to Portfolio Management

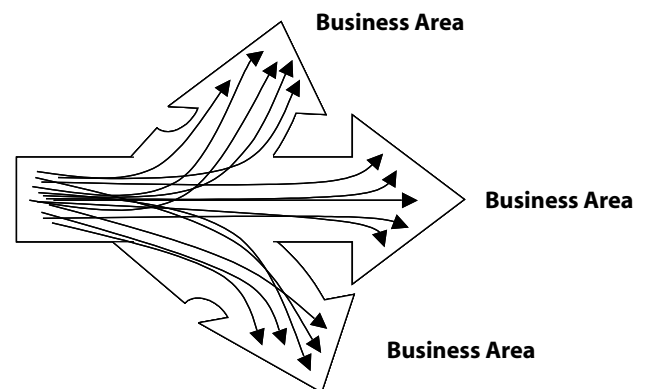
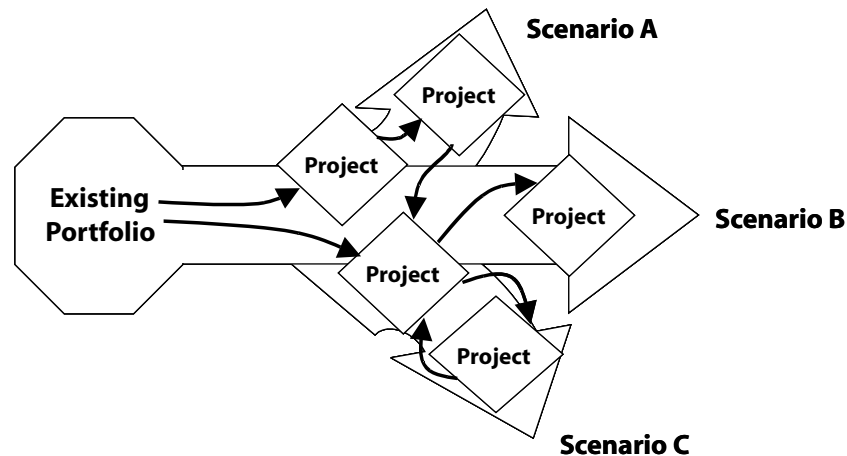


Exhibit 2. Scenario Base Approach



to portfolio management will focus management energies and resources on those projects that will best position the organization to pursue whichever scenario materializes.

It is not the purpose of scenario planning to try to predict the future or provide an accurate picture of tomorrow, but to help make better decisions about the future by looking ahead at several factors that could potentially influence (not determine) the future. The job of the decision-maker is to decide which scenario is most likely to occur and then, by looking at factors that could bring about possible outcomes, make decisions that will enable the organization to better position itself to take advantage of opportunities as they arise and adjust to negative forces acting upon the organization.

Scenario planning takes a critical look and several elements that influence event outcomes, such as:

- Social—demographics, values, morals
- Technological—state of the art, maturity
- Economical—cost of living, debt
- Political—legal, policy, governmental
- Environmental—ecological, ergonomics, policy.

In most cases, the selection and prioritization criteria used in the project portfolio management process fall within these same general element classifications.

The Value of Scenario Planning

Scenarios by themselves do not make the decisions, but they do help create a common vision and help senior management see the potential strategic implications of corporate decisions. By acknowledging and challenging the implicit and widely held beliefs and assumptions about the business enterprise, the industry, and its likely future, a higher degree of corporate learning can be achieved, especially with respect to identifying the key factors that can influence the company's future.

Through the use of a structured and consistently applied scenario planning methodology, a company can incorporate global and local conditions that create change into its strategic planning and analysis. In doing so, the scenarios help management to identify and establish contingency plans to respond logically, purposefully, to en-

vironmental changes in a logical and timely manner, as well as creating a basis for strategic debate.

General Guidelines for Creating a Scenario

As with project portfolio management, scenario planning is both an art and a science. While all scenario-planning processes are basically the same, each organization may have a preferred method or approach for scenario development, as well as, a preferred presentation style, such as narrative story, detailed timeline, or part of a larger discussion in the strategic plan. Regardless of the process used or scenario style, all good scenarios have several characteristics.

1. Scenarios should be interesting and challenging, as well as, plausible and logically consistent with the known facts. Based on logical, but creative factors, scenarios describe a range of possible futures and, as a group, should be mutually exclusive and very comprehensive. In this way, they create a flexible “plan” composed of options that enables the organization to learn and adapt to the changing environment and business conditions.

2. A well structured scenario planning process and the resultant scenarios, must emphasize divergence not convergence (Ries & Trout, 1999.) Convergence, the belief that entire industries are coming together, is an underlying principle throughout business today and many companies are basing their futures on this concept. For example, telephone companies are getting into cable, cable companies are getting into the telephone business, entertainment companies are getting into television and computer companies are getting into communications. The actual fact is that industries don't converge, they divide—a fundamental law of nature. Things break up and divide, they don't combine. In addition, each segment develops its own leader, which is the primary driver behind specialization.

