



Scenarios: exploring societal problems

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Ged Davis is Vice President, Global Business Environment in Shell International Limited and head of Shell's Scenarios Team. He has been a scenario practitioner for over 20 years, engaged in the building and use of scenarios at the country, industry and global level. From 1997 to 2000 he was facilitator and Lead Author of the Intergovernmental Panel on Climate Change's Emissions scenarios 2000-2100 and in 1996/97 was Director of the World Business Council for Sustainable Development's Global Scenarios 2000 - 2050.

Prior positions in Shell International include Head, Scenario Processes and Applications and Head, Socio-Politics and Technology, with special responsibility for regional scenarios. From November 1990 to the middle of September 1994 he was Head of Group Investor Relations for the Royal Dutch/Shell Group. From 1986 to 1990 he was Head of Energy in Group Planning responsible for world-wide energy analysis, including global energy scenarios.

He has postgraduate degrees in economics/engineering from the London School of Economics and Stanford University, California and graduated in Mining Engineering at Imperial College, London.

In the 30 years or so that we, in Shell, have been working with scenarios, we have learned to work with multi-stakeholder groups. This has proved invaluable and has led us to think about scenario applications in a broader way. Scenarios offer a unique approach for working effectively in such situations, an approach that honours differences and aims at broadening our understanding of different frames of reference as part of reaching resolution.

Without a good idea of the future, it is difficult to make progress. It is a question of learning how systems work and then applying pressure at the right points. The process of building and developing scenarios helps us identify those pressure points, those effective levers.

The future is uncertain, but scenarios can and will most certainly play a central role in the forward-looking, action-oriented processes that help in identifying and clarifying difficult large-scale societal problems.

I would like to say a few words on how we use scenarios in business and their applicability to exploring societal problems. In particular, I will touch on the scenario work on the future of the global energy system and sustainable development.

Businesses, by definition, put ideas into practise. Our decisions are essentially practical and have a direct, real-world, impact—on our employees, our customers, our communities and our shareholders.

So the choices we make deserve careful consideration of future developments. Success in the future depends not just on the study of the future, but on the future success of decisions taken today, an outcome of the practical application of any futures work we do.

Use in Shell

Shell, as a group of companies, has used scenarios for about three decades now. We use them to help us think about the future—challenging our assumptions, developing strategies, and testing our plans. (*Fig. 1: Elements of scenario building*)

Our scenario process begins with trying to uncover the key frames of reference within an organisation that are relevant to the strategic decisions at hand.

We invest significant effort in understanding the dominant mental models within the organisation and surfacing the implicit assumptions underpinning business objectives, strategies and plans.

We then test the key drivers of change that might affect these assump-

tions over the relevant time horizon.

First we must agree on what is likely to persist over the time horizon of the scenarios: what are the predetermined elements and what is fundamentally uncertain.

Taking the uncertainties, we can then identify the different directions in which they might lead, and select those which will most help us think about the future.

Understanding key dynamics

Our understandings about the key dynamics of change, and their interactions, provide a foundation for scenario development. They form the basis for the creation of different scenarios. If they are chosen well, these different stories about the future can provide useful alternative contexts within which to explore policies and strategies.

These models can help a group of people to reach a common understanding of their situation, prompting informed debate, and leading to consensus around the level and degree of flexibility required in making strategic choices and decisions. (*Fig. 2: Challenging assumptions and benchmarking vision*)

Good scenarios help us to link plan and vision, enabling us to challenge our planning assumptions more effectively, benchmark our vision and lay out strategies for handling the macro-risks ahead. Scenarios provide a common language to help us explore future possibilities, with others as well as among ourselves. They can be built and used at many different levels: for individuals, communities,

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companies, countries or international organisations, or any combination of these players.

In creating scenarios, we are like explorers setting out on a journey of discovery. Although we have a vision of our destination, we know that conditions may change, new opportunities, or problems, will probably emerge, and the chances are we will need to change direction and steer a new course.

