Scenario planning enables leaders to look at the longer-term future, and provides a means for challenging stagnant thinking in the organization.

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Scenario planning is a tool used by leaders to discover new strategic options for the future and to gain a deeper level of foresight than is typical in most strategic planning efforts. While the approach has a long history, it burst into the news in 1973. In that year a war broke out in the Middle East that became known as the Yom Kippur War. What made that conflict infamous was the oil embargo of 1973-74 that was used as a means of attempting to influence the outcome of that conflict. People old enough to remember will recall the lines that formed at gas stations in America when gasoline rationing was eventually instituted as a way to cope with the embargo.

A second, less well-known, but still famous outcome was that one global oil company was well positioned to cope with the embargo. It was the Royal Dutch Shell Company, and they were prepared because they had been engaged in something called scenario planning. The concept of anticipating alternative scenarios and imagining strategic responses in each contingency was a technique long known to the military, but at the time it was little used in the business world. The success of Shell captured the attention of corporate planners. However the technique did not gain widespread favor as a planning tool until the 1990’s and the beginning of the Internet boom and the rapid change that came with it.

Shells’s views on scenario planning
http://www.shell.com/home/content/future_energy/

By then it was becoming apparent that the world was changing quickly, and often in unpredictable ways. Planning for a fixed and slowly changing world made no more sense. For an increasing number of large companies, government agencies, and even smaller companies scenario planning has been adopted as an important step in preparing the organization for the future in a way that enables the organization to be ADAPTIVE and RESILIENT.

The purpose of scenario planning is to anticipate probable and possible futures and imagine alternate strategic responses to these futures. In this way business leaders and managers can develop a kind of tool kit of alternative strategies to call upon when a particular future begins to emerge. They can be better prepared ahead of time.

Scenarios are best thought of as plausible stories that describe how the world may develop, given certain future events, trends, and developments. Suppose for example that within the next five years a breakthrough occurs in the production of solar energy cells, so that the cells are four times as efficient as today in converting sunlight into electricity and cost only a fourth of what they cost in 2012, thus making them competitive with all other forms of electricity generation and competitive with standard roofing material. Suppose too that the biggest players in the electricity generation industry make a major move to invest in solar roofing, and that the federal government and most state governments enact incentives for a fast adoption rate of solar energy. In such a world, what would be the impact on your current and future strategies? Now, in an alternate future, suppose that the same technological breakthroughs occur, but that the major industry players in electricity generation and in building materials, along with federal and state governments put barriers in place that slow the adoption of solar energy, in favor of traditional technologies. Again, in this alternate world, what would be the impact on your current and future strategies?

Each of these alternate futures is plausible, that is, one can imagine each future to be one that might actually happen. The goal of scenario planning is to create several such future stories, and then explore your company strategies in each scenario. When you do this you discover that there are certain strategies that you will intend to use in every plausible future—these are CORE STRATEGIES for your business. But there are also strategies that you would employ only if one particular future comes to pass, and by having played the game of scenario planning, you are ready to take that strategy off the shelf, refine it and enact it. From a competitive standpoint, if your competitors are not doing this kind of planning, you will be prepared, when they are not, just as was true for Shell Oil in 1973.
There are two basic models for whom to involve in scenario planning.

1. One method is to appoint a small project team. This team might be as small as three people, as large as a dozen. They might be people who usually work on strategic planning for the company, or people drawn from management ranks, or a combination of the two. They could be tasked with producing scenarios quickly, by meeting in one or two retreat settings, and then producing the final result. Or, they might be assigned a period of time ranging from three months to a year or more to meet regularly and produce the scenarios through more in-depth research and analysis. Such a team will enlist internal research help and external consultants, and they may also plan input sessions with larger groups of stakeholders both inside and outside the company. Such sessions might involve brainstorming driving forces of change, or sharing some of the scenario work in progress and asking for ideas and suggestions.

2. A second method of involvement, appropriate to smaller companies, or to situations where a management team does the planning, is to assign senior management to produce the scenarios. This has the advantage of immersing decision makers in the analysis, but obviously has the disadvantage of a significant time commitment from these people. When a management team does the scenario development, the project is more likely to organized as a retreat or a concentrated series of workshops. These are best done with expert facilitation help, acquired either internally or externally. As is the case with a scenario planning project team, at some point a small group of people will need to be assigned the task of producing the final, refined versions of the scenarios, and preparing the communication materials.
Decide on a time frame for your scenarios. How far ahead do you want to look?

