

# Scenarios: An Explorer's Guide

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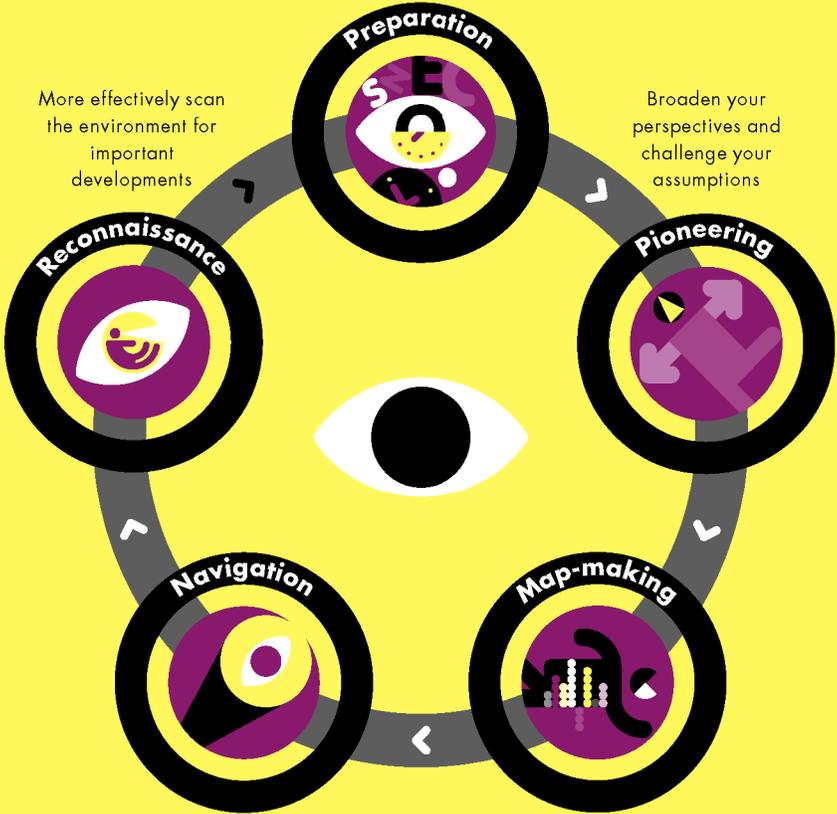


**This book is written for people who would like to build and use scenarios, and also for those who want to enhance their scenario thinking skills. We visualise our audience as people who are curious by nature, who want to make a difference, and who are highly motivated to acquire a deeper understanding of themselves and the world around them.**

Be clear about  
your goals and  
resources

More effectively scan  
the environment for  
important  
developments

Broaden your  
perspectives and  
challenge your  
assumptions



Successfully find  
your way as  
events unfold

Create coherent and  
vivid stories about  
the future

**People shape the future**



**Scenarios:  
An Explorer's  
Guide**

Global Business Environment  
Shell International 2003



## We welcome your questions and views

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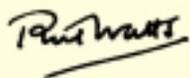
## Stimulating Questions

For 30 years we have used scenarios in Shell. Scenarios are not projections, predictions or preferences, but alternative futures. They are purposely challenging, designed to help us confront the assumptions we are making about the present and the future in the context of the businesses we are running. We do not do them out of academic curiosity, but to help us to make better decisions and test our plans as we develop our business strategies.

Scenarios are valuable because they stimulate questions rather than because they provide answers. Our first scenarios in 1972 suggested that a supply crisis could bring a sharp rise in oil prices. A year later, it was not just a scenario. We do not pretend that insight enabled us to avoid the shock, but we do think the work gave us a lead in understanding the new world the industry was entering. We had prepared ourselves by thinking the unthinkable.

Scenarios have continued to provide many valuable insights. For example, our 'Sustainable World' scenario in 1989, which explored possible ecological limits to growth, greatly influenced the thinking that led to our commitments on sustainable development. Our most recent set of scenarios, 'People and Connections', have helped us interpret world events, including the tragedy of 9/11 and its aftermath, and have also been used to test the robustness of our strategies. That is why we have continued to invest in building and applying scenarios at a time when every activity has to justify its value.

We are placing this book in the public domain because of the strong interest shown in our scenario methods, and the potential for scenarios to be used to further debate on complex issues of relevance to us all.



Sir Philip Watts

Chairman of the Committee of Managing Directors, Royal Dutch/Shell Group

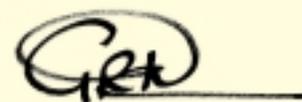
## Exploring the Future

The future is 'terra incognita': although we may be able to guess the outcome of events that lie close to us, as we project forward we enter an unmapped zone full of uncertainty. Paradoxically, the range of options this reveals can seem paralysing.

No one can definitively map the future, but we can explore the possibilities. At Shell we use scenario building to help us anticipate what the future may hold and prepare ourselves more effectively. We also believe it can inspire individuals and organisations to play a more active role in shaping a better future—for themselves, or even on a global scale.

In this book, we use a metaphor of exploration and map-making to describe how we think about building scenarios. This imagery conveys not only what we are trying to do, but also important elements of how we do it. Like a set of maps describing different aspects of a landscape, scenarios provide us with a range of perspectives on what might happen, helping us to navigate more successfully. Exploration—of a territory or the future—involves not just analytical thinking, but also intuition.

This book describes the approach used to develop our most recent set of global scenarios, 'People and Connections'. But this is only one of many different ways to build scenarios: Shell has been working with scenarios for 30 years, and we are still learning. Moreover, since the environment we live and work in is constantly changing, building scenarios demands continual innovation and creativity. I hope this book will inspire and encourage you and your organisation to build scenarios and embark on your own exploration of the future.



Ged Davis

Vice-President, Global Business Environment, Shell International Limited

## Using This Book

The book is written in two parallel streams, one explaining the intent behind scenario work and the other providing examples from our most recent global scenarios cycle. The summary of the scenarios themselves, entitled *People and Connections: Global Scenarios to 2020*, is published separately. Please contact us if you would like a copy.

This book is intended to be of relevance to those wishing to undertake scenario projects.

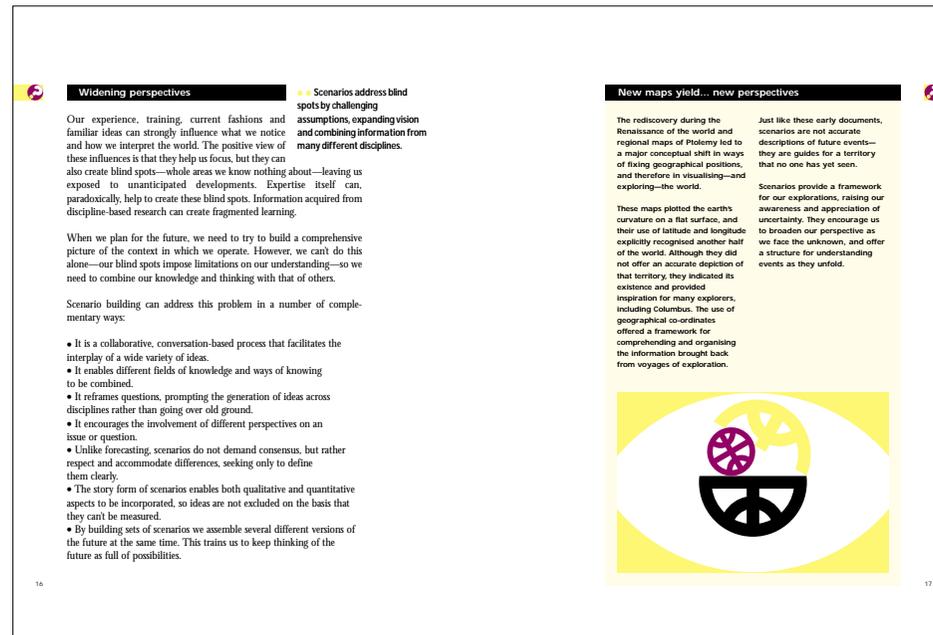
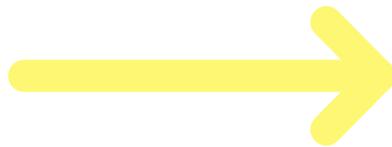
Obviously, there are many different reasons for building scenarios and this book cannot describe them all. We have tried, instead, to present the most comprehensive coverage of Shell's scenario work by selecting specific examples from our largest and most complex project.

However, our aim is to provide guidance and ideas rather than stipulating specific methods and rules for building scenarios.

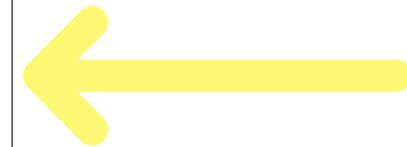
Although we have described a roughly systematic sequence, in practice scenario work is usually not neatly ordered. It is methodical but not mechanical, and intuition, as well as rational analysis, is a critical ingredient of success.

You may have lots of time and resources to devote to building scenarios, or you may be constrained to use—or just prefer—a faster, less detailed approach. Whichever kind of project you create, we hope you find this description useful.

# Left, intentions



# Right, examples



## What Are Scenarios and Why Use Them?

A scenario is a story that describes a possible future. It identifies some significant events, the main actors and their motivations, and it conveys how the world functions. Building and using scenarios can help people explore what the future might look like and the likely challenges of living in it.

Decision makers can use scenarios to think about the uncertain aspects of the future that most worry them—or to discover the aspects about which they should be concerned—and to explore the ways in which these might unfold. Because there is no single answer to such enquiries, scenario builders create sets of scenarios. These scenarios all address the same important questions and all include those aspects of the future that are likely to persist (that is, the predetermined elements), but each one describes a different way in which the uncertain aspects of the future could play out.

Scenarios are based on intuition, but crafted as analytical structures. They are written as stories that make potential futures seem vivid and compelling. They do not provide a consensus view of the future, nor are they predictions: they may describe a context and how it may change, but they do not describe the implications of the scenarios for potential users nor dictate how they must respond.

The use of images can help to make scenarios more comprehensible. Some aspects of scenarios may be described with numbers for use in the quantitative analysis of policies and strategy, but the richness of scenarios as a strategic tool stems partly from the fact that they can include more intangible aspects of the future.

Scenarios are intended to form a basis for strategic conversation—they are a method for considering potential implications of and possible responses to different events. They provide their users with a common language and concepts for thinking and talking about current events, and a shared basis for exploring future uncertainties and making more successful decisions.

- ● Building scenarios is like making a journey of exploration—it can change how we see and understand the world.

## Shell's Global Scenarios *People and Connections*

Shell's most recent set of global scenarios is *People and Connections*, the public summary of which was released in January 2002. *People and Connections* comprises a focal question and two scenarios, *Business Class* and *Prism*.

The focal question explored in the 2001 Global Scenarios is: How will people and societies shape liberalisation, globalisation and technology in a more connected world?

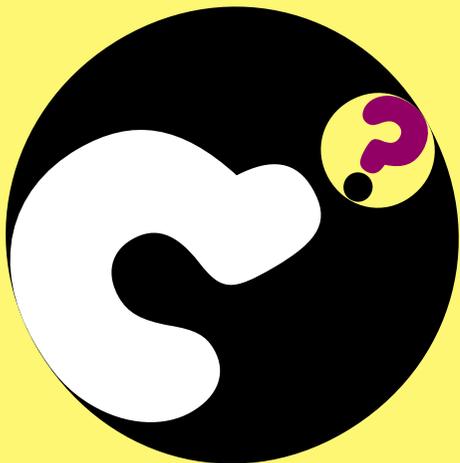
### *Business Class*

*Business Class* explores what happens when the globally interconnected elite and the only remaining superpower, the US, lead the world towards greater economic prosperity for all.

### *Prism*

*Prism* questions the monochromatic world of global integration and instead explores the pursuit of multiple modernities and the persisting power of culture and history.





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## Confronting assumptions

● ● Our decisions about the future depend on how we think the world works.

We all face decisions that prove to be turning points in our lives. Sometimes we look back at those moments and feel pleased because we made what proved to be a good decision. At other times, we regret that we missed something that, if we had only known, might have changed our decision—and our future—for the better.

When organisations or individuals make decisions, they tend to do so on the basis of their 'mental map' of the future. People can only have a partial understanding of their context, and this helps to shape their particular map of the future, influencing their assumptions about which aspects of the future are important to the choices they face. Until we compare our assumptions with those of others, we often don't even know we have such a map, let alone what is distinctive about it.

Exploring the assumptions we currently hold—individually and collectively—about the future can equip us to act more effectively in the present. It can help us to recognise when our assumptions are being challenged by events and how to respond successfully. In organisations large or small this capacity can mean the difference between success and failure. To help us to see and interpret important data, we need to find ways to develop a thorough understanding of the context in which we operate and how it may evolve. Scenarios offer one such approach.

## Mental maps

We like to think of maps as objective sources of information, but recent work on the history of cartography has challenged this view, establishing how maps both codify a particular perspective on reality, and, in turn, influence our view of the landscapes they represent.

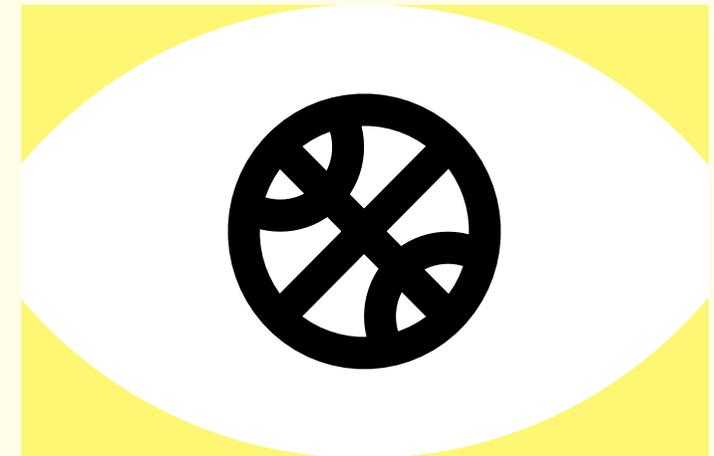
Sometimes a mapmaker deliberately concentrates on one aspect of a territory; but maps are also shaped by more subtle intentions.

Medieval *mappae mundi* represent not so much the physical dimensions of the world as the spiritual arena of Christianity as it was at the time. They usually show the interior of the Classical or Medieval world, centred on

Jerusalem and circumscribed by an ocean beyond which nothing was deemed to exist.

European maps of the exploration of America represented and renamed the land as it appeared to the colonists. By excluding the place names of the Native Americans, these maps denied the legitimacy of their claims to their territory.

We can compare the process of physical map-making to the way in which we view the future. Just like graphic maps, our mental maps are constructions based on, and shaped by, our culture, background and life experiences. As with graphic maps, it is all too easy to accept our mental map as the true representation of reality.





