THE FUTURE IS MULTIPLE.

By Arie de Geus

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The living Company: Surviving in a Turbulent Business Environment

Language creates reality. The language that we use when we speak to one another in our companies, creates the reality that we face inside those companies. If we talk about the company as an asset-based, profit-producing machine, we create a different reality then when we see a company as a living thing, a community of people. Talking about companies in the language of a human community may make us see the corporate reality in a way that can help solve problems resulting from our previous views.

Let's try this out on a subject that is of vital importance in any company, however defined: how to handle the future in our decision-making processes? The future is the large, uncertain element in every decision that we take. How would this subject be expressed in the language of a living community of people?

Living companies share the two primary objectives of any living being: to survive and to develop. The pursuit of these two prime objectives means that these companies are <u>in</u> business, not in <u>a</u> business. If changes in the world around them make that necessary, they will drop their core business and the assets that make up that core business. They can do so, because living companies constantly create new potential and new core competencies. This allows them to make better use than their competitors of the challenges posed by the world in which they live.

Changing to Survive and Thrive

In 1983, at the Shell Group, we commissioned a study on companies older than ours that were still major players in their field. We selected forty sizeable, long-lived companies and tried to identify those particular characteristics which explained why they were efficient survivors. One finding was that a number of them changed radically over the decades.

- Du Pont de Nemours, for example, began 200 years ago by manufacturing gunpowder, then changed to dynamite, next to become the major shareholder of General Motors in the

1930s. They positioned themselves well around the Second World War by entering into the chemicals sector, and now the corporation is a specialist in fine chemicals.

• Mitsubishi began operations in 1870 as a shipping company and has been through major transformations into (coal) mining, shipbuilding and banking.

• Stora began seven hundred years ago as a mining company in Sweden, then went into forestry, hydro-electricity and iron smelting in the 19th century to become a paper pulp company, evolving into a chemical company in the 20th century.

So, a company can be very different at fifty years than it is at two hundred years, and it will likely change even more before it is four hundred years old. There is no reason for a company not to live much longer than is now generally the case - as long as it knows how to change. But how to choose the paths and strategies of these changes?

The problem is, there is no map of the future. Planning and strategy consist of accommodating the organisation to the eventualities of an unknown landscape. To implement plans, managers make tactical decisions--that is, they decide to place a foot here rather than there.

"Life is a path that you beat while you walk it." It is not until you turn around that you see the path. In front of you lies unknown territory along which you stumble step by step in absolute uncertainty, wrote Antonio Machado, the Spanish poet. The real strategy of a viable organisation is an emerging one. The company beats its path by scanning the lie of the land, putting one foot in front of the other, scanning its world again and deciding where to put its foot next.

Dealing with the Future

In taking those decisions, a company, like every individual person must both accommodate and take into account the future as they go through the metamorphoses of their physical and mental development. Change means that companies evolve over time. The traditional way for companies to deal with the future is by making predictions in an effort to reduce the uncertainty. The standard practice in doing so is called "planning". As developed during the 1930's, it consists of making a numerical guess of the company's Profit & Loss account and Balance sheet for the next one or two years. It is an introverted look that allows very little to be seen of the really important elements of the future, namely, how is the world around us going to develop and change? Therefore, in the traditional approach to planning, the most fundamental and most pertinent question with regard to the future remains unanswered: What will happen around us during the next phase of development of the institution?

Management By Objective

This is not much different in the slightly more sophisticated way of planning that was developed in the 1960's under the name of "management by objectives." It is still an introverted prediction of the future, but done from the bottom-up, rather than from the top-down and complemented by some sort of "internal contract" to make people think twice before they put their predicted figures on paper.

In 1967, Shell launched a system of management by objectives which was baptised the UPM, the Unified Planning Machinery. The UPM was the supersystem which sought to make redundant all planning systems. A manual as thick as the Bible and laid out by menu described how, within the entire group, in more than one hundred countries and three hundred subsidiaries across the globe, accountants produced numbers from top to bottom and from bottom to top. It described how they added them and subtracted them into a budget and it measured the efficiency of the management of each objective.

But just one year later, the world suddenly seemed a lot less manageable by budgeting. The cobblestones of Paris were flying through the air as students rioted there and other students demonstrated at the University of California at Berkeley. Society everywhere began to challenge the influence of large institutions on individual liberties. And quite suddenly many people seemed to consider large companies as potentially dangerous institutions. A short time later, this theme led to a questioning of the path the world was taking into the future, when the Club of Rome published its report on "The Limits of Growth."