Most of the time when companies do planning they are looking about one to three years ahead. Scenario planning is a good way to look further ahead than we usually do. A time frame of at least five years is advisable, and ten years is even better. When you look that far ahead, you have the chance to really develop some foresight, and be prepared for things that may surprise others. It is valuable to note that the purpose of your scenario planning is not to divine which scenario is the most likely to emerge. We are not trying to make a perfect prediction of the future. Instead, our goal is to develop three or four different futures, each of which might happen. This frees us from the requirement that we know exactly what is going to happen in the future, and so we can play with a longer period of time. Our goal is future stories that make sense. The Shell Company, by the way, looks 40 to 50 years ahead in their scenarios.

Research and develop a list of Driving Forces of change.

This step is the research part of the process. What is changing out there in your world? What are the events that will take place in the coming decade, what are the key trends and their direction, what are the developments that may occur? This step is often a process to itself, called an Environmental Scan. The driving forces are typically researched within categories such as demographics, economics, science and technology, societal attitudes and values, environmental issues, industry and competitor trends and developments, government policy and regulation, and other relevant domains. You will have to decide on the depth to which you wish to go in this research. This can range from convening a team in a one-time retreat to share their knowledge and to make a list of driving forces, all the way to a many-month process in which a team, perhaps aided by hired consultation, develops a detailed analysis of the driving forces of importance to your company.
Explore and analyze the driving forces to decide which of them are quite likely to occur—the “pre-determined” forces.

This is a process in which the scenario team works together to analyze the driving forces and to choose from among them the elements that will go into the scenarios. First, certain of the driving forces are quite easy to predict or anticipate. For example, if you are looking ten years ahead, a certain percentage of building stock is likely to be redeveloped, remodeled or replaced. The population in your market area will be older on average than today—unless your market is primarily in developing economies with very young populations. The development of new North American sources of natural gas means that the cost of heating buildings may stay pretty stable for a few years. These are predictable events and trends.

Analyze the driving forces to decide which of them are both very important to the future of your business, and most uncertain in direction or outcome—the “critical uncertainties.”

Continuing the work begun in step 3, the scenario team will assess which driving forces are important, but could happen or not, or could go in one direction or another. For example, in 2009 the international Journal of IT in Construction convened a group of construction experts from several countries to develop scenarios for the future of construction and related information technology out to the year 2030. This project selected two critical uncertainties: the degree of intervention in the market place, from a market driven economy to an interventionist economy, and whether environment and resource management would be integrated or fragmented. In the world of sustainable construction, a critical uncertainty might be whether environmental and sustainability requirements remain fragmented with fluctuating political attention, or whether such requirements become integrated and the standard approach to business.

Having identified the critical uncertainties, explore various logical combinations of them, and assign unique combinations of uncertainties for scenario development.

Typically two or three uncertainties are placed into a matrix and then differing logical combinations are created. For example, using the uncertainties from the Journal of IT in Construction, in one scenario the uncertainties of a market economy combined with fragmented approaches to resource and environmental management led to a scenario they called “Business as Usual.” In another of their four scenarios an interventionist economy combined with integrated resource and environmental management to create a quite a different yet still plausible scenario they called “Cuddly Dictatorship.” You will be looking to create three or at most four scenarios, so often just two critical uncertainties are used in various combinations.
Build or write the alternate scenarios. Combine the “pre-determined” forces and the “critical uncertainties” into a story that makes sense over the time frame that you have chosen.

This step is really kind of like writing a short story. Within each scenario you decide what happens first, and as a result of that, what happens next, and then what three things occur next, and so on. The task is to build the alternative future scenarios, either with scenario teams working on them over time, or in one or more workshop settings. Begin each alternative scenario with the same set of “Pre-determined” driving forces and two or more unique “critical uncertainties,” as well as the “logic” that goes with them.

Discuss the pre-determined forces that go into the scenario along with the uncertainties and looking for possible interactions. As the discussion continues, a “PLOT” will be developed describing a possible future for the target enterprise.