## Recognising degrees of uncertainty

Scenario thinking helps us to focus our thoughts about the future and then to recognise the questions surrounding them and the degrees of our uncertainty. We could argue that nothing is certain, but how can we make decisions from this standpoint?

Most human beings go to the opposite extreme: uncertainty makes most people profoundly uncomfortable and we prefer to ignore it. We tend to build in mechanisms to simplify our world, not complicate it, and make assumptions about how the world works.

However, these assumptions can betray us when we are trying to make specific decisions—especially about unfamiliar areas or at times of crisis. Scenario thinking demands that we re-examine our assumptions—but not about everything. We need to formulate what we are concerned about, then focus on those issues and decide which aspects of them are relatively certain, and which are most uncertain and matter most.

We start by deciding what we want to explore—which issues will be the focus of our exploration. To do this, we need to have an idea, at least, of our own aspirations. What kind of future vision of ourselves do we have, as individuals and/or as a group? And is this rooted in a realistic understanding of our current identity and capabilities? These questions alone can be matters of some complexity.

Once we have identified the issues that really matter to us, then we have to decide how far out we want to look—for example, 2 or 20 years? And then we need to evaluate the kinds and degrees of uncertainty that will be associated with those issues over that time period.

● ● Scenario planning provides a method for acknowledging—and working with—what we don't know (and what we don't know we don't know!).

## Mapping uncertainty

The temptation with both graphic and mental maps is to settle on one perspective that seems a reliable guide and forget about change or other points of view. This has led to a fascination with forecasting.

In some circumstances, formally incorporating uncertainties about how our context may change may not be warranted—for example, in the preparation of short-term budgets. In other situations, we may acknowledge a limited idea of uncertainty, undertaking sensitivity analyses and involving different quantifications in our calculations. In both instances our understanding of the variables involved limits our framing of the available options.

However, such approaches are dangerously limited if the decision at hand is broader, such as how to position an organisation for growth in current or new areas.

In such cases, we must ask not only whether we have an effective understanding of the variables we know about and their relationships, but also ask if these will continue to be important in the future. Over-dependence on oil price forecasting has been very costly.

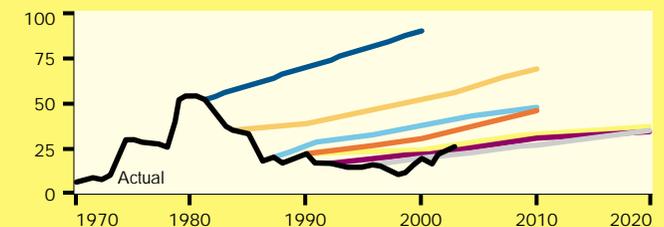
Perhaps we should be exploring other factors or entirely new contexts?

### Oil price forecasting has failed

The oil industry's expectations in:

■ 1981 ■ 1984 ■ 1987 ■ 1989  
■ 1991 ■ 1993 ■ 1995

US\$/bbl (1990)



Source: Energy Modelling Forum





## Widening perspectives

Our experience, training, current fashions and familiar ideas can strongly influence what we notice and how we interpret the world. The positive view of these influences is that they help us focus, but they can also create blind spots—whole areas we know nothing about—leaving us exposed to unanticipated developments. Expertise itself can, paradoxically, help to create these blind spots. Information acquired from discipline-based research can create fragmented learning.

When we plan for the future, we need to try to build a comprehensive picture of the context in which we operate. However, we can't do this alone—our blind spots impose limitations on our understanding—so we need to combine our knowledge and thinking with that of others.

Scenario building can address this problem in a number of complementary ways:

- It is a collaborative, conversation-based process that facilitates the interplay of a wide variety of ideas.
- It enables different fields of knowledge and ways of knowing to be combined.
- It reframes questions, prompting the generation of ideas across disciplines rather than going over old ground.
- It encourages the involvement of different perspectives on an issue or question.
- Unlike forecasting, scenarios do not demand consensus, but rather respect and accommodate differences, seeking only to define them clearly.
- The story form of scenarios enables both qualitative and quantitative aspects to be incorporated, so ideas are not excluded on the basis that they can't be measured.
- By building sets of scenarios we assemble several different versions of the future at the same time. This trains us to keep thinking of the future as full of possibilities.

- Scenarios address blind spots by challenging assumptions, expanding vision and combining information from many different disciplines.

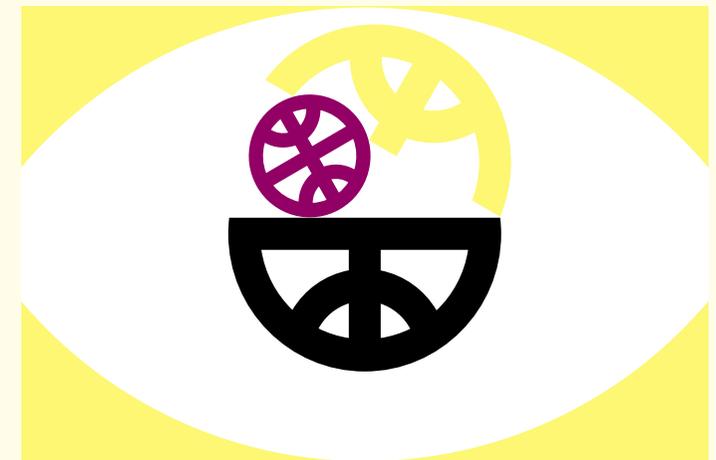
## New maps yield... new perspectives

The rediscovery during the Renaissance of the world and regional maps of Ptolemy led to a major conceptual shift in ways of fixing geographical positions, and therefore in visualising—and exploring—the world.

These maps plotted the earth's curvature on a flat surface, and their use of latitude and longitude explicitly recognised another half of the world. Although they did not offer an accurate depiction of that territory, they indicated its existence and provided inspiration for many explorers, including Columbus. The use of geographical co-ordinates offered a framework for comprehending and organising the information brought back from voyages of exploration.

Just like these early documents, scenarios are not accurate descriptions of future events—they are guides for a territory that no one has yet seen.

Scenarios provide a framework for our explorations, raising our awareness and appreciation of uncertainty. They encourage us to broaden our perspective as we face the unknown, and offer a structure for understanding events as they unfold.





## Addressing dilemmas and conflicts

● ● Scenarios can help clarify or even resolve the conflicts and dilemmas confronting their users.

Decision makers can get stuck. Sometimes, it is because the context of their decision is changing in ways they do not understand. At other times, it is because a situation demands that they make a difficult compromise, or because colleagues hold different opinions about how the future may unfold or have conflicting values and/or styles of operating.

These sticking points often manifest at the worst possible moment for an organisation, for example, when the context is changing quickly, in unpredictable ways, and a fast response is critical.

It can be difficult to identify the nature of the crucial differences between people's outlooks. Even when it is possible, it may not simply be a question of finding a rational resolution. People have strong emotions that often come into play when the future of their organisation is challenged or others question their opinion.

Scenarios can help in such situations. They can bring greater clarity to difficult areas of decision-making because they acknowledge and focus on what we don't know, encouraging us to explore the nature of uncertainties and helping us to understand where the need for judgement lies.

Scenario building encourages the involvement of a wide range of views, rather than seeking a single answer, so it is a process designed to accommodate multiple values and opinions. It allows people to explore their ideas about the future context without feeling threatened by the need to fix an immediate decision.



## Explaining conflicts and dilemmas

Conflicts can be defined as the clashing of opposed values or opinions. Dilemmas are situations that demand that we make seemingly impossible choices, and they can arise even when there are no conflicts. Both conflicts and dilemmas can impose paralysing constraints on decision makers.

don't know about a situation or issue. Building scenarios can help to clarify these areas of uncertainty.

The surfacing of conflicts and dilemmas highlights the judgements required of decision makers and allows us to take constructive action, such as doing useful research and identifying the crucial issues to be debated.

The origins of conflicts and dilemmas often lie in what we



### Conflicts

'The Internet will change everything' versus 'The Internet is all hype'.

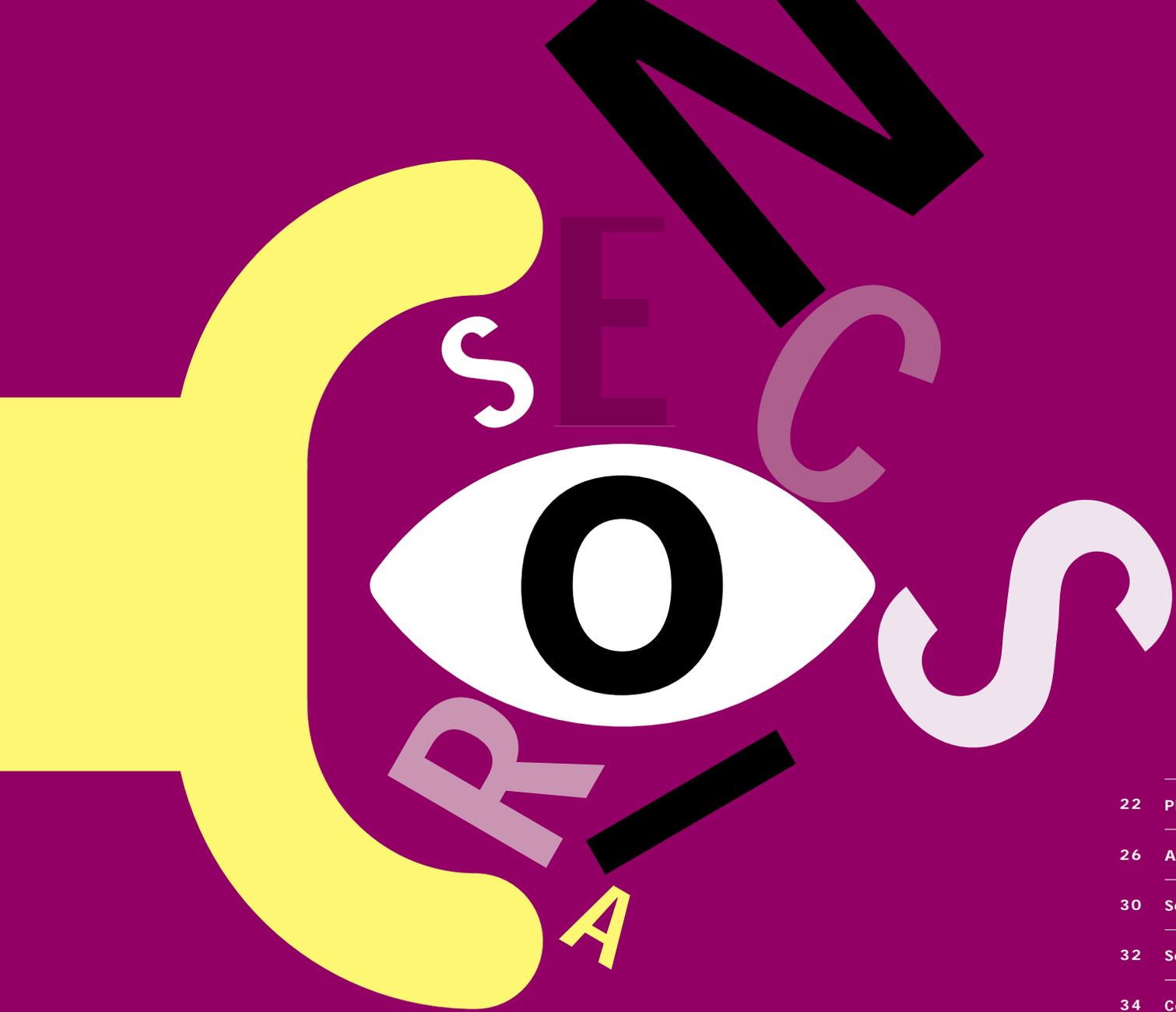
'The ecosystem is resilient and if it changes we can adapt' versus 'The ecosystem is fragile and the consequences of collapse are dire'.



### Dilemmas

How can we ensure sharper boundaries in organisations to improve transparency and accountability and, at the same time, have co-operation and capture synergies in the organisation as a whole?

How do we increase global reach and build on global brands, while recognising and responding to the growing popular antipathy towards big business and globalisation?



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## Planning the project

- ● It is useful to weigh up what you want your scenario project to achieve against a description of the time and resources that are available.

To get started, it is useful to put together a clear description of the scenario project. This exercise can help to clarify aspirations for the project among the members of the scenario-building team. The resulting document can be used to answer questions from potential sponsors. Obviously, it is impossible to predict accurately many of the aspects of such a project and ongoing reassessment of milestones and resources is likely to be necessary.

*What is the primary purpose of the project?* For example, if it is to acquire knowledge, there will be a strong emphasis on research. If it is to improve communication and understanding within the scenario-building team, group processes will receive more attention.

*Who will be using the scenarios?* For example, the intended users may be tactical or operational staff or they may be the strategic decision makers of the organisation. How will this affect the kinds of scenarios you want to produce?

*Who is sponsoring the project?* Sponsors provide financial and other forms of support to the project. They are not necessarily the intended recipients of the scenarios. They may comprise a single entity, such as a charitable foundation or management team, or consist of a coalition whose members are seeking to resolve a common problem.

*Why has the scenario approach been chosen?* It might be because there is ambiguity about a problem: scenarios are also often used to help focus on uncertainties to enrich forecasting work.

*What are the expected outcomes?* These can range from the general to the specific: for example, raising the public profile of particular issues, or supporting specific investment decisions or improving a team's performance.

## Shell's 2001 Global Scenarios

Shell's most recent global scenario project began in late 1999, and a set of scenarios entitled *People and Connections* was produced in April 2001.

Shell's global scenarios are prepared every three years by the Global Business Environment unit, based at Shell Centre in London. Following the initial research phase, global scenarios take about a year to develop and publish.

Global scenarios are designed to aid the formulation of a robust Group strategic direction by challenging individual and more widely held assumptions, so

highlighting potential risks and opportunities. They help to identify new challenges emerging in the business environment for the attention of the Committee of Managing Directors (CMD) and others leading Shell's Businesses. The scenarios are also used in the public arena by Shell's staff, as a basis for exchanging views with others.

Those involved in the 2001 scenario project included the CMD, participants from Shell Businesses, and members of the Global Business Environment unit. Many from outside Shell were involved in the supporting workshops.

### Some useful definitions

**The Royal Dutch/Shell Group ('the Group')**: comprises Businesses including Chemicals, Exploration and Production, Gas and Power, Oil Products, and Renewables.

**The Committee of Managing Directors (CMD)**: led by the Chairman, considers and develops long term objectives and plans for the Group, reviews key investment decisions, reviews key appointments and appraises overall performance. The CMD is the sponsor of the global scenarios.





*What time horizon will the scenarios cover?* If this is too short, then the scenarios may only convey a creative description of the present. If it is too long, the scenarios may lose focus and relevance.

*How long do you have for the scenario project?* The project should take long enough to allow ideas to mature, whilst maintaining momentum and providing timely results.