A transnational company in the oil business cannot shut its eyes when a public debate rages on whether it would be wise to slightly, or significantly, reduce the exploitation of natural resources. This directly concerns the future of such a company.

From the beginning, Shell was not averse to considering where this debate might go. But it became obvious that its specialised system of planning--its Management By Objective Bible, the method by which the company officially confronted its future--was not capable of providing answers to questions about society's long-term natural resource decisions. In fact, it was incapable of responding to any of the fundamental concerns which an institution might ask itself with regard to its future, its survival, its development, and its transformations.

Turning to Scenarios

Shell responded well to the challenge. Confronted with these questions concerning its long-term environment in the aftermath of 1968, top management created a new, independent planning outfit to begin studying the company's social environment, under the leadership of Pierre Wack. This unit's mission was to take a look at the world at large, to discover what was happening and to translate it into relevant terms for the company. The group decided to use the scenario methodology.

The scenario method must, above all, serve to support a collective reflection on the options available to the company. If the scenarios address critical decision issues, they will enlarge the vision of those responsible for the organisation's future. But as we learned after a number of years, the problem was not how scenarios are designed, but how they are received by the leaders and operations managers of a large company. The more basic question we should have asked ourselves was: How do people receive important information about the future from the outside world?

How Does "Learning about the Future" Occur?

Piaget's Discovery. A possible answer may be found in Swiss psychologist Jean Piaget's intriguing discovery of how young children process massive amounts of complex information about the world around them. It seems that for a young child there are two different kinds of learning and two kinds of information.

Certain information a child can manage given his or her current physical and mental development. The child has all of the necessary abilities to fully understand the significance of this information and to use it. This is part of the process which Piaget describes as " learning by assimilation."

But there is a second type of information that the child cannot yet process because he or she has not reached the stage when this information is meaningful. And before the child can learn to process or use this information the child must first modify his or her own mental structures. It has to "learn by accommodation."

Here's the way this works in the business world.

Suppose you operate a bank and the interest rate increases significantly, say by 7%. A well organised bank knows how to react to this change in its business environment. It has all the knowledge, structures and procedures in place to deal with the information that the interest rates have increased. It assimilates the signal and is capable of a perfectly adequate action.

But if you work in the area of real estate - if 90% of your financial capital has been borrowed - if you have several large projects underway with this borrowed money, and if interest rates rise by 7%, you cannot respond to the situation except by making internal changes. You must obtain refinancing from your bank, abandon some projects, sell others in mid-schedule, find a partner, and lay off employees. You must modify the structures of your business. If, in this situation, you do not learn by accommodation, rather than by assimilation, you endanger the survival of the business.

So the most important information for a business to know is: which changes could occur within its environment that will force it to modify its internal structures? In this example, the real estate company must be able to think of a future in which interest rates might rise by 7% or more and must consider what structural modifications might be needed to succeed if this occurs. In its board meetings it must not put on the agenda the question "Will the interest rate go up?" (which is the standard way of asking for a prediction), but instead, it must discuss the question "What will we do, if the interest rate will go up?" Only the latter discussion will begin to prepare the company for internal structural change.

According to Piaget's research, childhood development requires passing from one stage of understanding to another to obtain entry into a different, changing reality. Companies too pass from one stage to the next during their life.

Managing Transformation at Shell

Like most older companies, Royal Dutch Shell has known several stages during its life. Each transition was triggered by significant transformations in its surrounding environment that required modifications of its internal structure. For example, at the beginning of the century, most major oil companies based in Europe or North America had their main business activity in China, Malaysia, and Indonesia. Their core business was to produce petroleum for the lamps of China and Indonesia.

After the first world war, the upsurge in the popularity of the automobile forced those companies to completely transform their internal structures. When the companies began to supply gasoline for the motor cars of America and Western Europe their product, geographic orientation, marketing, and refineries all had to be modified completely.

So it was with an eye toward monitoring changes in its macro environment that in the 1970s Shell's board created a group charged with developing various scenarios. The first scenarios were ready in 1972. It's noteworthy that among eight scenarios presented that year, there was one which concerned a crisis in the supply of oil. This scenario examined a world in which the price of a barrel of oil four years hence, in 1976, would be $8. It was a wildly unlikely scenario at the time. In those days, the limits of a whole generation of oil managers' known world were defined by the price of a barrel of oil from Kuwait , C.I.F. Rotterdam that was $1.85 in 1972, down from $2.25 in 1951.