Scenario plots may develop along many lines. For example, a story might be organized as one of challenge and response. As the scenario proceeds, challenges come up, and responses are imagined. Or, the scenario might be a story of evolution, a plot in which things develop gradually over time. Such a story is told as if you are in a helicopter flying over the whole story from beginning to end, looking at things as they develop. Things will grow, die, and re-grow. There will be occasional bursts of growth or sudden change that lead in new directions. Finally, another possible plot technique is a story of revolution. A major breakthrough or event happens and leads to a major upheaval in society, in the global economy, or in an industry.

Two good tools to help create your scenarios are timelines and “futures wheels.”

To create a timeline literally take a very long sheet of paper, like newsprint, and place your time line on it, from today and then year-by-year out to 2023, if you are doing a ten-year view. You can do this on a computer of course, but we find using the physical tools in a nice meeting room helps with seeing the whole picture. Eventually what you create can be transferred to a digital file. Taking digital photos is one way to keep track of your progress. As you develop and dream up what happens in the story, you can place the story event or development on the timeline. Another good specific technique is to use post-it notes for your story elements and to place them on the timeline as your work. This allows you to move the story ideas around. (This is much like a film producer or writer will use a “story board” to plot out their film.)
Creating detail in your stories and discovering what might lead to what, can be aided by the Futures Wheel tool. The Futures Wheel helps you to see multiple levels of consequences.

It works like this. You place in the center of a circle the development you wish to analyze. For example, it could be a technical development like inexpensive thin film solar roofing material. Or, it could be a social trend, like the aging of a population in a particular region.

For example, a primary consequence of inexpensive solar roofing would be to displace traditional roofing. A primary consequence of an older population would be to increase need for taking care of older people.

It is the next analysis step that is the key utility of the Futures Wheel. Rather than ending the analysis with these primary consequences, each of the primary consequences is looked at in turn. A second ring or circles is drawn around the first ring. You ask, for the first primary consequence, what is a consequence of that? And so on. Lines are drawn connecting these “second-order consequences” to the relevant primary consequence. For example, a second-order consequence of displacing traditional roofing would be need for training of roofing installers. Another second-order consequence would be re-tooling of manufacturing. A second-order consequence of an increased need for taking care of older people would be developing a way to do that, increasing pressure on families or social institutions.

The first analysis step is to ask, “What will be primary consequences of this development?” A ring of circles is drawn around the center circle, with lines connecting to the center circle. This first outer ring captures three to five of the most important immediate consequences.
You will do this for each of your three or four scenarios. Obviously this can be a time consuming project, and like with the driving forces research you will have to decide the proper level of commitment. A team can do this in a retreat, or several teams could take many weeks developing their stories. The quality will generally improve with more time spent.

One can do further rounds of analysis, looking for third-order and then fourth-order consequences, depending on how far you want to go. Thus, the Futures Wheel can help you to see possible futures, and to flesh out the content of your alternate scenarios.
**7 Explore and develop the key strategic implications for your company in each future scenario.**

In this step your scenario team or teams go back into the scenarios and ask how the company has been dealing with the world strategically. Ideas for company responses will have been occurring to the scenario developers all along, and keeping a running list of ideas is a good practice. It generally works best to wait to plug in the company responses until the basic outline of the external world in each given scenario is in place.

Then in each story one can ask...

- Where do we invest and when?
- What markets do we get out of and why?
- Whether to react in a way that tries to alter the future story as it is happening?
- Is your leverage great enough or do you combine with others to intervene?
- What technologies must we adopt
- What new learning must we take on?

The focus is on identifying preferred directions for the company within each scenario.

Your company strategic reactions can become a part of the story, or they may be appended to the story along the timeline, depending on which approach makes them most sense to you. In some cases scenarios may be developed for public communication and you may not want your company strategy to be exposed on the public version of the scenario.

**8 Identify triggers or indicators that will alert you that a particular scenario is beginning to come true.**

This step is perhaps the most challenging, yet most valuable. Can you, for a given scenario, identify ahead of time an indicator that you could watch for systematically that would indicate whether a scenario is emerging? An indictor might be a financial signal—commodity prices going in a particular direction for some period of time. It might be a policy indictor, a scientific breakthrough announcement, a new market entrant, a social trend that has become the norm. Identifying what these might be, and setting up a process to watch for them can make a significant difference in whether your scenario work pays off.