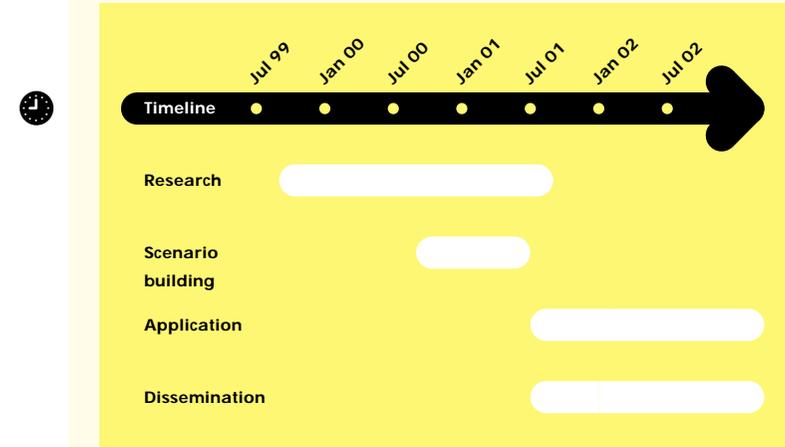
*Who will be involved, and how much time is required?* This depends on the particular needs of the project: scenarios can be developed within an organisation by a small team, or by larger groups involving external participants. It is difficult to predict the time it will take to build scenarios because each group of scenario builders works differently, but time spent in workshops is likely to represent a significant commitment: it can be ten days or more for a large project, and some workshops may last several days at a time.

*How much will it cost?* The main cost of scenario work is often the time of those involved. Other costs may include commissioned research, specialist facilitators for workshops, travel and accommodation for workshops and administrative support.

*How will the scenarios be applied?* Particular goals should be identified at the beginning of the project, for example the inclusion of the scenarios in the creation of company strategy, but goals may emerge in response to insights gained during the scenario-building process and by changing circumstances within the organisation. Closely related to this is the question of the mechanism of their use. For example, they may be intended for use by a group or by individuals.

## The four phases

<p><b>The four phases of the Shell 2001 Global Scenarios project were:</b></p> <p><b>Research</b> The project took advantage of Global Business Environment's ongoing research program. This is intended to address knowledge gaps and reframe thinking in specific areas in order to identify new challenges for the Group.</p> <p><b>Scenario building</b> Interviews were conducted with leaders within Shell and three workshops ('orientation', 'building' and 'affirmation') were held, forming the backbone of the scenario-building work.</p>	<p><b>Application</b> Throughout the scenario-building process, participants took ideas back to their respective Businesses on an informal basis. Once finalised, the scenarios were presented at workshops and used to test strategies, as part of the 2001 planning process. They were also used as a basis for developing focused scenarios for specific Business units and countries.</p> <p><b>Dissemination</b> Since September 2001, several thousand copies of the Global Scenarios have been distributed to Shell staff. Presentations were made to staff in locations around the world. The public summary was released in January 2002.</p>
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## Allocating responsibilities

The *scenario director* is responsible for the success of the project and has ultimate responsibility for the final material.

Throughout the process, the director distils the 'stories' or frames of thinking that are emerging and orchestrates their development, in close consultation with others in the core team. The director must ensure a balance between unconventional thinking and plausibility, the investigation and selection of ideas, creativity and relevance, and the need to supply expert knowledge while leaving room for further exploration. Such judgements often require the exercise of intuition as well as analysis.

In addition, directing a large scenario project means being able to delegate much of the planning, analysis, and synthesis to others and then bring it together at critical junctures. Once the scenarios are completed, the director also plays a leading role in their communication and dissemination.

Members of the *core team* need to be able to cope with the ambiguity inherent in thinking about the future; they should be curious about the world and willing to explore new ideas. The abilities to grasp detail and yet synthesise bigger concepts and to be passionate and yet detached are also useful.

Ideally, the core team of a scenario project is made up of the decision makers who will be using the scenarios (although, often, decision makers cannot commit the necessary time and prefer to see the scenarios closer to completion). This team is collegiate, but defining roles helps to ensure that key skills are present and the team meets its objectives. In a small team, individuals may support a number of roles.

A dedicated space can help the team maintain cohesion and achieve goals: this would preferably be a room large enough for meetings, where ideas can be posted on walls and reading material stored.

- ● The core team, under the leadership of the scenario director, brings the scenarios to fruition.



## The scenario director and core team

At Shell, large scenario projects are developed by a consulting team from Global Business Environment; smaller, more focused scenario projects are developed by a team from the client organisation, supported by a member of Global Business Environment.

In the case of the global scenarios, responsibility for the project lies with the Vice-President, Global Business Environment, and the staff of that unit, the majority of whom are specialists in particular disciplines. Together these comprise the core scenario-building team.

• Director: leads the project and shapes the scenarios. The main attributes shared by present and past scenario directors at Shell are passion, the willingness to exercise strong intuition and the courage to champion unconventional thinking. They also share the ability effectively to lead diverse teams, combining creative and analytical perspectives. The main differences have been their specific areas of expertise and their experience of Shell—some were long-standing staff, others were recruited from outside the Group.

• Manager: manages the mechanics of scenario building and application, including scheduling, workshop design and planning of communications. This enables the director to stand back from the day-to-day activities and focus on the substance of the scenarios.

• Focused research leaders: manage multidisciplinary research and integrate ideas.

• Editor: crafts the scenarios, working closely with the director.

• Core specialists: develop specific ideas, gather detailed information and bring 'the discipline of their discipline' to the scenarios.

• Support staff: support members of the core team, as well as organising venues, travel, payment of accounts, distribution of materials, and so on.



Scenario building is an iterative process of improvisation and review, and benefits greatly from the contribution of new ideas. This doesn't necessarily mean adding more people, but it may be useful to include a wider range of perspectives among the scenario workshop participants.

A core team that chiefly comprises specialists may choose to include decision makers from their organisation in the scenario-building process. The decision makers are likely to be the *primary recipients* of the scenarios, so their inclusion will ensure the relevance of the scenarios. They can help to identify key issues that need to be addressed, contributing their knowledge of the business environment and the internal and external forces shaping their organisation. Their involvement at this stage may also facilitate the eventual use of the scenarios within the organisation. By being involved in the building process, they will develop a greater sense of ownership of and belief in the material.

Other workshop participants can include *specialist contributors* from other disciplines or businesses, who can bring rigour and new perspectives to the process.

As with all group dynamics, the nature of the exercise will change as the number of participants increases: a group of 15 will need to be organised differently from a group of 50 (and, in turn, that will be different from a group of 100, and so on). Facilitation can be handled in a variety of ways: a group might facilitate itself, or rotate these responsibilities amongst the participants, or external facilitators might be used. However, scenario facilitation is difficult if one has no understanding of the scenario-building process—and some aspects of this work can make self-facilitation difficult.

## Roles and responsibilities

**Shell's global scenario project is the largest scenario project conducted by the Group. For the 2001 project, the participants comprised:**

### 5 Sponsors

As usual at Shell, this was the CMD. Provided funding; chief among the primary recipients of the scenarios.

### 15 Core team

The staff of Global Business Environment, comprising specialists in particular disciplines. Responsible for building and disseminating the scenarios.

### 30 Full team

Included the core team and those nominated from Shell's main Businesses by their CEOs. Involved in scenario development throughout the scenario-building and application phases; took insights back to their Businesses.

### 200 Specialist contributors

Invited to make specific contributions rather than being involved throughout the building process.

### 1000+ Primary recipients

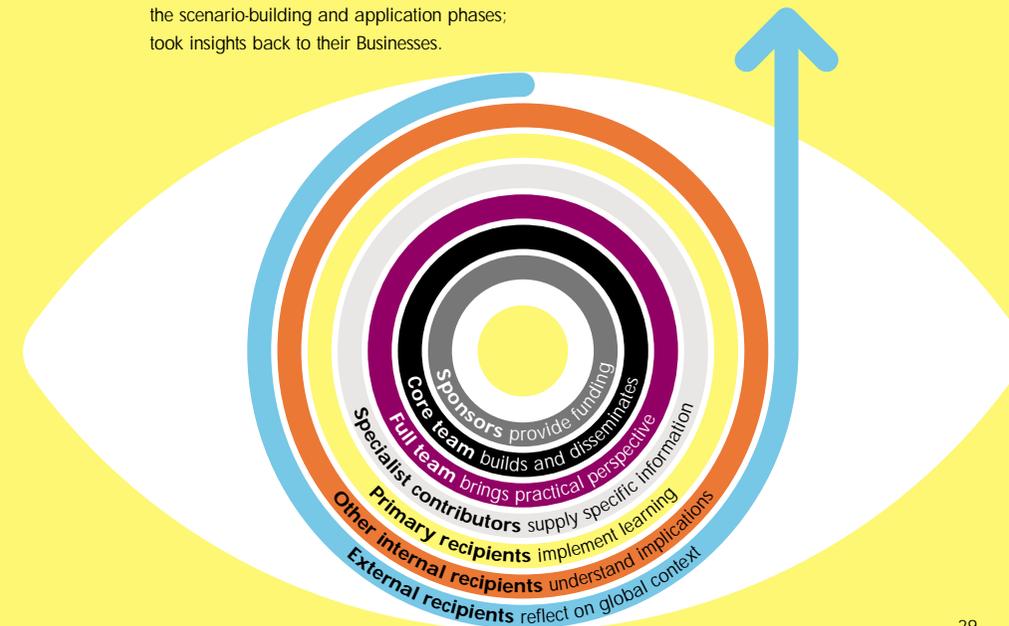
The leaders of the Group and those involved in strategy and planning in Shell's Businesses.

### 2000+ Other internal recipients

Copies of the 2001 Global Scenarios were distributed within the company.

### External recipients

Global Business Environment produced a public version of the scenarios for external distribution in print and online.





## Securing time

Those most involved in collaboration are the scenario builders—the core team and other workshop participants. The workshops involve all the scenario builders, and the core team continues research between the workshops. A great deal of learning happens in conversation, making it difficult for anyone coming into the process late or missing any part of the building process to catch up. For this reason, scenario builders need to commit to participating in all the workshops.

Important dates need to be arranged early enough for team members to be able to set aside the required time. Workshops may last from a day up to a week. Longer-term projects offer the advantage of promoting team cohesion, allowing scenario builders time to shift their focus away from the mundane and to absorb new ideas. It is useful to arrange weeks when all the members of the core team are in the office, so that face-to-face sessions can be organised quickly and easily.

Ideally, scenarios will reflect the collective richness of insight of the scenario builders. Interaction must be managed to take account of dominant characters with strong opinions and those who have a natural desire to come up with answers quickly. Conversation in small groups and the reporting back of insights in plenary are important means of surfacing, absorbing and integrating ideas, and sufficient time must be allowed for this.

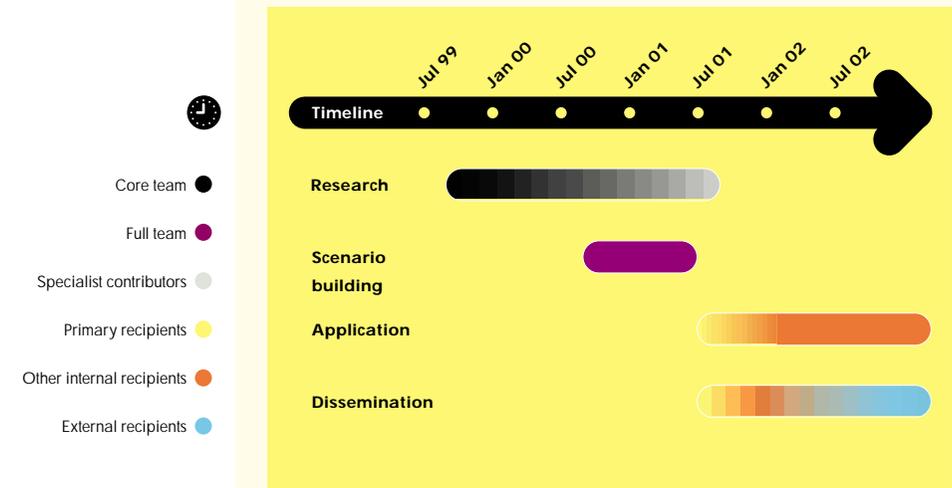
Time should also be secured in advance with the sponsors, primary recipients and any others who will be involved in the application of the scenarios.

●● Scenario building is highly collaborative and requires continuity of participation and firm commitment to the process.

## Commitments for the Global Scenarios

Those agreeing to participate in the Group's Global Scenarios project made the commitment to provide documents, give interviews, participate in workshops and provide feedback. Some of these commitments were delegated

by the CEOs of the Businesses to their nominees, who were often people involved in strategy development and innovation within the Group. The main activities requiring participation beyond the core team are listed below.





## Setting research priorities

- ● Scenarios need to be built around research that is relevant and yet challenging.

The wider the scope of the scenario project, the more important it is to prioritise the topics of research. This can be difficult since the aim is to encourage the exploration of challenging new ideas, while ensuring that research does not range too widely to irrelevant topics.

In particular, scenarios need to embody challenges that the primary recipients are likely to face as they make decisions about the future. Some of these challenges may have been understood already by certain individuals and others may not. As mentioned before, one of the objectives of scenarios is that participants in the scenario-building process and recipients of the finished scenarios will recognise a wider set of potential challenges than before.

In order to achieve this, a scenario-building team will move through a programme of research over the course of the building process. They start with general ideas about what is important: these may emerge intuitively, express the firmly held beliefs of the organisation or be ongoing areas of research. These broad areas of inquiry are often associated with established disciplines such as demographics or economics, which have their own particular methodologies. However, there is also great value in consciously incorporating research that crosses disciplines, since this can help to challenge conventional thinking: often, key insights emerge in the interface between disciplines.



## Initial areas of enquiry

The building process for the 2001 Global Scenarios actually began in 1999: a number of different factors played a part in establishing which broad areas of enquiry the team would start to research.

One factor was organisational change. The Group had gone through major structural changes in 1995 and again in 1998, reinforcing the shift towards managing the Businesses on a global basis. These kinds of changes within businesses tend to generate new imperatives for knowledge—and they had for Shell.

In addition, Global Business Environment has an ongoing programme of research into areas of interest relevant to its clients both within and outside the Group. This existing work also helped to shape the initial lines of investigation for the scenarios.

The broad areas of enquiry for the scenarios included the following topics: globalisation, international governance and the corporation; structural change in the oil and gas industry; value chain analysis of oil and gas businesses; oil markets and price; long-term energy scenarios to 2050; development paths for renewables and unconventional liquids; fuels and drivetrain evolution; the interconnected world, IT and e-business; societal trends; and sustainable cities.



## Conducting interviews

Conducting interviews is an important way for the scenario builders to find out and include information from people in the organisation.