3. A key element in scenario planning is to avoid placing arbitrary limits and constraints on the process. Allow creativity to flow naturally. Remember, if it can be imagined, it could become reality. Because the scenario process may quickly identify limits, boundaries, or parameters, there may be a tendency to focus only on the most significant (i.e., the largest), factors such as, catastrophic acts of nature, a major economic crisis, recession, boom period, etc. However,

throughout the entire scenario planning process, it is important to include both the large or extreme and the small factors in each scenario.

4. Since scenario planning is an attempt to explore the all the possible scenarios for a business or industry, an appropriate number of scenarios should be created. While there may be an inclination to develop only three scenarios—best case, worst case, and most likely. It is probable that more than three scenarios may be required and none of them fitting the typical profile. It is recommended that no more than four scenarios be developed or the process becomes too difficult to manage.

5. As a means of managing the total scenario planning process and the created scenarios, it may be helpful to segregate the scenarios into two major groups—those over which you have some control and those you do not. Within each group, the ranking of each scenario with respect to its long-term impact on the enterprise and its strategic objectives will assist senior management to focus on those scenarios that have a higher probability of occurring.

6. Because scenario planning is a strategic risk management tool, each scenario should represent several potential threats and opportunities, including costs, industry trends, and competitors' market and industry position.

7. It may be necessary to begin the scenario development process with one or two scenarios and incrementally develop a more comprehensive set. To execute the development process correctly, it will take time—at least several days, often several weeks, and sometimes months. The quality of the resulting scenarios is dependent upon the time allotted to the entire process. In addition, all scenarios should be reviewed for change indicators on a regular basis letting the scenario timeline be the guide—perhaps monthly, but no less than quarterly.

Issues and Cautions With Scenarios

No process, no matter how robust, is perfect or error proof. Because scenario planning is looking at future-oriented variables, the probability of error can be pretty high, especially if the scenarios have been developed under less than desirable circumstances. Remember that one major benefit of scenarios is to help the enterprise determine what opportunities (projects) to pursue or continue and which to reject, terminate, or modify. As a result, there are several things decision-makers should consider that could negatively impact the quality of the scenarios.

1. Take great care to avoid building scenarios that reinforce already established positions and perceptions or that just becomes a paperwork exercise that never results in real business decisions. If a scenario does not challenge the “status quo” and initiate debate, then it will ultimately serve little, if any, useful purpose. To prevent this, it is important that the all scenarios be designed and developed using clearly defined criteria and standards.

2. Anytime there is a “mountain-top experience,” a low period can always be expected to follow. The same holds true whenever a significant strategic process has been completed—everyone in the organization is excited, charged up, and ready to implement. If decision-makers are not careful, the learning acquired throughout the planning and development process may quickly be forgotten or ignored. It is incumbent upon senior managers to keep key stake-

holders actively engaged during and after the scenarios have been developed.

3. Because data collection and analysis is critical to scenario development, the scenario planning team must rigorously search for facts, influence factors, and key drivers for each scenario. Without valid and sound data—business, industrial, technical, political, economic, etc.—viable and practical business decision cannot be made. The depth of research required may be too complex or take more time than originally expected tempting management to stop the scenario planning and development process prematurely or select a single path, which more than likely, will be the one perceived to have the highest probability of occurrence. This temptation creates the danger of severely limiting the corporation's ability to adjust to a changing environment.

Scenario Planning Process

Developing realistic and logical scenarios takes time, especially the time of senior management and strategic decision-makers. The more clearly defined the process steps and activities to get to plausible alternative views of the future, the more disciplined management is likely to be in its application. Again, scenario planning is a process, not a discrete one-time event. Since a process is intended to be flexible and adaptable to a variety of situations, there is not a “textbook” answer on how to build scenarios or a standard that can be applied to all companies, in all industries. However, there are some generally accepted steps.

Define the Critical Issue/Decision Facing the Organization

Clearly defining the critical issue, objective, or decision to be made is the crucial starting point for any scenario-planning process. Without clear direction, the entire scenario-planning process may wind up an exercise in futility. This activity may also be one of the most challenging because it forces the enterprise to honestly ask the hard questions about what and where it wants to be, with respect to its competitive position.

In his article titled “Rethinking Business,” Rowan Gibson (1999) states that “In the twenty-first century, the winners will be those who stay ahead of the change curve, constantly redefining their industries, creating new markets, blazing new trails reinventing the company and challenging the status quo.” Gibson identifies six major areas in which businesses must “rethink” their practices in order to be competitive. Most long-term strategic objectives will be around one or more of these areas.