**9 Communicate the scenarios to key stakeholders.**

The final step involves using the scenarios. A variety of approaches can be taken. Which ever you use, success at this step is vital, or otherwise only those who worked on the project will know the scenario development work. First, identify the key stakeholders who should know about and will use the scenarios. This may be senior management, those involved in making actual strategic decisions for the company. In a smaller company, or in a company with a culture of involvement, the audience might literally be everyone in the company. Sharing the scenarios with everyone might be especially called for if one goal of the scenario planning is to change the mindset in the company, to orient the company to be more future oriented and flexible.

The means of communication ought to use all the tools that are available to us. These include presentations, printed materials, webcasts, visual presentations on the web, video discussions, and so on. The best scenario stories often include visual material—including artist renderings of what the future looks like, graphics, photos, and clever layout.
Engaging in scenario planning means making four commitments

1. Commit to explore a longer-term future than you usually do in strategic planning.

2. Commit to spending financial resources and time on the project. This will take more time than your regular round of planning. Money will need to be devoted to meetings and retreats, and quite likely to some outside consultant assistance.

3. Commit to being open to new ways of thinking.

4. Commit to *using*, not just producing the scenarios. This is, surprisingly, the hardest commitment to make. Once the work has been done to produce the scenarios, the work is only worth it if decision makers, and the whole company, actually use the insights discovered.

At a practical level, the time to do scenario planning is at the beginning of your strategic planning cycle. Target that moment and put a team in place to work on scenarios. It is advisable to provide this team with some training and education ahead of time.
BEST PRACTICES

- Engaging the right people. You want to stimulate creative and unconventional thinking. And you want decision makers to pay attention to the outcomes. Thinking many years ahead is not a routine activity, and some people will be better at it than others. In creating the scenario project team you want to look for creative thinkers along with influencers within the company.

- Involving stakeholders inside and outside the company. In the research phase of developing scenarios engaging a wide range of stakeholders—involving them in brainstorm sessions, conducting interviews, asking for research data—will improve the quality of thinking, and increase the likelihood of later impact.

- Choosing the right time. If the organization is in a panic mode about current market conditions or company performance, people will not be in a mood to look several years ahead. However, when the organization feels a sense of urgency about understanding a chaotic and changing environment can be the best time to begin a scenario planning effort. Urgency, but not panic.

- Using the scenarios to shape actual organization strategy. This depends, first, on a prior commitment at the top of the company, and second on an effective communication plan for the scenario results. One of the best ways to use the results is to highlight the core strategies that seem to apply across most or all scenarios. The maxim to follow is that the scenarios can reveal not what the company will be doing ten years from now, but what you should be doing in the coming year or two to be best prepared for any possible future. The analysis is focused on the longer term. The action planning is focused on the near term.

PITFALLS TO AVOID

Scenario planning is prone to some of the same pitfalls as most strategic planning.

- Tendency to believe what we want to believe. While the whole exercise of building scenarios is designed to combat this, it is still hard to let go of our pre-existing beliefs.

- Tyranny of past and present trends. We have a natural tendency to assume that what has happened, or is happening now, will probably continue. But sometimes things change suddenly and what has been the norm disappears quite quickly. A good scenario will incorporate stable trends, but allow for big changes too.

- Not creating a powerful enough coalition that backs the scenario-planning project and intends to use the results. When this happens, no matter how good the work is no one pays attention to the results. You need a core team of committed people, and backing from senior leadership.

- Scenario planning can increase uncertainty. This runs counter to what is hoped for in any kind of planning, which is typically to make the future more clear and controlled. Creating several scenarios increases the range of possibilities we see in the future, as well as the options for strategies. We have to complexify our thinking to really use scenario planning to greatest advantage.
This guide to scenario planning has described the most typical approach to scenario development and use. There is one more step you may want to consider in the appropriate situation. That is to develop one final, preferred scenario.