If the interviewer sticks rigidly to a pre-planned set of questions it's likely she will obtain answers that are limited to her own concerns. In order to reach the underlying perceptions and anxieties of the interviewee, it is best to ask open questions, listen carefully to the answers and let these provide the guide as to which areas to pursue. Nevertheless, the interviewer might bear in mind three areas for exploration: the factors or issues raised, the clusters into which the interviewee would group those issues, and what links of cause and effect, if any, the interviewee sees between those different issues.

It can help to have a note-taker present, so that the interviewer can be fully involved in the exchange. For the sake of accuracy and completeness, it is advisable for the interviewer, interviewee and note-taker each to review their record of the interview.

Full transcripts can prove difficult to manage as source material for further work and the material itself is confidential, so the output from the interviews is most useful if it has been synthesised and condensed, for example around themes. This process usually requires several days and is best done by those who have conducted the interviews and have a sense not only of the substance of the material, but also any feelings that may have been behind it.

Interviews can be useful for capturing the views of potential users of the scenarios who cannot, for whatever reason, fully participate in scenario building.

- ● Interviews can reveal what people think is most important, what they aspire to, what their hopes and fears are and what they believe the future holds.

## Interviewing leaders

Those formally interviewed for Shell's 2001 Global Scenarios included the Chairman, others on the CMD, other CEOs of the Businesses and directors of the Group's corporate centre. Many informal discussions were also held with these and other decision makers in the Group.

The interview material, together with the broad areas of research already described (see p. 33) formed a basis for building the scenarios, and remained available for reference throughout the project.

Some open questions we asked were:

How would you describe the current state of affairs? What are the turning points of the past? What are the lessons?

What would be a good outcome in the future? What events and responses would stand in the way of such an outcome? What would contribute positively to achieving that outcome?

What legacy would you like to leave?

What would be a bad outcome? What events and responses could lead to such an outcome?

If you had the chance, what questions would you ask of an oracle about the future? How far into the future would you like to see?

# Questions





The next step is to collect the themes emerging from across all the interviews. One set of information will be about future trends or events in the external environment that will have the most impact on the organisation—these can be sorted into general categories. Obviously, the material will include an assortment of views about which ideas are most important and how they may unfold. In fact, the wider the range of ideas, the better.

However, the interviews cover not just the business context and how it is changing, but also how individuals perceive their organisation, and the aspirations and barriers to progress they see within the organisation. What is most likely to stand out from the interview material is the conventional wisdom—the stories that are most widely held within an organisation. This material will also reveal the commonly perceived conflicts and dilemmas of an organisation—where uncertainties and difficult trade-offs lie.

A final step is to consider what gaps there are in the interview material. As well as considering what is obviously missing, the team can review strategic documents and public statements that may reveal assumptions and perceptions that have not been raised in the interviews.

## Synthesis of the interviews

The interviews were summarised in electronic format. Some of the general concerns emerging from across the interviews are described below, in the form of questions.

We addressed what further research might be needed during a later workshop (the 'orientation workshop') at which the interview results and the findings from other research were combined and explored together.

What form will social order and governance take?

What is the role of business in sustainable development?

What will be expected of leaders?

What are the consequences of being seen as 'big business'?

What will people be seeking from work, and what can organisations offer them?

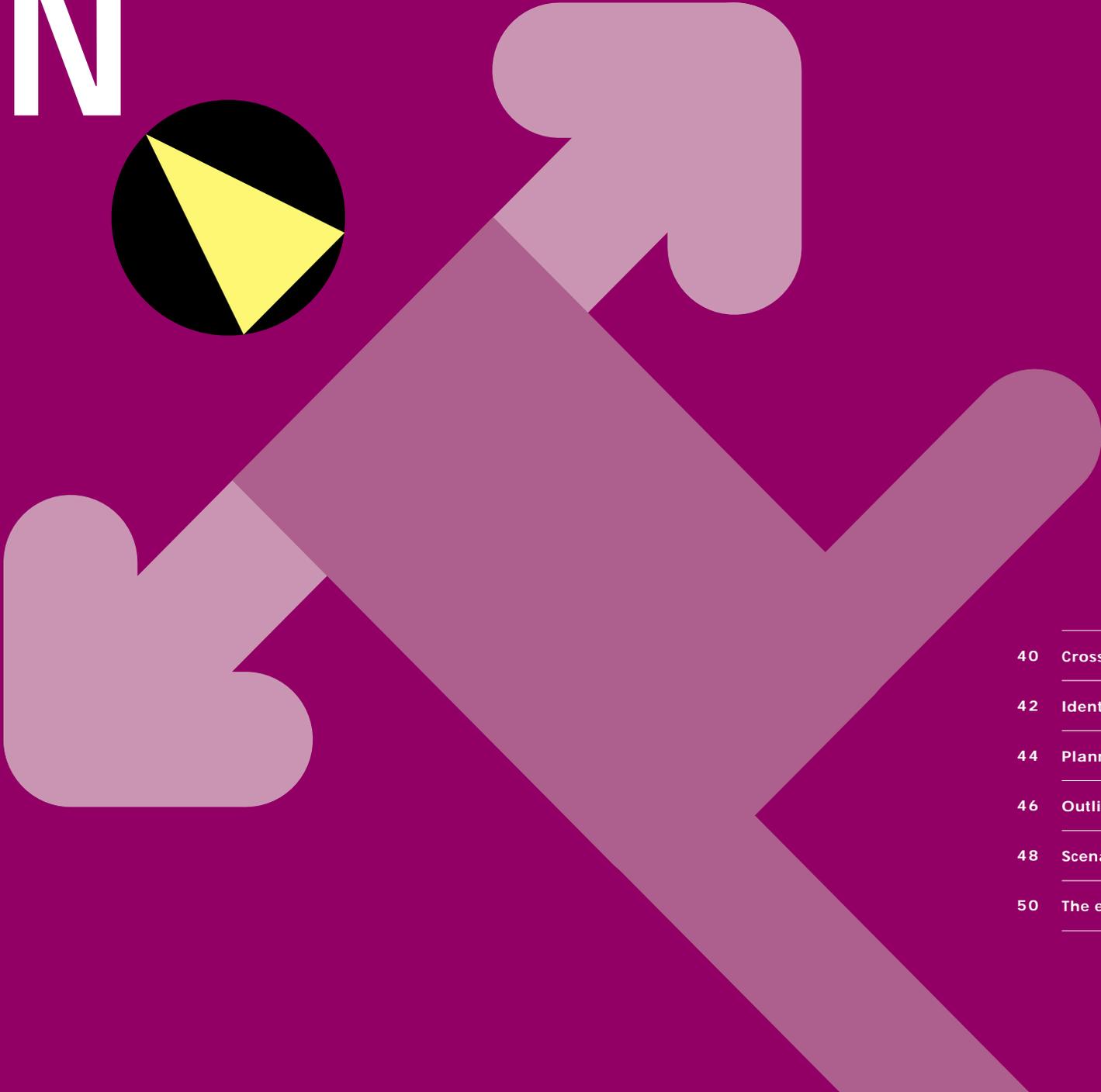
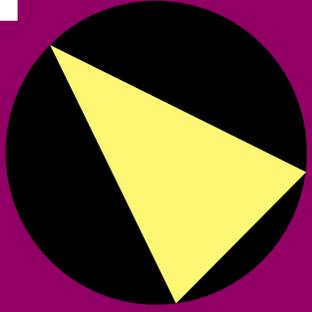
What influence will the 'US model' have on the rest of the world?

What technology breakthroughs will there be, and how will they change the way we live?

# Answers



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## Crossing frontiers

The cross-fertilisation of ideas is essential to the scenario-building process. It can occur both formally and informally, but both approaches must involve a high level of active engagement with the ideas of others. This helps to reveal blind spots and widen perspectives.

Informally, the cross-fertilisation of ideas frequently just happens in discussions. Often people come into scenario processes with ideas they want to champion and are anxious to talk about. They may, for example, believe that their own discipline offers the most value in framing the future. Scenario building can harness these passions, providing opportunities for people to express their views.

Cross-fertilisation can be more formally structured by means of a cycle of research, synthesis, presentation of ideas and engagement, reference back to the questions at hand, reframing and further research. Rather than just passively accepting answers provided by specialists, scenario builders benefit most from a combination of reading (to deepen understanding), hearing presentations (to inform and stimulate ideas) and conversation.

Cross-fertilisation works best if the scenario builders are a diverse group of individuals who are curious and open to new ideas. Sufficient time should be allowed for them to develop a rapport with each other and work through any alternative perspectives.

- ● Gathering information across disciplines is essential for developing scenarios that challenge conventional wisdom and address blind spots.

● a.m. ● P.m. ● Evening

### Programme

#### Day 1

- Pre-workshop briefing ●
- Purpose and progress ●
- Questions for Shell ●
- New research ●

#### Day 2

- Research: What matters? ●
- Presentations and interaction ●
- Social evening ●

#### Day 3

- Research: What matters? ●
- Presentations and interaction ●

#### Day 4

- Current reality and emerging themes ●

#### Day 5

- Research priorities ●
- Post-workshop debrief ●
- Core team celebration ●

## Orientation workshop

The orientation workshop was the first major workshop of the global scenario-building process. It was intended to help deepen our understanding of the issues under investigation.

In the workshop, all the research material produced so far was brought together and synthesised, including the results of interviews with the Group's decision makers, descriptions of the strategies of the Group and the main Businesses, and the broader research. This process produced a new set of critical questions about the future that were compiled into themes and set the direction for the next stage of research.

There were about 30 people present, comprising the scenario builders—the full team—aided by a number of specialists. We discussed science and technology, social change, economics, politics, globalisation and governance, energy markets, connectivity, sustainable development and business design.

Members of the core team presented their findings on their particular area of research, taking care to structure their presentations to encourage interaction. These presentations drew particular attention to the critical uncertainties they had found in their work.



## Identifying themes

Merging and refining the initial research material produces a smaller set of key research themes. Whereas earlier research may be organised along more conventional lines within particular disciplines, these more focused research themes are likely to be cross-discipline and should be clearly relevant to the concerns of the primary recipients.

Once these themes are identified they can be developed and deepened by the core team members. Much of this work is to examine how the themes will play out in the future, and so it is important to identify what are the critical uncertainties contained within each theme. Questions to further this might include: What will be the forces that drive the theme and how do they relate? What about these driving forces is relatively certain and what is most uncertain? Of the certainties, what is likely to be their outcome by the end of the scenario period? For each of the uncertainties, what are the extreme outcomes? And which are most likely to be the most challenging and relevant?

Each group working on a theme should involve people with diverse disciplines and perspectives, so as to ensure that thinking does not revert to a single discipline or conventional approach. Workshops or interviews involving relevant specialists and unconventional thinkers may be arranged, so as to introduce analysis and fresh ideas. As with earlier research work, this work is synthesised and reported to the scenario builders in a workshop where it is discussed and debated.

However, although this process is intended to produce material for building the scenarios, it is also intended to enable team members to develop a deeper understanding of the topics they are exploring—and, perhaps, gain significant insights into their business and working environment.

- ● Identifying and developing themes in their research helps the scenario-building team to converge on their most important questions about the future.



## Deepening scenario themes

Four small multi-disciplinary teams ran at least one workshop on each theme emerging from the orientation workshop. All core team members were invited to participate along with a variety of specialists. The aim

was to deepen our understanding of the key questions within each theme, identifying which were the most importantly uncertain and what directions they might take.

### Global frameworks

In the next ten years, social and political responses to globalisation will become clearer. How will they challenge globalisation and what will the reaction be? How do people, as individuals or collectively, view the international system? How do governments and inter-governmental organisations build legitimacy and act effectively in the international system? What is the role of regulation in the operation of global markets?

### States and markets

States and markets are natural complements, and the mixed economy is an enduring 20th century legacy. But how will the composition change? How will states govern markets—or will markets discipline states?

### Corporation of the future

How will competition shape innovation and vice versa? Will innovation be incremental or monumental? How will contractual relationships be affected, particularly as regards flexibility?

### Energy

Themes explored included the impact of environmental concerns on fossil fuel demand and on the development of new and unconventional fossil fuel sources, as well as the future of renewables, oil price behaviour, and the link between gas and oil prices.



## Planning a route

A scenario structure comprises one or more focal questions, a branching point with two or more branches for each critical uncertainty and, as a result, scenario outlines.

- *The focal question:* This provides a broad definition of the major challenge(s) that the primary recipients of the scenarios are likely to face in the future. It is framed in a way that allows exploration of those critical uncertainties that the team's research has identified as being important to the primary recipients.
- *Branches:* These are the different directions in which a critical uncertainty could play out. Each branch will provide a different answer to the focal question. Each answer presents myriad implications that fundamentally change the business environment. Each branch therefore leads to further possible branches, each of which, in turn, leads to further branches and further implications.
- *Scenario outline:* This is the story that is created by selecting a certain path to follow among the different branches of uncertainty.

The aim of building scenarios is not to try to create consensus, but to recognise and actively involve different points of view. For this reason, the idea of probability is not helpful in developing the elements of the scenarios and the scenario stories themselves, since probabilities are designed to collapse differences into a single quantifiable and comparable value. Challenges for the recipients of the scenarios are more likely to lie in an improbable turn of events, or in issues that are well recognised but about which there are major differences of opinion.

- ● Moving from research to scenarios requires the development of a scenario structure.

● a.m. ● P.m. ● Evening

### Programme

#### Day 1

- Pre-workshop briefing ●
- Themes gallery ●
- Progress and purpose ●

#### Day 2

- Themes and synthesis ●
- The power of stories ●

#### Day 3

- Themes and synthesis ●
- Possible scenarios ●

#### Day 4

- Selected outlines developed ●
- Presentation to panel ●
- Celebration ●

#### Day 5

- Critique of work so far ●
- Clarification of branches ●
- Work programme ●
- Post-workshop debrief ●

## The scenario-building workshop

The Shell 2001 Global Scenarios building workshop was held in February 2001. Its objective was to define the scenario structure, and develop a plan for further work to underpin the scenarios. The workshop was held in the Sports Hall at Shell Centre, and the space was divided to incorporate an open area for plenary discussions and separate rooms for scenario development. In the open area, wall space was used to exhibit material on each of the research topics to be explored at the workshop, including quotations, diagrams and photographs. The scenario builders were sent papers on each of these topics in advance of the workshop.

After a session on the purpose and progress of the scenario-building process, which included a review and discussion of the important questions for Shell, the themes were presented and discussed. Then the workshop participants were split into groups to explore ways in which these combined themes might play out—that is, to start to create possible scenarios. Each group took a different approach to developing a scenario structure and was facilitated by an experienced scenario practitioner. A variety of possible scenarios emerged.

Some of the ideas were combined and further developed by two separate groups, and one group went to work on clarifying the branching points. The results were presented to a panel of four executives from the Group who had not been involved in the workshop, and who provided constructive criticism on originality, insights and plausibility.