- Principles—Those foundational elements that guide organizations, societies, and personal lives and force businesses to question what they are actually creating and why.
- Competition—The nature of competition is progressively changing, especially in this day of mergers and acquisitions. By exploring new ways to gain the competitive advantage, the intelligent enterprise continually identifies opportunities to overcome, not only, its current but its future competition, as well.
- Control and Complexity—Challenging traditional assumptions and organizational models, businesses must restructure and reorganize for the twenty-first century by focusing on high-performing

Exhibit 3. Scenario Drivers/Impact Factors

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|---|--|--|
| High I m p o r t a n c e Low | Critical (Maturing Population) | Significant (Political Environment) |
| | (Cost of Living) Influential | (Infrastructure Development) Insignificant |
| | Certain | Uncertain |
| | Certainty | |

processes, proactive knowledge-based transformation, and empowered teams.

- **Leadership**—In order to be competitive, corporate and industrial leadership must continually strive to effectively transform itself into a learning organization and capitalize on its knowledge base and intellectual capital. Faced with a changing workforce demographic, management must also prepare for new generation of leaders who are totally computer and technology oriented, completely comfortable in a virtual environment, and not afraid to challenge the status quo.
- **Markets**—Recent history has witnessed significant changes in the nature of and essential relationships between the customers and the corporation, both locally and globally. As social, political, and economic demographics change during the twenty-first century, so will customer attitudes and demands. In addition, changing markets will require business to assess and anticipate how technology will revolutionize the products and services provided.
- **Global Environment**—Unprecedented global changes are occurring in business and society faster than ever before in human history. The shifting nature of worldwide economic competition, the changing role of governments and the rate of scientific and technological discoveries are overwhelming.

Identify Critical Decision Factors/Forces/Drivers That Determine Scenario Outcomes

Using subject matter experts, the scenario-planning team then identifies those factors that will positively or negatively influence the scenario outcomes. Influences may have many characteristics, but can generally be grouped into one or more of the following categories:

- **Internal**—Factors over which the organization has complete control (e.g., policies and infrastructure)
- **External**—Factors outside the influence or control of the organization. (e.g., governmental regulations)
- **Local**—Factors that are regionally focused, but significant (e.g., workforce availability)
- **Global**—Factors that are not regionally or geographically limited (e.g., technology, political, environmental)

- **Inevitable Elements**—Factors that seem certain or inevitable regardless of the scenario that occurs and provides a level of confidence in the outcome (e.g., population growth, changing demographics, accessibility of technology)
- **Critical Uncertainties**—Factors that have no predetermined or clear level of probability. These factors are, in many respects, closely tied to the inevitable elements (e.g., accessibility of technology vs. acceptance or requirement for the technology).

Analyze and Rank Decision Factors by Order of Importance and Uncertainty

All of the influence factors should be ranked in order of importance or impact on the success of the scenario. Each scenario needs to be assessed separately. The primary purpose is to identify the factors that are the most important and the most uncertain. Exhibit 3 illustrates a simple two axes matrix that can be used to plot influence factors. In this example, Importance is plotted against Certainty.

Create Scenarios

Create a narrative for each scenario that describes how the influencing factors, defined in Step 2, might plausibly interact. If desired, an annotated timeline may be used instead of a detailed narrative. The scenario writers' challenge is to identify the situations, or schemes, that best capture and clearly communicate the "possible future." As the scenarios develop and expand around possible events, it is important to avoid trying to include every detail or implication. Focus on the three to four critical and significant ones. Remember, the purpose of scenario planning is to develop different, but credible, scenarios not just to variations of a particular theme or future. Getting it right the first time is not important because the scenarios will most likely have to be revisited and revised several times throughout the development process.

Identify Implications and Interrelationships of Scenarios

Once the scenarios have been developed, the scenario planning team should review the issue or decision defined in Step 1 to evaluate how effectively it is addressed in each scenario. Also, look at the interrelationships of all the scenarios. This analysis may help identify other factors or implications not originally identified.

Select Leading Scenario Indicators/Triggers to Monitor Which Scenario to Implement

The primary purpose of multiple scenarios is to enable the organization to respond to whatever future may occur. Therefore, it is important for senior and executive management to know, as soon as possible, which scenario is actually beginning to unfold. After the scenarios have been carefully and properly developed, a few critical indicators should be identified and selected to be regularly tracked as "triggers" that a specific scenario is occurring.

Implement Strategic Plans

As scenarios are being monitored and the future begins to become clearer, the enterprise can then begin to identify and execute projects and other business solutions in accordance the established and approved strategic plan.

Summary

To be successful in an uncertain world, managers must question their assumptions about the way the world operates, and do what they can to see the world more clearly. The purpose of scenario planning forces managers to change their view of reality—to align it more closely with reality as it is and as it is going to be. The end result, however, is not an accurate picture of tomorrow, but better decisions about the future.

Remember, scenario planning is not a crystal ball, but used properly it can greatly aid the organization's project selection and prioritization process. Scenarios cause an organization to look beyond the obvious, beyond the "normal way of doing business," and to think "outside the box." Scenario planning should do for project portfolio management what a good project charter does for a project—establishes the overall vision and mission, sets the direction, and aids in making decisions that affect the overall outcome of the effort. Scenario planning works as a guide to help organizations focus their projects, thus their resources, time, and money, on the projects that will be the most likely to provide the competitive advantage.

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