In 1972, many Shell managers could not believe that a world of $8.-/bbl oil was even imaginable. They could not get themselves to start contemplating what action to take in response to the $8 a barrel scenario. But only one year later, the world was panicked by an oil crisis, and two or three years after that, a barrel of oil cost $12. By then the board of Shell decided that if Pierre Wack and his people could write consistent stories of possible futures, by observing the world outside Shell and bringing important ideas to the table, it was probably wise to listen to them. As a result, henceforth, Pierre Wack was heard by the whole leadership of Shell, listened to by some, and generally applauded.

A Short Circuit Between Strategic Planning and Decisions

However, even by 1982 when the Board appointed me to run the company's planning operations, the top management of Shell had not established any concrete relation between scenarios developed by this scenario unit and the decisions taken during the previous decade. This is remarkable. When one re-reads the scenarios published during those first ten years, one is struck by how often these scenarios predict important developments in the world around Shell, sometimes years ahead of time. The timing and the quantification of these events were not always right, but the scenarios were often quite clear with regard to the direction of the change. Many people would say that to have an internal instrument of such reliable predictions, gave Shell an important competitive advantage. Yet, not only top management, also the planners felt uncomfortable.

Pierre Wack expounded on this situation in articles published in the Harvard Business Review in 1985. He did not believe that the strength of scenarios was in their predictive nature. According to him, scenarios subtly transform the point of view of Shell's managers, who, after having read them, will make somewhat different decisions than they would have otherwise.

To Concern One's Self with the Future: Is this to Predict it?

Was Shell's problem that the scenarios were seen as a feeble and dubious attempt to predict future events, or was the system which was supposed to use them at fault? The fact that decisions based on the available high-quality information were not taken could signify either that the scenarios were not as good as they originally seemed, or that the system was not as effective as it should have been.

Pierre Wack believed that the real problem was that insights into possible futures were useless when they were merely presented to decision makers. For example, imagine that you are the mayor of Rotterdam in July of 1920. You have a meeting with a futurist with a reputation for absolute accuracy. You ask this person what will happen to Rotterdam during the next 25 years. (According to the Shell method, a scenario covers this period.) This forecaster predicts a cataclysmic period from the Treaty of Versailles to the end of the Second World War--the stock market crash of 1929, the rise of Nazism, the German bombardment of Rotterdam in 1940, the blocking of the port and its use for submarines, the Allied bombardment in 1943, and, just before liberation, the systematic destruction of the port by the German occupiers.

> And the futurist then asks: "Now that you know what is going to happen
> what are you going to do, Mr. Mayor?"
> My belief is that the Mayor can only answer: "Nothing"

The future can not be predicted and, even if it could, no one would dare to act on it. The mayor can not use this prediction because he has not participated in its development, neither have his collaborators. So we have to learn to deal with the future in a different manner.

How Does the Human Brain deal with the Future?

Everyone must cope with the uncertainty of the future, and most individual people, in most cases, manage to do this well. So, how does your brain perform this function? A Swedish neurobiologist, David Ingvar, has published research which shows that the human brain is constantly charting a course through the future by building many scenarios of what could happen in five minutes, in half an hour, in the next day, month and sometimes, depending on the subject, many years ahead of time. The brain explores the possible developments in your world -the paths, their consequences, the alternatives and then thinks of an action to take under each of the envisaged possibilities. Some of the imagined possibilities are favourable for you, some are not so nice, but the brain of a healthy human being looks at many possible eventualities according to the information it has received. According to Ingvar, the brain considers the paths we can take, by what action in response to each eventuality, <u>and then stores these alternative time paths.</u>

As a result, the brain develops a "memory of the future" -a memory of the visits we make to the many possible futures we are prepared to imagine. The brain does not attempt to predict the future. It constructs a library of actions corresponding to possible futures. And when the person needs to act, there is no need to spend a great deal of time planning a path according to the menu of options. The brain has already visited each of these options and is merely required to apply the strategy already prepared for this precise case. Since the brain has explored a large number of futures, the chances are that you will be in a situation for which you are ready to take action.