## Outlining scenarios

Developing the scenario structure is an iterative process, revolving around the focal question, branches and scenario outlines. The structure should reveal clear tensions within and between the scenarios that have strong implications for the primary recipients. There are a number of approaches:

- **Deductive:** Pick out two critical uncertainties and describe the extremes of each on a matrix, then develop storylines for paths into each quadrant of the matrix and descriptions of how the world could shift from one quadrant to another.
- **Inductive:** Start with a number of different chains of events (no less than three events in each chain) and construct a plausible storyline for each chain. From this, a description of how they came about—a scenario structure—can be induced, which will lead to alternative scenarios and these, in turn, will help frame a focal question.

If you know the future you want to describe:

- **Normative:** Start with that scenario or set of characteristics at the end of the time horizon, and work backwards to see what it would take to get there and whether it is plausible. In this way, the critical uncertainties are highlighted and can be taken through into the definition of branches and the focal question.

Whichever approach is taken, the scenarios will not evolve in an organised, linear fashion. Some aspects of the stories will not work because they are inconsistent with other aspects of the scenarios, irrelevant or too vague; these will need to be discarded or reworked.

At this stage, the scenario editor starts to play a significant role, incorporating material from the other core team members into the scenarios under the guidance of the director.

- • Once the scenario structure has been decided, the scenarios can be outlined in more detail, drawing on the work done throughout the scenario building.

## Possible scenarios

At the scenario-building workshop, after the themes had been presented and discussed, three groups were formed to explore possible scenarios.

- One group came up with the focal question 'Who will have the power to shape developments?' and branches exploring the uncertainties surrounding a global regime and diffused power. They developed two scenarios investigating the global commons, patterns of economic development, political participation and concerns about inequality.

- Another group identified the focal question as 'How will tensions be resolved?' They considered how different social frictions might manifest themselves in different cultures, including the nature of those frictions, perceptions of them within those cultures and how they might be resolved. The critical uncertainties they identified were whether solutions would be imposed or bought into, and whether the responses would be straightforward and familiar, or complicated and unprecedented.

- The third group came up with three scenarios. The uncertainties explored in the three were the role of the US, global governance, inequality, regulation, economic slump, social attitudes, energy technology, OPEC and the status of big companies.

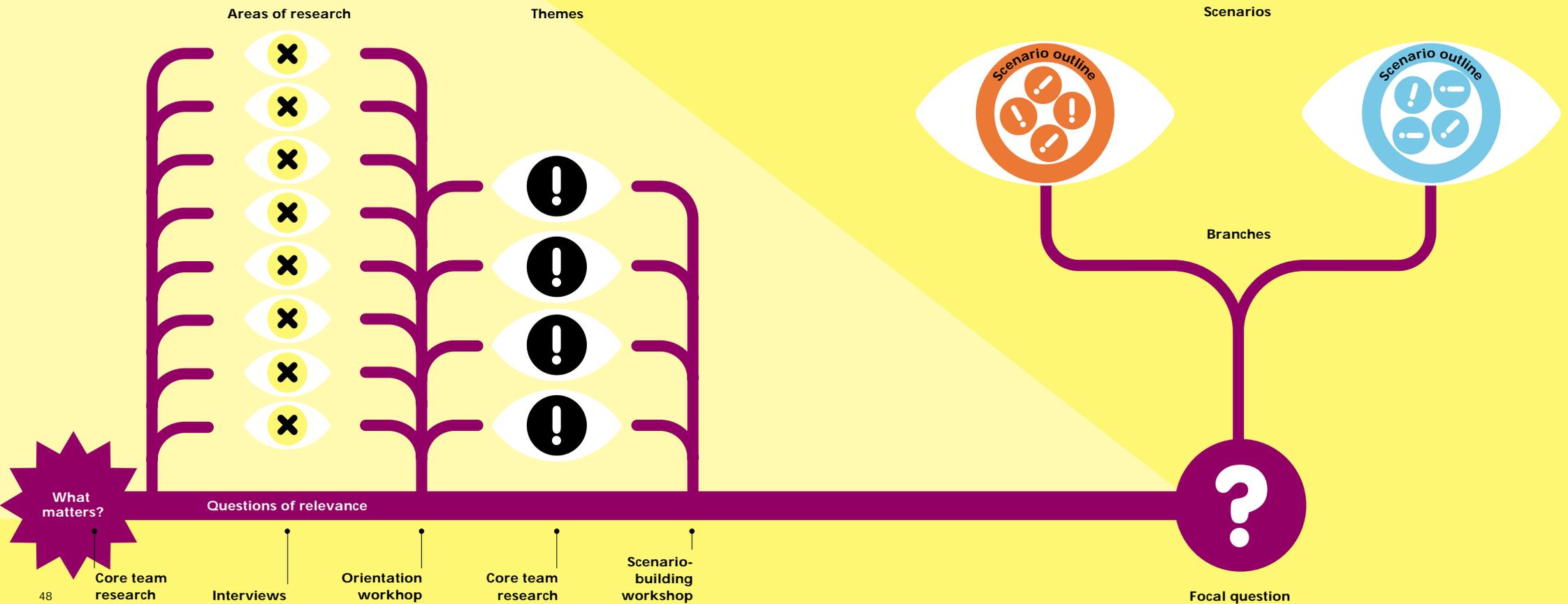
The team combined this work on possible scenarios into a single scenario structure with two rudimentary scenarios, which eventually became *Prism* and *Business Class*.

Working back from this material, the focal question of Shell's 2001 Global Scenarios was formed: How will people and societies shape liberalisation, globalisation and technology in a more connected world?

## Scenario building

Building global scenarios is a complex task; the questions of relevance are hard to define. Reflecting this, global scenario projects at Shell involve many people and require a number of

iterations. For smaller, more focused projects, the same approach is followed but using less time and fewer resources, and with less emphasis on exploring different areas of research.





## The emotional journey

- ● Building scenarios may confront us with a variety of different emotional challenges.

Those embarking on a scenario-building process must be prepared to redraw, or at least thoroughly review, their mental maps of the world, questioning their assumptions and challenging comfortable perceptions. However willing individuals are to follow this route, it can leave people feeling untethered and insecure.

Even as the process demands the abandonment of familiar notions, it also requires that participants argue for concepts they think should be included. All ideas carry the same initial value in building scenarios, and organisational hierarchy should not mean individuals feel they can pull rank.

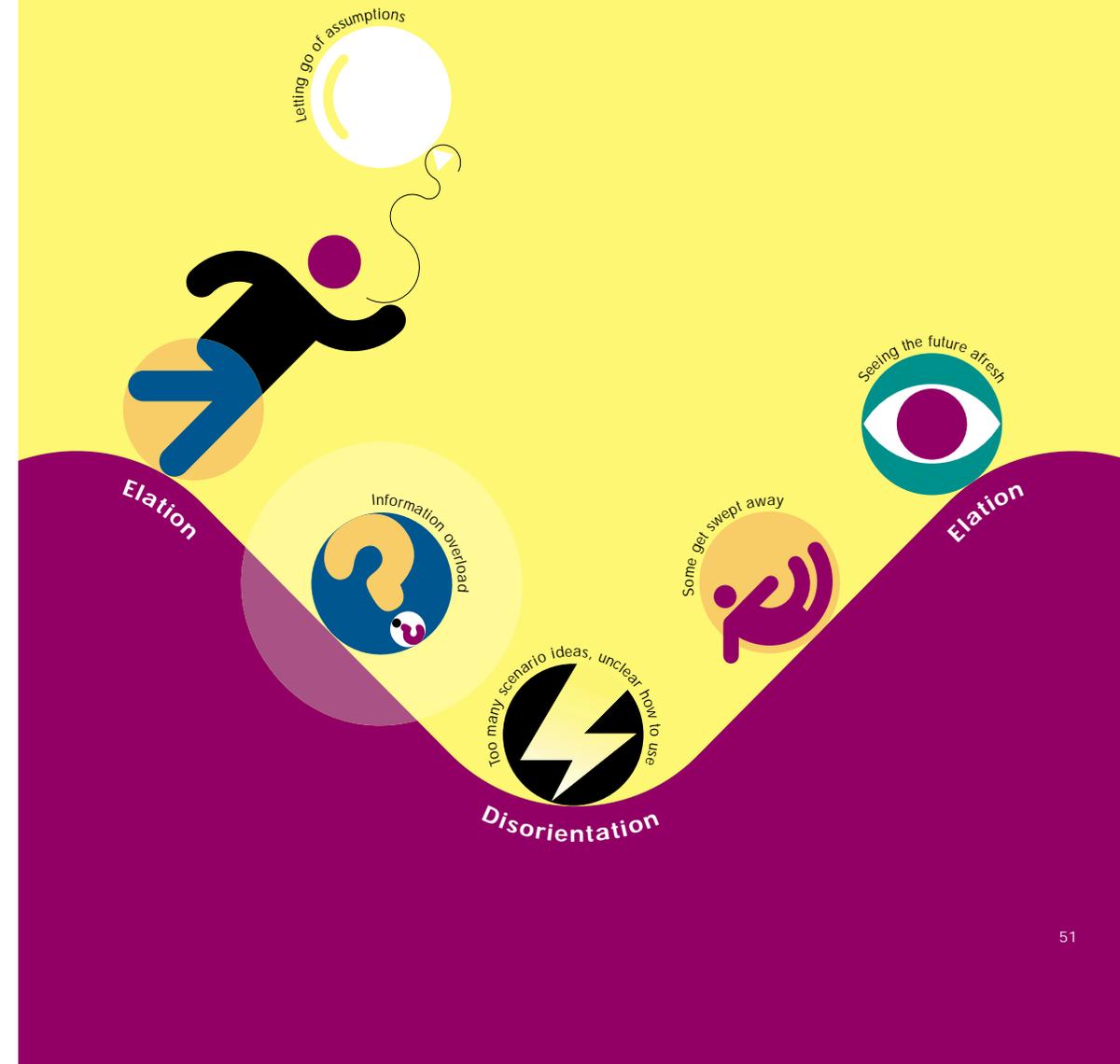
It can be a strange experience working within a process that seeks to include many different points of view rather than to pursue consensus. Some have described this as feeling as if there is no firm goal, and therefore no real sense of progress. Added to this, the improvisational nature of scenario work may lead to feelings of frustration and perhaps anxiety, even for those with experience. From the midst of the process, it may seem at times as though the scenarios will never come together.

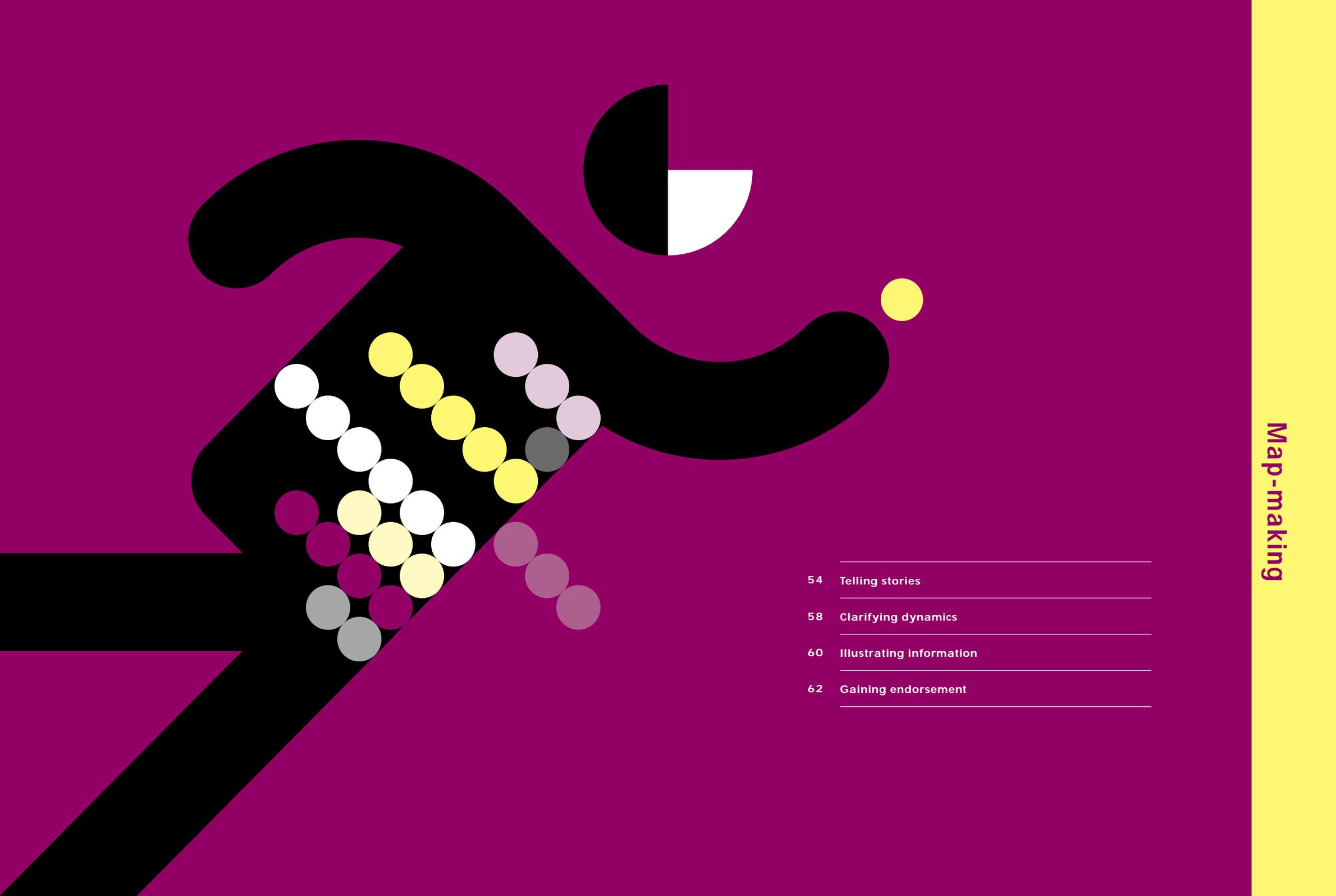
These feelings usually become easier to cope with as familiarity with the process increases. It can help to have people with previous experience in scenario work on the core team, or at least to have skilled scenario practitioners available to 'coach' the core team members. It can also be beneficial if the director has significant prior experience and can provide leadership in this regard.

## A map of the emotional journey

Experienced scenario practitioners agree that the mood of a group involved in building scenarios

usually follows a particular pattern, although, obviously, individuals may respond differently.





54	Telling stories	_____
58	Clarifying dynamics	_____
60	Illustrating information	_____
62	Gaining endorsement	_____

## Telling stories

Team members provide material and the editor, in consultation with the director, incorporates it into the scenario structure to create the scenarios. Drafts of the scenarios are periodically circulated to the core team for comment, mainly to check on internal consistency.

