

## Scenario-Based Planning: Managing By Foresight

In the early 1980s, Royal Dutch/Shell's planning group uncovered some startling statistics: one-third of the companies listed in the Fortune 500 in 1970 had vanished by 1983, and the average lifespan of most companies was only forty to fifty years—roughly half that of a human being.

"A lot of corporate deaths are infant mortality," notes Arie de Geus, former director of planning at Shell. "Many companies fail to develop succession rules, remaining too dependent on certain individuals. But long-established companies also die or weaken to the point that they become easy prey for predators." What causes their demise, and how can such an outcome be prevented?

De Geus believes a company's survival depends on its ability to detect and adapt to critical changes in its environment. "Managing internal change by foresight, rather than by crisis, is only possible if the change in the environment is seen on time," he

insists. At Shell, 'managing by foresight' takes the form of scenario-based planning, in which managers chart out their responses to alternative future scenarios. This strategy served Shell well in the turbulent oil industry of the 1970s and 1980s, and de Geus believes it has widespread applicability, "since the environment in which all companies work has shown oscillations of increasing frequency and amplitude since the 1970s."

### Remembering the Future

The reasoning behind scenario planning, explains de Geus, is that by planning out alternative strategies, companies can better prepare for and adapt to changes in its environment. Simply put, "We will not perceive a signal from the outside world unless it is relevant to a future which we have already worked out."

This philosophy goes back to the work of Swedish neurobiologist David Ingvar. According to Ingvar, the human brain is constantly generating multiple scenarios of the future and then storing these alternatives. In effect, we are continually creating and saving memories of the future. By engaging in this activity 24 hours a

day, we mentally prepare for future possibilities. These

"memories of the future" protect the brain from information overload by directing us toward signals that are relevant to a future that we have already "seen" in our

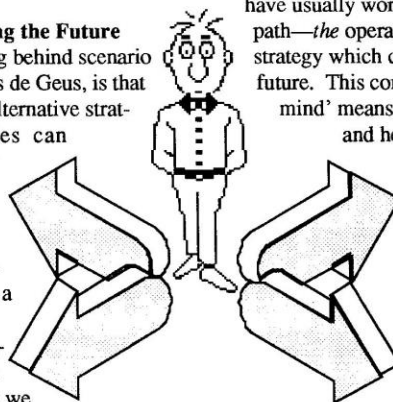
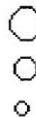
mind's eye.

According to Ingvar's work, being single-minded is *not* a compliment—in individuals or in companies. Says de Geus, "Most companies have usually worked out only one path—the operating plan or the strategy which covers only the near future. This corporate 'one-track mind' means the company sees

and hears very few possibilities for change." It also increases the possibility of missing important signals that appear tangential or unrelated to the operating plan.

### Signals of Change

Why don't many companies see the signals of change? "In the euphoria of expansion, changes in the environment are often not seen or are not seen for what they are," explains de Geus. "The newspapers are full of examples of companies which, in the face of



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change, continue to pursue their previously successful expansion policies, more or less adapted to what they see as a temporary aberration.”

When Shell reviewed the past scenarios generated by its planning group, they discovered that they had actually predicted many major shifts in the environment prior to their occurrence. In 1972, for example, Shell's planners presented scenarios of possible disruptions in oil supply and demand, but the managers greeted them with skepticism.

“How can a group who is offered such insights on a platter not be able to see its value?” wondered de Geus and the other members of Group Planning. They came to the conclusion that if their scenarios did not match managers' mental models—their “memories of the future”—the managers wouldn't take them seriously.

This realization led to a fundamental change in the way Group Planning saw its role. As Pierre Wack, former senior planner at Shell, described it, “We no longer saw our task as producing a documented view of the future business environment five or ten years ahead. Our real target was the microcosms [mental models] of our decision makers: unless we influenced the mental image, the picture of reality held by critical decision makers, our scenarios would be like water on a stone.”

## Planning as Learning

In 1985, Shell used scenario planning to help its managers prepare for another possible disruption in the industry. Group Planning brought together the top managers and presented them with the following scenario: “it's April 1986 and the price of oil has fallen from \$30 at the end of 1985 to \$16 today. What do you think your government will do? What do you think your competition will do? And what, if anything, will you do?” The price of oil at the time of the

meeting was \$28 and rising, de Geus recalls, and “\$16 was the end of the world to oil people.” But the object of the exercise was not to debate if the scenario *would* happen, only what Shell would do if it did.

As a result of those discussions, Shell assigned 150 engineers to work on designing a cheaper oil platform that would help the company benefit if oil prices dropped. By April of 1986, oil prices had fallen—to \$10 a barrel. While other companies announced

write the conclusions down. The result is that people find more options—more time paths into the future.”

## Corporate Survivors

Some time after its “Fortune 500” comparison, Shell planners conducted another study. This time they searched for companies that would inspire Shell—companies that were older (Shell itself was 100), were relatively as important in their industries, had experienced some fundamental environ-

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ment changes (like the oil shocks of the 70's), and had survived with their corporate identity intact. They came up with a handful—companies like DuPont, the Suez Canal company, and the Hudson Bay company. Their ages varied from 200 to 700 years, many times the average life expectancy of a person.

Because the managers had already developed action plans for surviving a steep price drop, they were able to quickly adapt when that possibility became a reality.

## Transitional Objects

Play is a key element of the scenario planning process at Shell. “In a corporate setting, just explaining your mental model to someone else will not have a big impact on them,” de Geus explains. “You need to provide a transitional object that the other person can play with.” The introduction of computer models and management “flight simulators” into the corporate boardrooms has been a significant advancement in this area. Using system dynamics models in the planning process, for example, has shortened the learning cycle. “Learnings in these play sessions are usually so graphic that no one needs to

mental changes (like the oil shocks of the 70's), and had survived with their corporate identity intact. They came up with a handful—companies like DuPont, the Suez Canal company, and the Hudson Bay company. Their ages varied from 200 to 700 years, many times the average life expectancy of a person.

“Some of the older companies like the Swedish firm Stora have had their ups and downs as a result of changes in the world over its 700 years of existence,” notes de Geus, “but most of the time they had picked up the signals of change and had acted upon them before it developed into a crisis. They show that it is possible to see the signals of change earlier than most companies do—and that, when it comes to corporate life expectancies, there is considerable room for improvement.”



*Further reading: Arie de Geus, “Planning as Learning,” Harvard Business Review, March/April 1988 and “Stockton Lecture,” London Business School, May 3, 1990. Pierre Wack, “Scenarios: Shooting the Rapids,” Harvard Business Review, November/December 1985 and “Scenarios: Uncharted Waters Ahead,” Harvard Business Review, September/October 1985.*