In the scenario development exercise you will have produced three or four plausible future histories, and you will have considered how the company will respond strategically within each of the scenarios. What you will certainly notice is that there are a few strategic responses which are common across all the scenarios. These are elements of the preferred future of the company that you hope to pursue in any given future world!

Now the scenario teams can come together and ask, given this set of common strategies, what is the preferred scenario we want to create. In a final scenario writing activity, you can describe the preferred future world and the company actions that go into creating it. Like the scenarios created previously, the story can be described over time, imagining the company strategies as they play out on a timeline. You’ll be integrating the same set of future trends, but making a choice on how you think the uncertainties will play out.

Such a preferred scenario can be used in strategic planning, along with the plausible scenarios, and is of particular use if you intend to develop a company vision.
Here are three brief case studies to illustrate the varying levels of effort and complexity that go into a scenario planning project.

**FHWA Real Estate Division: An example of a focused, quick process**

This is an organization tasked with managing federally owned real estate that is associated with current and future highways. Obviously such real estate is often prime land for business development. In 2006 the Division wished to explore the future, in a project they called “Future Needs of Public Sector Real Estate.” The purpose was defined as enlisting the aid of internal and external stakeholders to clarify for the Division what key strategies they should focus on, given different possible future scenarios. A consulting team was hired to design the process and write the final report. The process decided upon was a single two-day retreat of stakeholders, preceded by research and preparation by staff and consultants, and followed by preparation of the final report by the consultants working with staff. The stakeholders invited included officials from several federal agencies, state transportation officials, private real estate developers and business representatives.

In the two-day workshop, a half day was spent in roundtable discussion of driving forces of change, a half day to draft scenarios using a timeline, a half day to refine the scenarios and ask what the preferred strategies for the Division would be in each scenario, and a final half day identifying the strategic issues that were common across the scenarios. Following the model suggested in this guidebook closely, the workshop participants chose “pre-determined” driving forces such as insufficient levels of public sector funding, deteriorating and obsolete public infrastructure and increasing number of severe weather and environmental events. They created four alternate scenarios with clever names such as “To hell and back” or “Sea change” by using unique combinations of critical uncertainties like national disasters, legal limits on eminent domain, global economic conditions, and legislative openness to public private partnerships.

After the scenarios were outlined, refined, and reported, all the participants worked to identify strategic issues and priorities for the Division. These included issues like creating an independent lead agency, engaging in policy planning for employing technology, improving emergency planning and risk management, and formalizing processes for public private partnerships. The scenario planning was judged a success in challenging and stretching current thinking in the Division, as well as in informing stakeholders of future issues.
Edison Electric Institute:
An example of a four month stakeholder process

EEI is an industry association focused on the generation and distribution of electricity. In the summer of 2010 the Institute desired to both learn and inform stakeholders about the strategic issues for the industry that will emerge in the building of a “smart grid.” The ultimate purpose was to improve Institute strategies for supporting a smart grid, both legislatively and in the industry. The institute assigned a scenario development manager, and a lead working group of about ten people consisting of staff, external stakeholders, and two project consultants. One of the consultants was tasked with designing and leading the process, while the other was assigned to write and edit materials including the final report.

The process used was for the working group to develop a forecast of driving forces, to select both pre-determined trends and critical uncertainties, and to provide a base outline of alternate scenarios along with briefing materials. This material was then used in two one-day scenario building workshops of stakeholders. Participants in each workshop consisted of stakeholders including electric industry executives, and environmental, consumer, business, regulatory and government representatives. One important feature of this process was that in the scenario development workshops the participants differed but each group followed the same process from scratch. In this way the scenario working group had unique results from each workshop.

The workshop process was to listen to presentations of driving forces and the basic scenario outlines, and then to work in teams to fully develop each scenario including the story, industry responses, and trigger events that would indicate the scenario is emerging. The working group then used the input from these stakeholder sessions to refine the scenarios, and the writer and editor developed a finished product.