Sometimes, future events or challenges will be suggested that could arise in any of the scenarios. In these cases, a choice must be made about which scenario will include that information. The decision must be based on both the story's own logic and what the audience will find most challenging.

Once the structure and themes of each scenario are established, then there is room for the team, or the editor of the team, to work on telling the story of the scenarios in a creative and interesting fashion. Like all writing projects this is partly an intuitive process, but it is also a question of craft.

Sometimes it can be useful to arrange the stories around an important theme of the scenarios. This will highlight that concept and also may provide a helpful framework for storytelling, providing a structure for the narrative and for graphic elements.

It may be the case that one of the scenarios is much more difficult to communicate than the other. This may be because of problems with the internal structure or description of the scenario, but it may also be because it is further from the current reality of the scenario builders and recipients, and so harder for them to align with their existing frame of reference.

- ● The scenarios must form a coherent, relevant and communicable set of stories.

## 'Geographies of Connection'

An important theme of Shell's 2001 Global Scenarios is 'connectivity'—the interplay of the different and developing ways people connect with each

other. To help us explore this in the scenarios, we structured our thinking around four 'Geographies of Connection'.



### Circles

Innumerable circles of influence and interconnectedness shape the complex identities and activities of individuals. Some circles are open, global and fluid (NGOs, for example), while others are more local, selective and permanent (such as families).



### Nations

Some argue that the traditional functions of nation states are becoming less important in the new global economy, yet it is not 'the end of history' for nations. For some, national identity is one of many forms of individual identity; for others, national identity is being actively forged.



### Heartland and edges

Within many nations, a heartland—with more traditional values and rooted culture—is encircled by outward-oriented cities populated by people who often have very different values and lifestyles. This geography also applies to companies and individuals, who may experience conflict between the pull of traditional values and the imperatives of other identities or the need to change.



### Earth

For the first time in human history, we must also take account of the many interconnected systems of the 'whole' earth.

As soon as the stories are ready, they should be presented to the scenario builders and tested for plausibility, challenge and relevance. This process can help to organise what further work is needed. The emphasis at this stage should be on clarifying the scenarios, rather than adding new ideas.

The team needs to make sure that the scenarios raise issues that are relevant to their recipients and challenge them to think about the future in a constructive and helpful fashion. But this does not mean that they must provide very detailed descriptions of events and their timing. Indeed, such precise details can seem misleadingly like predictions.

Scenarios are intended to describe a context. They are not meant to instruct their users on how to respond to different circumstances, but to provide sufficient information for the recipients to imagine being in a particular future, and to think about how they might behave in it.

Are the scenarios communicable? If recipients who have not worked on building the scenarios find them difficult to understand, then it is extremely important to examine why this is: it might simply be a matter of presentation or, more seriously, it might indicate a problem in the logic of the stories themselves.

● a.m. ● P.m. ● Evening



#### Programme

- Scenario structure and comment
- *Business Class* and comment
- *Prism* and comment
- What's missing? Implications for Businesses
- Implications for the Group
- Communication issues

### Affirmation workshop

The director presented the 2001 scenarios to the full team for collective review at the affirmation workshop in late March.

The scenario builders examined the plausibility of the scenarios, individually and as a set. They discussed the basis for the differences between the scenarios and raised questions about what was, or was not, included in each one. They also explored the internal logic of each storyline. They tested the challenge and relevance of the scenarios by discussing what they might mean for particular Businesses, and for the Group as a whole.

The names of the scenarios were also discussed at length—in particular how the names might be interpreted in a range of businesses, languages and cultures.

## Clarifying dynamics

The situations related in a scenario are usually intended as examples of a range of possible events, rather than being a conclusive description of what will happen. It is important that recipients understand the dynamics underlying those types of events, and the implications of these dynamics for how the business environment may change.

Obviously, it is important to include all possible dynamics, but those that are most important to the primary recipients will probably start to emerge at this stage of building the scenarios. They should become the focus of further elaboration, and the team should work, in particular, on the nature of the relationships between these dynamics and their likely implications. For example, what difference does it make to the world economy if OECD countries go into recession, or if major emerging economies go into recession? Can one happen without the other also happening?

Techniques such as economic modelling may be useful in clarifying the dynamics, by highlighting potential directions they might take, as well as second- and third-order effects. This approach can be used in such fields as demography, economics, energy supply and demand, and price formation in oil and gas markets. However, it is important to remember that in scenario building, these models are regarded as suggesting possibilities, elements which will interact and change with the other dynamic factors of a scenario, rather than as providing forecasts. There are many ways to communicate these dynamics in addition to describing them in the narrative—for example, as diagrams and tables.

- ● The dynamics underlying the scenarios are more important than the actual events they describe.

## Modelling scenarios

For the Global Scenarios, models were in place for exploring some of the relevant dynamics before the scenario building started. The team developed some of these models themselves, while others were obtained from consulting firms or academic institutions.

For example, the dynamics of emerging markets and the potential growth of, and relationships between, economies were explored. There were already many implicit assumptions about these dynamics within the Group, but a consulting firm with a specialised global economic model was commissioned to explore the dynamics of relevance to the scenarios.

They ran their model with particular attention to the question of how certain economic shocks might be transmitted through regional and global economies, and through which channels, for example, trade and risk-premia.

Examples of the shocks they simulated included simultaneous crashes in India and China, a spike in oil prices and acceleration in productivity growth rates. Different potential patterns of growth emerged. To this quantitative work, qualitative analysis on the possible effects and outcomes of volatility, urbanisation, and other long-term developments was added.

## Illustrating information

In addition to the written and spoken descriptions of the scenarios, graphic elements relating to different aspects of the stories can be a powerful tool for communicating the ideas they contain.

Use of graphics can be particularly helpful if the intention is to share the scenarios beyond the scenario-building team. First impressions of scenarios can be confusing, particularly if there are more than two scenarios. The use of colour and icons can help to distinguish different scenarios from each other, while graphic elements can highlight crucial features of each story.

Using graphics can also help individuals within the team to gain greater understanding of their own scenarios. Even the process of selecting visual imagery is a valuable exercise for team members, since it can prompt them to be clear about what they want the scenarios to express.

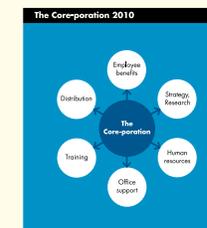
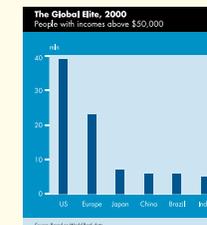
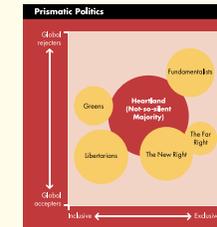
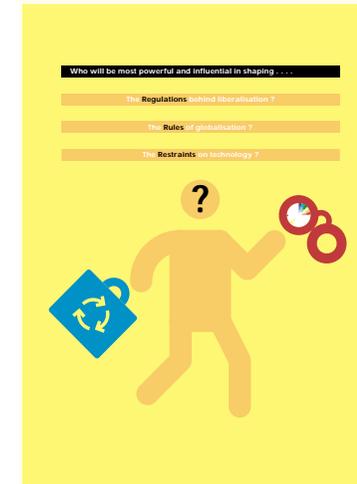
Images can also help to clarify complex aspects of the scenarios: for example, a simple diagram can provide a quick overview of how a scenario evolves over time. Video, photographs, diagrams, graphs and tables can all help people to develop a better, and sometimes more vivid, sense of what it might be like to live in a particular future.

- ● Once the stories are finalised, work on their presentation can begin, including the development of graphic elements.

## Illustrations for *People and Connections*

Illustrations are particularly useful for helping people to trace changes over time, to compare

and contrast the scenarios and also to summarise complex information.



## Gaining endorsement

Once the scenarios are substantially developed, the core team can test them by making presentations to the primary recipients. Such presentations offer opportunities for refining details of the scenarios and for seeing whether they are cohesive and compelling 'stories' that captivate the imagination.

But care should be taken: if scenarios are presented as predictions or as 'the only alternatives', then the conversation is likely to become focused on details of the scenarios, rather than their underlying dynamics and their potential implications. For example, in the 2001 Global Scenarios, *Prism* describes how people look beyond efficiency and global homogeneity to their roots, values and families. These dynamics may create a diversity of global cultural values and practices that ground the future in 'multiple modernities'—and that's what the scenario describes. However, alternatively or, indeed, simultaneously, such dynamics might equally feed prejudice and cultural resentment, and result in a nationalist backlash.

These presentations may be included as a deliberate part of the process of scenario development, enabling the team to gather contributions from a much wider range of participants. If this approach is preferred, the team needs to strike a balance between convincing audiences of the value of their work, and leaving room for further material to be incorporated.

- ● Presenting the scenarios to their primary recipients is a way of testing their substance and may result in further refinement.

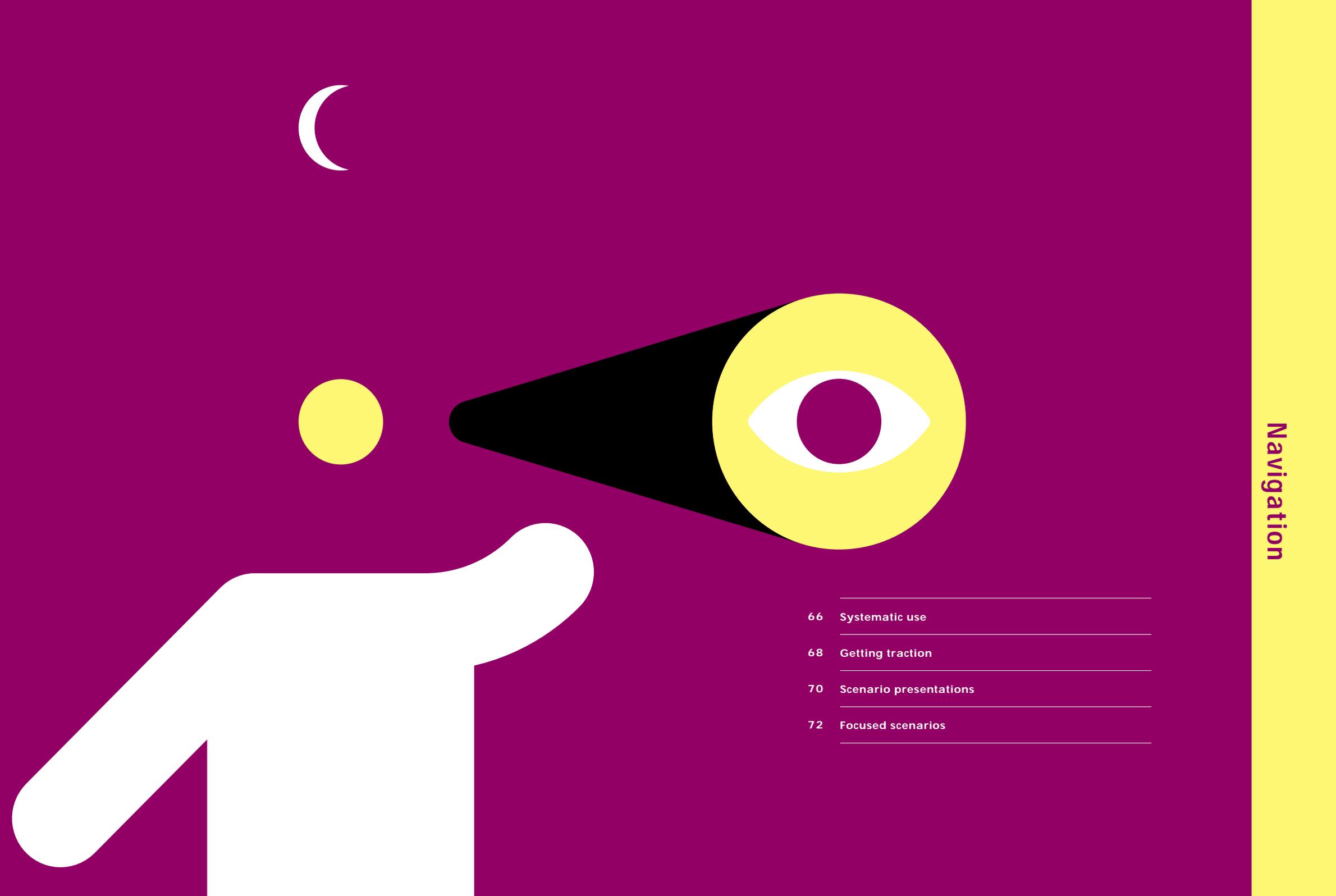
## Endorsement

The director of the Shell 2001 Global Scenarios project consulted regularly with the Group's Chairman and others in the CMD throughout the building process. In addition, as the scenario work progressed, members of the full team shared ideas with their respective Businesses and gathered feedback on those ideas. Therefore, when they were finally presented, the scenarios were not completely new to their primary recipients.

The director presented the scenarios to the CMD in April, and the CMD discussed their implications for the Group. The CMD found the scenarios to be credible and challenging, and suggested that the scenarios be employed in the process of developing the 2001 Group's plans. They also discussed the need for more specific details to be included in the scenarios, to improve their relevance to the individual Businesses.

The scenarios were also presented, on request, at some high-level business- and regional-specific meetings to help clarify urgent decisions. These meetings were a source of valuable feedback on the scenarios, which were still being deepened.

After approval by the Chairman and CMD, preparations began to present the scenarios to the top 300 leaders of the Group, at Shell Business Week. This presentation would be the final stage of endorsement, after which the scenarios would be published in full and circulated within the organisation, to be used in strategy development throughout the Group.



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## Systematic use

Scenarios are particularly valuable when there is 'tunnel vision' or 'group think' within a team or an organisation, or when there is a need to realign thinking, for example, following a change in leadership. They are also helpful when a new challenge emerges that is not well understood, such as a technological breakthrough, or there is a desire to understand and manage the risks inherent in a particular strategy or plan, for example, when an organisation is changing direction.

However, scenarios are most useful if they are used systematically over a period of time—to craft the ongoing strategy of an organisation, to challenge assumptions, and test plans and strategies—rather than just once in response to a particular situation.

If they are to be used systematically, then scenarios must be securely rooted in the current reality of the relevant decision makers, embodying the challenges they face and addressing their blind spots. However, scenarios that are not rooted can still be informative and thought-provoking, and can form a basis for conversation on subjects of importance. Such scenarios can still promote an understanding of relevant and complex issues, and so can indirectly lead to better decisions.

The scenario builders, particularly the core team, are responsible for communicating the scenarios accurately and effectively, and helping users to apply them so that they can appreciate emerging risks that their organisation faces.

- ● Scenarios help create a common language that can be used to discuss complex matters succinctly and shape strategic conversation.