Businesses: Blind to the Future

Businesses mainly process the short-term future. Their planning procedures produce an output of, usually, only one short, internally directed time path into the future: the Plan, the Strategy. Submerged by incidental information, companies are practically deaf and blind. Not only do they have the tendency to imagine only one future, they also ask themselves whether it is the most likely or the most preferred. Thus, in 1985, not one American oil company explored the course of action that it should take if the price of crude oil dropped. Instead they all asked the wrong question: " Will the price of oil drop and when?" These types of questions give rise to an entertaining debate, but they do not lead to action or prepare the company for future action. Neither do they create a corporate equivalent of a “memory of the future.” The latter only happens, if several futures are considered and the question asked is the one: “Which action should accompany which future?” This is where scenarios come into their own. Scenarios describe the corporate scenery of several possible futures, ready to be visited by the company’s different management levels. Each of the scenarios should be given equal probability to prevent the managerial debate to slide down the slippery slope of “the preferred or the most likely future” to result in the one plan, or the Strategy (singular).

Separating the Creation of Options and the Taking of Decisions

In order not to fall into such a trap, an institution must separate the function which creates its options from the moment that it makes the decisions. Management teams must learn to separate the examination of all possible futures from the execution of decisions, just like the human brain has done for so long, so effectively.

The Correct Use of Scenarios

Shell used scenarios to examine a variety of futures. Of course, reality is infinitely complex and the ability of people to process information is limited. So it is necessary to distil multiple possibilities into two or three scenarios. Once these scenarios were ready, the management teams of major business units and of the largest subsidiary companies around the world would meet for seminars for two or three days. There they would examine what they would be doing if one or the other scenario were to come to pass. In those visits to possible futures, these managers were creating options. If, for example, they worked with two or three scenarios, they would easily arrive at a dozen options, all logical and perfectly feasible. At the end of the session, not only did these managers have those options stored in the only archive that counts: their own heads, but they also had a language in which they could speak about these options, now and in the future. They would not take a decision there and then, but would return home and manage their units.

And if, for instance one year later, a situation similar to one of the scenarios were to occur, these managers would have a common language to manage the situation, could hold brief meetings and quickly arrive at joint and shared conclusions. Within two or three weeks, they could take important decisions that would restructure the company. The reason they could move on such important matters so quickly was because a certain option was present in the collective memory. This group’s understanding was gained by the development of common language during the option-creating seminars.

Not One Future, but Many

A crucial part of the scenario learning process is to make managers accept that there is always more than one way forward. It is surprising that many people don't seem to grasp this notion. Managers exposed to Shell's set of alternative scenarios responded all too often: "Very interesting. But now tell me what the price of crude oil will be next year" After more than a decade of experience with the scenario methodology, it still happened that a business unit that had plans to invest $1 billion dollars into a process for the conversion of natural gas wanted to know what the price of gasoline would be in Singapore in 2003! The explanation was that the price of gasoline was one of the most important influencing factors on the profitability of the project!

It took more than ten years for the majority of Shell's top five hundred managers to stop asking for a prediction of a unique future. More than a decade of hard work for Pierre Wack and the planning team to ensure that most management levels understood that the future is multiple, not singular.

This does not mean that everything that was taught and learned about the Management By Objective and decision making techniques had to be abandoned. However, it must be understood that cash flow and earning power calculations are not techniques to make decisions. They are helpful tools in the preceding phase when options are created, alternative solutions can be derived, and calculations can be made that take into account varying circumstances.

Death and Survival of Enterprises

So the options exercises that are part of the process of scenario planning prepare the company to adapt its internal structures to extensive changes in the external universe. Scenario planning ensures that all levels of management share the concern that the organisation make decisions that will enable it to survive environmental upheaval. The decision-making process within a company is, in reality, a learning process, one in which the entire organisation needs to participate.

Some institutions learn better than others. Studies have estimated the average life expectancy of a company at forty to fifty years, significantly less than that of a human being. This is difficult to explain, especially when you consider that the maximum life span of a company is almost indefinite. Witness the examples quoted earlier: Stora, the Swedish company that now is the largest paper manufacturer in the world has been around for seven hundred years. Some Japanese companies are between two and three hundred years old. And there is a club in New York City of companies that started before the American Revolution. But most companies live fast and die young.

Their problem, in most cases, seems to me to be a result of a learning deficiency. To learn is without a doubt the most important factor in the survival and evolution of any organisation. And I believe that scenario planning is an essential tool for organisations to learn to evolve quickly enough so that they survive and prosper.