Four scenarios out to the year 2020 resulted that have been used internally by the Institute to develop strategy, to communicate to its members, and to educate the Institute board of directors. The scenarios include an “Existing Path” scenario where the industry and public policy muddles along and smart grid deployment slows, and a “Market Pull” scenario where a policy vacuum leads to a wild west “behind the meter” and utilities struggle to keep up. Two additional scenarios include a “Policy Push” scenario where federal policy driven by the Department of Defense, combines with market expansion in electric vehicles and national concerns to compete with China combine to encourage a smart grid, and finally a scenario called “Rapid Deployment” where economic boom times return, there are aggressive mandates, a flood of new businesses come into the industry, “smart” is everywhere, and it is hard to keep up.
Shell Oil:
An example of a deep process managed by a dedicated team

We have referred to Shell Oil and its scenario process earlier in this guidebook. They have been regularly producing, updating, and using scenarios for nearly forty years now. Their process is instructive in several ways.

First, they produce scenarios with a very-long term view, usually 30 years or more. Differing versions of their scenarios are produced, one set intended for internal use by Shell executives to test Shell strategies, and a second, public version to help educate company stakeholders and the wider audience (in eight languages). These are made available on the Company website, along with descriptions of how the scenarios are produced. The scenarios are updated with new versions every few years. There are two current scenarios that go out the year 2050, and were finished in 2008. This year, in 2011, the Company produced a supplemental report entitled “Signals and Signposts.” The two scenarios explore a world in which we stumble our way into the energy future in a scenario called “Scramble” and one in which we proactively create the energy future in a scenario called “Blueprints.” Shell summarizes the message of the “Energy Scenarios to 2050”: *Never before has humanity faced such a challenging outlook for energy and the planet. This can be summed up in five words: “more energy, less carbon dioxide.”*

Second, the Shell process is unique for being both concentrated and deep. Project management is done by the Global Business Environment Unit. They engage participants both from the various Shell businesses and from outside Shell in a variety of assigned research, interviews, and workshops. When it is time to produce new scenarios six months or more is devoted to research, several months to drafting scenarios and testing them internally and with stakeholders, and then several more months producing the final result.

Finally, Shell recommends a quite specific organization for a scenario effort. This includes a scenario director responsible for success of the project and a core team with a manager to deal with the incoming research and to synthesize results. The core team ideally includes decision makers who will use the scenarios, though often senior decision makers do not have the time and interact with the scenarios as they near completion by staff. Shell recommends a dedicated room where workshops can take place, and material can be posted on walls and maintained. The core team is further organized into research topic leaders and specialists, along with an editor who is responsible for the final product. All are supported by staff who keep schedules, organize venues, provide graphics support, and so on. Shell has offered quite detailed descriptions of their process, in guides on the Web: [http://www-static.shell.com/static/public/downloads/brochures/corporate_pkg/scenarios/explorers_guide.pdf](http://www-static.shell.com/static/public/downloads/brochures/corporate_pkg/scenarios/explorers_guide.pdf)

Case Studies Summary In these three case study examples we see a variety of approaches, from a simple, single workshop event to do basic scenario development, all the way to a full-blown and on-going company effort to use scenarios over many years. The approach you chose will depend on the size and complexity of your company, the level of resources you are willing and able to commit, and the extent of participation by stakeholders that you desire.
The Shell Scenario process and their public versions of it provide the gold standard. 
http://www.shell.com/home/content/future_energy/

Glen Hiemstra’s book, Turning the Future Into Revenue: What Businesses and Individuals Need to Know to Shape Their Futures, John Wiley & Sons, 2006, has a “how to” section on scenario planning.

Wikipedia has a very good entry on scenario planning, with many links to resources and sample scenarios. 
http://en.wikipedia.org/wiki/Scenario_planning


ScenarioThinking.org is a great source for information about and examples of scenarios. Most of the scenarios are developed as business school projects, but provide interesting models to check out. 
http://scenariothinking.org/wiki/index.php/Main_Page

Gill Ringland, Scenario Planning in Business, John Wiley & Sons, 2002, is a comprehensive look at scenario planning, from a global perspective.

The Journal of Information Technology in Construction shared their scenario research and the construction scenarios they developed in 2009 on the web in this PDF: http://www.itcon.org/data/works/att/2009_35.content.01323.pdf

This guidebook for scenario planning was prepared by Glen Hiemstra, Founder of Futurist.com, for Saint Gobain in 2012. Copyright is retained by the author. Glen can be contacted at www.futurist.com.