## Systematic application

The 2001 Global Scenarios, *Business Class* and *Prism*, were used as part of Shell's strategic review process in 2001, to test the robustness of plans and strategies and help make risks more transparent and manageable.

Shell Businesses use the scenarios as a basis for testing the robustness of strategies and plans. In the process of testing, strategy teams and business leaders imagine themselves in each scenario. This helps them to surface the assumptions underpinning their business strategy, discuss the challenges presented by the scenarios and surface any key dilemmas.

Global scenarios are a significant part of Shell's planning system, but the more focused application of scenario methodology is also increasingly important for setting local strategy and assessing projects or decisions.

## Getting traction

The primary recipients of the scenarios may use them by choice or may be required to do so by their leaders. Either way, it is critical that individuals can relate the scenarios to their own views. It will help them to understand how they see the future, become aware of their own assumptions and those of others, and begin to see how the scenarios challenge their way of thinking.

Often, individuals hold quite complex views about the future, but they may be more or less aware of the nature of their beliefs. When introducing a group to a set of scenarios, it can be a useful first step to help them to make explicit their own assumptions about what the future looks like. This will help them to use the scenarios more effectively.

There are a number of exercises for doing this, which can be held either before or during scenario-application workshops. For example, it can really help if workshop participants can identify their key question about the future. Even just the process of thinking about this can help participants to focus on the aspects of the scenarios that are most relevant to them.

Alternatively, before the participants engage with the scenarios ask them to write down which characteristics of the future they believe are most important to the success of their endeavour, and what they believe will be the greatest challenges to it. Another exercise consists in asking the scenario recipients to describe what they believe the future holds, and then to ask the group to vote on the likelihood of each of the future developments that are raised.

● ● Scenarios are unlikely to be effective if individuals cannot relate personally to the challenges they embody.



## Preparation for scenario application

Before a scenario-application workshop, we ask the participants to familiarise themselves with the

scenario material. Below are three examples of the kinds of exercises we use.

### 1 Using interviews

Before one workshop, we asked the participants to interview people, both within and external to Shell, about the subject we would be discussing—in this case, technology. Our intention in doing this was to begin to broaden their perspective, helping them to start looking beyond the familiar opinions of their everyday environment. We discussed the results at the workshop.

### 2 Collecting evidence

To bring the futures depicted in the scenarios closer to the real world, ask the participants to read the scenarios and then collect evidence from the media that shows that one or other scenario is currently developing.

### 3 Imagining daily life

Sometimes we ask the workshop participants to try to imagine living in each of the scenarios. What would this mean for their career? Where would they want to live? How would the world of that future challenge or fit with their values?

## Scenario presentations

There are many ways to communicate scenarios. The simplest method is simply to relate the story of each scenario. However, this still deserves careful thought: storytelling is an art in itself—and oral storytelling demands particular skills. Presenters might find it useful to think about what makes a good spoken narrative—for example, a plot that is easy to follow, the use of suspense and release from suspense, elements of humour, and so on. An important part of communicating scenarios is to connect to the audience's own frame of reference. This is especially true when you are working with global scenarios, where it may be necessary to add locally relevant material.

Obviously, in an oral presentation, it is also crucial to employ visual images that work with the narrative, both to capture the attention of the audience and to explain more complex aspects of the story being related.

Less obvious is the importance of silence. Pausing will allow the audience to process what they have heard and reflect on how they feel about it.

Other methods for vividly communicating a story may include using theatrical or other performance techniques. A short sketch or scene that brings to life a moment in a scenario, although brief, can provide a lucid and compelling snapshot of a scenario story. Using video can offer a storyteller even more creative freedom.

Of course, if there is only a limited amount of time available, then it is important to select the aspects of the scenarios that your audience will find most challenging, and trade-offs may have to be made.

If the workshop participants are encouraged to be an active audience (asking questions, doing exercises, and so on) throughout the presentation, this will help them to connect to the ideas in the scenarios.

- ● Communicating scenarios is about enabling people to visualise and experience the scenarios.

## Scenarios to strategy

### Programme

#### Pre-work

Read Global Scenarios  
Headline future events

#### Day 1

Presentation of current strategy  
Key underlying assumptions  
Global Scenarios overview

#### Day 2

*Business Class* presentation  
– Key uncertainties for strategy  
*Prism* presentation  
– Key uncertainties for strategy  
Initial options for action

A workshop was designed to help Shell's Oil Products (OP) Consultancy think about what future portfolio of offerings and services might be relevant to their clients: What action would the OP Businesses need to take to be successful in the kinds of worlds described in *Prism* and *Business Class*?

As preparation for the workshop, the members of the consultancy were asked to read a summary of Shell's 2001 Global Scenarios and create a list of possible future events, describing them in the form of newspaper headlines.

At the start of the workshop, the participants created a timeline of relevant past events—things that had occurred in the external environment that had affected their and their clients' business. It was hoped that by thinking together about past contextual changes the participants might develop a shared base from which to explore future uncertainties.

Then they explored existing plans for the future of the consultancy, clarifying the current strategic direction and the assumptions that underpinned it. After this, to start them thinking about the dynamics of change, they discussed possible future events and added some of these to the timeline.

The group was shown a video overview of the 2001 Global Scenarios, followed by more detailed presentations of each scenario. The participants divided up into smaller groups to identify the key uncertainties that had been raised for their strategy by each scenario. In addition to more straightforward discussions, some participants role-played their own clients so as to enhance their understanding of their perspective. By the end of the workshop, the group had created a list of initial options for action, and noted gaps and problems for further discussion and development.

This process is often iterative: a group is likely to return to the process to check out aspects and elements of new strategies as they evolve.

## Focused scenarios

- ● A set of scenarios can be made more relevant for particular users.

If the scenarios you have created do not cover the major challenges that a particular group of users is likely to face, then they may need to be augmented.

The process may follow two possible directions:

- It may be that the focal question and branching points of the original scenario structure will still prove useful to the users, but they want to explore factors that are not explored in the broader scenarios, such as issues specific to particular countries or business sectors. If this is the case, then it will only be necessary to add additional uncertainties or explore the existing ones in more detail. It may also be possible to add an additional scenario, if necessary.
- Alternatively, the scenario exercise may raise a different focal question and branching points. If so, the existing scenarios may be used to provide information for a new scenario-building process.

It is important, before beginning either process, to develop a clear idea of the current strategic positioning of the business and its aspirations in the long and short term. The group can return to this throughout the process, helping them to ensure that what they create remains relevant.

## Augmenting the Global Scenarios for Shell Businesses

When we create focused scenarios for individual Shell Businesses, we usually build on the Global Scenarios: these already contain material relevant to Shell's Businesses and also provide a common language that facilitates communication between the different parts of the Group.

What follows is a description of a typical process for the creation of focused scenarios.

We start off with a presentation of the Global Scenarios, making sure that the participants have a good understanding of each story: core team members are on hand to answer questions. Then we ask the participants what factors important to their Business need to be added to the scenarios.

Once agreement has been reached about the key additional factors, the participants sort them into two groups: those that are likely to remain similar and predictable across both scenarios, and those the development of which is uncertain. They explore how the uncertain factors might evolve in each of the scenarios, investigating the different possible directions they might take and their likely outcomes. Further research on these factors may be needed before they can be declared predictable or uncertain.

Finally, they explore how these factors, the uncertain and more predictable, might combine and play out with the existing framework of the two scenarios. The resulting scenarios will be focused around the particular concerns of the participants' Business.

Examples of focused scenarios developed using Shell's 2001 Global Scenarios include country scenarios for Latin America and China, and business scenarios for Shell—for example, for Liquefied Natural Gas, Chemicals and Human Resources.

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## Understanding implications

Examining the strategic implications of the developments described in a set of scenarios is not a matter of producing a whole new organisational strategy, like a rabbit from a hat. In fact, this would be impossible—scenarios are not meant to be read as predictions of the future. They are intended to help users to appreciate the different dimensions and nature of uncertainty in the business environment, identify new risks and be better equipped to create a robust portfolio of activities.

It may be that for certain aspects of your business, whichever scenario might occur, whatever events the future may hold, the implications of a particular strategy seem certain to remain the same. This may suggest to decision makers that there is a set of actions that they can—perhaps, should—implement fairly immediately and securely. The decision to move on other strategic options, however, will be contingent on how they play out in the different scenarios, and that, of course, depends on which way the external environment actually develops.

This is, obviously, a long-term process, consisting in monitoring the external world for indications that events are moving in a particular direction. Decision makers can use their scenarios almost like a map to structure their discussions, guiding their thinking about the future. Scenarios allow them to keep different possibilities in mind without being overtaken by the overwhelming nature of uncertainty.

- ● Once a common understanding of the scenarios is reached, this provides a basis for thinking about the implications of future strategy.

## Scenarios as a method of testing implications

The more focused the scenarios—around a business, industry, or organisation—the more apparent their strategic implications will be. We have found that global scenarios on their own seldom raise comprehensible strategic implications: for a helpful strategic conversation to be possible, the scenarios will need to be augmented with relevant detail.

What follows describes one way to use scenarios to test out different strategic options.

In a workshop, divide the participants into small groups and allocate a scenario to each group. Ask each group to make a list of the strategic options that they think would work well in their scenario and to select the most effective.

Bring the participants back together and examine how each of the strategic options plays out in each of the scenarios. Some of those options will work well across all of the scenarios—they are what we call robust, and will probably form a basis for strategic action. Others will be contingent on events, but some discussion may elicit ways in which they could be adjusted to help them become more robust. It may also be possible to break up strategic options into different stages: that is, to follow a strategy up to a certain point and then hold back until the direction of external events becomes clear.

We have found this process of examining implications to be particularly useful in situations where there are very different points of view involved, for example, where two different businesses based in different parts of the world are trying to identify a joint strategic direction.

## Interpreting signals

One of the purposes of building and using scenarios is to help raise people's awareness of what is going on in the world and their understanding of how they interpret what they see. This is intended to help prepare them to respond faster and more effectively to changes in their business environment.

Once they have understood a set of scenarios, people can begin to work with signals. That is, they can scan the environment for indications that the dynamics that they have used to create their scenarios, and that therefore underpin their decisions or strategy, are actually happening. This will also help them to see when other dynamics appear, although they might not have discussed them. The Internet is an ideal tool for scanning, but TV and radio, newspapers and magazines are all valuable. For longer-term scenarios, books and academic papers are also useful sources. Another way of enhancing people's awareness is to ask them to interpret the signals that others have collected and work out what these mean to them.

Watching for signals means that rather than being forced to react to unexpected events after they have happened, decision makers can begin to anticipate the development of situations. By discussing the signals they observe or by trying to understand other people's signals, they can begin to understand the different interpretations that may be placed on the same event, and this can lead them to understand more deeply the assumptions they are making about the future.

Discussing signals is a useful first step in thinking about different responses to possible events in the environment, and the reasons why particular responses may be thought to be more or less effective.

- ● Events in the world may 'signal' that the dynamics of a particular scenario are actually developing.

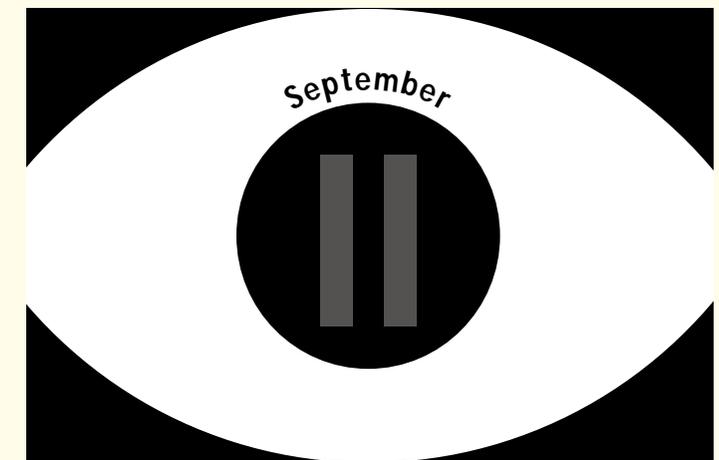
## Signals relating to 9/11 scenarios

Following the attack on the World Trade Centre in New York on September 11 2001, Shell's scenario team worked with other Shell executives and external experts to build a set of three short-term scenarios. These were called *Perturbation*, *Sustained Tension* and *Significant Disruption*, and described three different ways in which nations and peoples might respond to the attack.

Signals were identified under each of the three scenarios. Those scanning used a wide range of publications, looking in particular for maverick viewpoints that readers of more mainstream press and business publications might miss. For three months after 9/11, summary

reports on signals were produced every week. Thereafter, until May 2002, monthly signals reports were created.

We grouped signals under the following categories: US actions, political, economic, social, oil price and energy policy, and presented them in the form of newspaper headlines. Recipients of the reports were already familiar with the three scenarios and so could use the signals to decide for themselves which scenario seemed more or less likely.



## Sharing perspectives

Many people are caught up in day-to-day activities and so they do not easily find the time and resources to think actively about their context and how it might be changing. Even if they have developed a formal view, they may be very interested to hear some alternatives. For these and other reasons, there is popular demand to learn about scenarios created by other people, organisations and businesses.

For scenario engagements to be effective, they require time to explain the purpose of scenarios. Without this, audiences will most likely leave with the impression that scenarios are interesting, but not particularly useful; they may feel the work is superficial and not grasp important insights. They are also less likely to absorb and retain what they have heard.

To be truly valuable to both presenter and audience, scenario sessions must go beyond 'infotainment', which may be impressive but not lasting in its impact. These sessions are not intended to test policies or strategies, but, ideally, they will leave the audience with a heightened awareness of the assumptions they are making about the world around them.

● ● Global scenarios are of interest to wider audiences, highlighting uncertainties and helping to reveal assumptions about the future.

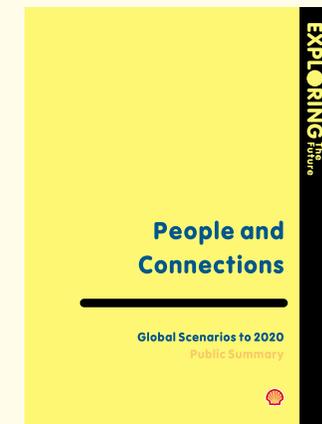
## Public launch of *People and Connections*

The 2001 Global Scenarios, *People and Connections*, were presented to a public audience for the first time in January 2002. At the launch, the Chairman of the Group, Sir Philip Watts, introduced the session, and Ged Davis, Vice-President, Global Business Environment, presented the scenarios and we distributed printed copies of the public summary of the scenarios. This was followed by a panel discussion and questions from the audience.

Even when we present the scenarios to a general audience, we place a high priority on explaining the purpose of scenarios, tailoring the presentation to the audience as much as possible and trying to engage each member of the audience.

At the launch we showed a video to illustrate the driving forces behind the scenarios. We posed questions to the audience and provided everyone with a 'jotter', so that they could record their responses and also make note of questions or thoughts they had during the session.

The public summary of *People and Connections* is a small, light book that is easy to carry and can be read and absorbed in a few hours at most. Colours and icons are used to help readers navigate their way through the book. In preparing the public summary, we have sought to highlight the aspects of the scenarios that are of broad interest.



## Recognising differences

When we share scenarios with others, we often learn a great deal from others' responses. In most instances, feedback from audiences helps us to understand how others see the world: What do they find unrealistic? What is missing? What is not explained or seen as incorrect? What important questions are left unanswered?

For the core scenario-building team, it may be worthwhile to have a systematic process in place for capturing audience feedback, so that it can be shared with other team members and can be used to inform ongoing research and future scenario work.

The ultimate reason for seeking to recognise our differences with others is the base this creates for better communication. This can lead, in turn, to mutual understanding and the potential for some kind of resolution of issues—although not necessarily consensus. Rather than engaging in frustrating confrontations, we can focus constructively on where our real differences lie. For example, we can uncover whether our differences lie in the values we apply when we address a particular question, or alternatively in our assumptions about how uncertainties may unfold.

● ● Scenarios form a base from which we can deepen our understandings and become aware of the limitations of our current thinking.

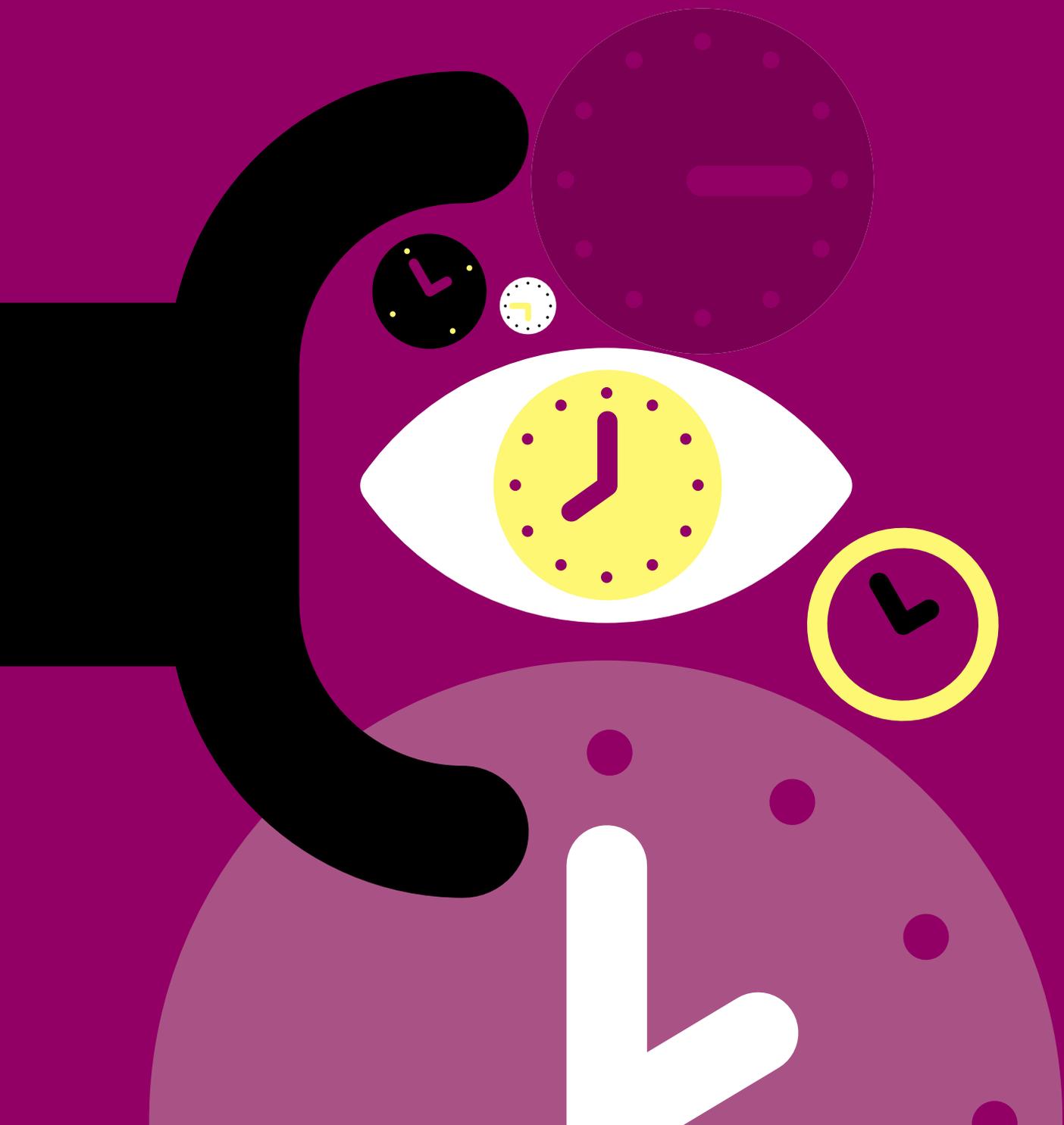
## General audiences for global scenarios

As well as the public launch, the Global Scenarios have been presented at a broad range of events, to a wide variety of audiences, most of whom have had an interest in how the global context is changing, as well as scenarios as a way of thinking.

Examples of our audiences include:

- External directors and senior members of an international institution in Washington DC
- Representatives from NGOs, businesses and governments during Scenario Day at the World Summit on Sustainable Development in Johannesburg

- Trustees and the top management team of an international NGO
- Local managers and clients (including large local companies and local and national government officials) of a major northern European national bank
- Representatives of the ministry of defence of a South-East Asian country
- Energy industry leaders and senior politicians at an industry annual executive conference.



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88 Planning the project

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## Reframing afresh

Over the period of a few years, both organisations and the context in which they operate are likely to change significantly, so periodic renewal of the scenarios is required.

When recommending a scenario cycle it is important to start afresh, most likely with a new scenario director and many new core and full team members—this will ensure the input of fresh ideas and new approaches. However, it is equally important to build constructively on what has gone before, in terms of both content and styles of communication.

Feedback from previous scenario engagements can be a useful source of information for identifying potential areas of research for the next set of scenarios, and for finding out how effectively the scenarios have been described and presented.

Within the organisation, strategic language and processes may have changed, so the application of the scenarios may also need to evolve in order to remain effective.

Remember, there are many uses for scenario building. Even if individuals feel that they are experienced enough in looking to the future, the process can continue to provide a way for groups to communicate and align their assumptions, and better understand the risks and opportunities associated with their strategies and plans.

● ● Just as the world does not stand still, nor should scenarios.

## Shell's scenarios: a historical overview

In a constantly changing world, no single set of scenarios can remain relevant and useful. We have found that, generally, scenarios that look out over 20 years are likely to remain useful for 3 to 4 years.

Shell developed its first set of global scenarios in 1972. There have been many global scenario cycles since then, each reflecting different challenges in the business environment, as well as changes within the Group.

### 1970s

The 1960s was an era of rapid growth for the energy industry and stable low oil prices, Shell's scenarios raised the possibility of high oil prices—which happened in 1973. Other scenario sets suggested further oil shocks and examined their economic consequences, such as improved energy efficiency.

### 1980s

Scenarios written during this decade explored, among other topics, the emerging de-integration of the international oil business, and included reflections on the 'greening' of the USSR.

### 1990s

This decade offered opportunities such as entry into formerly inaccessible countries and the inclusion of renewable energy sources in Shell's portfolio. These scenarios described these business challenges using the concept of TINA ('There Is No Alternative') to convey the relentless progress of globalisation, liberalisation and technology.

### 2001

Our latest scenarios investigate the social drivers and effects of TINA: Who will shape the new rules of globalisation, regulations around liberalisation and restraints on technology? Issues explored include changing power networks, the role of the US as world leader, and the possibility of a more regionally focused world.



## Planning the project

To get started, it is useful to put together a clear description of the scenario project. This exercise can help to clarify aspirations for the project among the members of the scenario-building team. The resulting document can be used to answer questions from potential sponsors. Obviously, it is impossible to predict accurately many of the aspects of such a project, and ongoing reassessment of milestones and resources is likely to be necessary.

*What is the primary purpose of the project?* For example, if it is to acquire knowledge, there will be a strong emphasis on research. If it is to improve communication and understanding within the scenario-building team, group processes will receive more attention.

*Who will be using the scenarios?* For example, the intended users may be tactical or operational staff or...

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●● It is useful to weigh up what you want your scenario project to achieve against a description of the time and resources that are available.

## Shell's ongoing scenario-building process



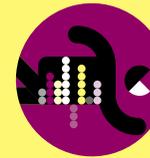
### Preparation

Assembling a clear description of the project helps to clarify goals and resources.



### Pioneering

Iterative cross-disciplinary research will help team members challenge their assumptions and confront their blind spots, as they work to identify their most important questions about the future.



### Map-making

The scenarios should form a coherent set of stories, raising issues relevant to the concerns of the recipients. Without containing excessive detail, they should provide a compelling and vivid description of possible future contexts.



### Navigation

Once you have mapped out your scenarios, there are many different ways to use them. Often they are most helpful if used over a period of time to shape the ongoing strategy of an organisation.



### Reconnaissance

Building and using scenarios can help raise awareness of the world around us, directing how we scan the environment and what we see, and increasing our understanding of how we—and others—interpret events and trends.



### Preparation

Organisations and the wider contexts change over time—so periodically, it will be necessary to build new scenarios. It is helpful to start by assembling a clear description of the project in order to clarify new goals and resources.



## Further Reading

The following selection of books offers some different views on scenario building and related skills.

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**Ray Carney and Leonard Quart**, *The Films of Mike Leigh: Embracing the World* (Cambridge, Mass.: Cambridge University Press, 2000). Mike Leigh takes a unique improvisational approach to creating his films. It sheds an interesting light on the skills that are useful in scenario building.

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**Ged Davis**, 'Corporate Governance, Sustainable Development and the Jazz of Shared Vision', in *Vision of Art and the Art of Vision* (Promethee, 2000). Relates scenarios to art, and describes what it takes to make a difference to the way others view the world.

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**Chantell Ilbury and Clem Sunter**, *The Mind of a Fox, Scenario Planning in Action* (Cape Town: Human and Rousseau, 2001). Clarifies the links between scenarios and decision-making.

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**Art Kleiner**, *The Age of Heretics* (London: Nicholas Brealey, 1996). Gives a detailed account of the beginning of scenario planning at Shell, alongside other examples of innovation in corporate management in the 1950s–1970s.

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**Barry Oshry**, *Seeing Systems: Unlocking the Mysteries of Organizational Life* (San Francisco: Berrett-Koehler, 1995). Describes how large-scale human systems work.

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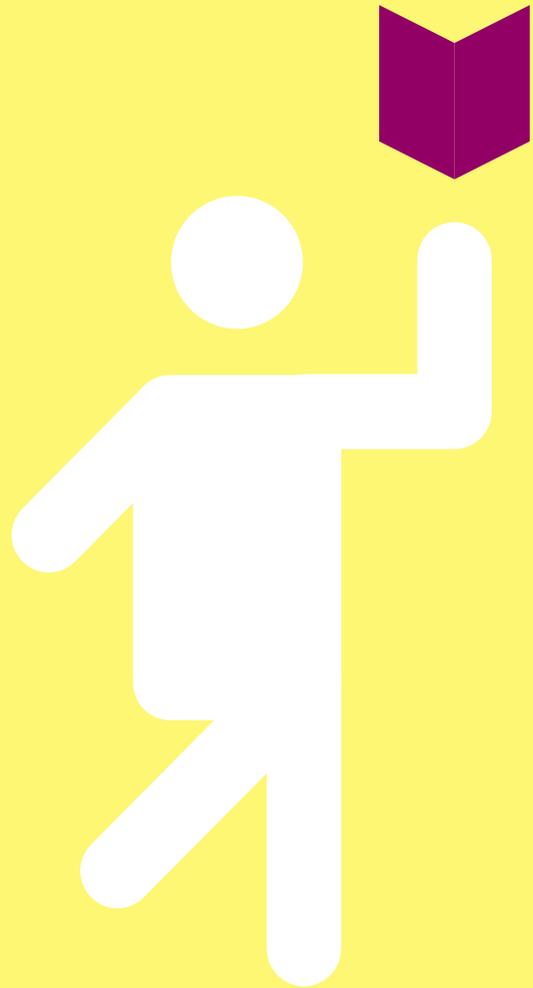
**Kees van der Heijden**, et al. *The Sixth Sense: Accelerating Organisational Learning with Scenarios* (Chichester: John Wiley and Sons, 2002). Offers a dense, detailed and practical guide to the benefits and techniques of scenario thinking and processes.

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**Pierre Wack**, 'The Gentle Art of Reperceiving' *Harvard Business Review* (article in two parts): 'Scenarios: Uncharted Waters Ahead' (September–October 1985) pp. 73–89; 'Scenarios: Shooting the Rapids' (November–December 1985) pp. 139–150. Classic articles by the founder of scenario planning at Shell.

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**Paul Watzlawick**, *The Language of Change* (New York: W. W. Norton, 1978). Lays out some elements of therapeutic communication by exploring the language of our 'right-brain'.



## Articles about *People and Connections*

A public summary of *People and Connections: Global Scenarios to 2020* was released in January 2002, and is available in print and on [www.shell.com/scenarios](http://www.shell.com/scenarios). Many presentations of the scenarios have been requested and there has been wide coverage of the scenarios in the media. Articles and reviews can provide insight into how the scenarios have been used and what people find valuable and interesting about them. Below is a selection published in English.

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**Bob Davis** and **Bhushan Bahree**, 'Shell Paints Two Visions of Future' in *The Wall Street Journal, Europe*, 21 January 2002.

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**Kris Frieswick**, 'Follow the Signposts' in *CFO Europe*, February 2002.  
(<http://www.cfoeurope.com/200202h.html>)

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**Michael Marien** (ed.) '*People and Connections: Global Scenarios to 2020*' in *Future Survey* 24/5, May 2002. (<http://www.wfs.org/fsrvmay02.htm>)

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**Richard Martin**, 'The Oracles of Oil' in *Business 2.0*, January 2002.  
(<http://www.business2.com/articles/mag/0,1640,35945,FF.html>)

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**Karen Lowry Miller**, 'Trying to Look at Both Sides Now' in *Newsweek*, 16 September 2002. ([http://www.msnbc.com/news/NWfront\\_Front.asp](http://www.msnbc.com/news/NWfront_Front.asp))

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**Ian Wylie**, 'There is No Alternative...!' in *Fast Company* 60, July 2002.  
(<http://www.fastcompany.com/homepage/index.html>)



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**Now use me...**

**'Scenarios are stories about the future,  
but their purpose is to make better  
decisions in the present.'**