The process of building and using scenarios helps us with the rigours of our journey. It prepares us to maintain an open mind and be flexible in the face of uncertainty. In a constantly changing environment, it can help us both to understand where our destination should be, and how to get there.

Scenarios and large, complex projects

Scenarios help us to grapple with uncertainty, risk, and dynamic complexity. I can think of no other tool which creates the same opportunities and has particular value in dealing with ill-defined, large-scale problems such as sustainability and global climate change. (Fig. 3: *Sustainable World logic*)

Our first scenarios on sustainable development and climate change go back to the late 1980s with the development of the **Sustainable World** scenario which implied there would be a need to reconstruct the energy industry. The new focus highlighted radically lower energy intensities and slow growth in energy demand. There would be a switch to clean fuels especially natural gas.

In the mid-90s, we worked with the **World Business Council for Sustainable Development**, based in Switzerland, on scenarios to explore the concept of sustainability with the aim of using the results for strategy development. (Fig. 4: *WBSCD sustainability scenarios*)

You have to take your minds back a little and remember that sustainability was beginning to emerge on to the public agenda in the mid-90s, but was not yet on the general business agenda.

Three scenarios were developed called **FROG**, **GEOPolity** and **Jazz**. In **FROG** ('First Raise Our Growth') so-

cial and environmental problems were largely ignored, as people trusted the dynamics of economic growth and technological innovation. In **GEOPolity** ineffective government and business institutions were reformed after a crisis, and in **Jazz** there was a variety of ad hoc alliances and initiatives to create innovative and sustainable solutions.

These scenarios did not come up with conclusions. They explored the risks and opportunities around sustainable development and, thereby, they led the people involved to question their own perspectives. In one sense they changed the agenda: they helped participants to consider possibilities outside their normal perceptions.

Our understanding of how complex, dynamic ecosystems, whether natural or social, evolve is necessarily limited. But just saying, 'It is too complex' or 'The future is unknowable' is clearly no longer acceptable. Consider the case of IPCC and climate change. (Fig. 5: *IPCC Branching Points*)

Evolving sophistication

The early 1990s' work appears rudimentary compared to the 2001 scenarios, which I am sure will be seen as superficial compared with future scenarios work. But the IPCC work established a benchmark—a valuable basis for considering mitigation policies. The point is, of course, that we have much to learn and scenarios are a natural vehicle to convey new learnings. (Fig. 6 – *Shell Long Term Energy Scenarios*)

A good example of using scenarios to explore energy futures that might lead to low emission futures are Shell's new Long Term Energy scenarios which look towards 2050. Our scenarios explore both the nature and possible timing of technological advances and also, critically, how people respond to technologies and how they use them.

One scenario explores how revolutionary technological innovations, including the emergence of the hydrogen fuel cell, may reshape energy-use patterns, heralding the emergence of the 'hydrogen economy'.

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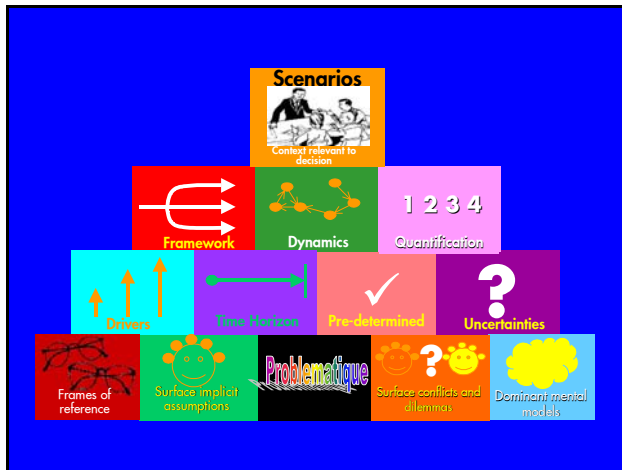


Figure 1: Elements of scenario building

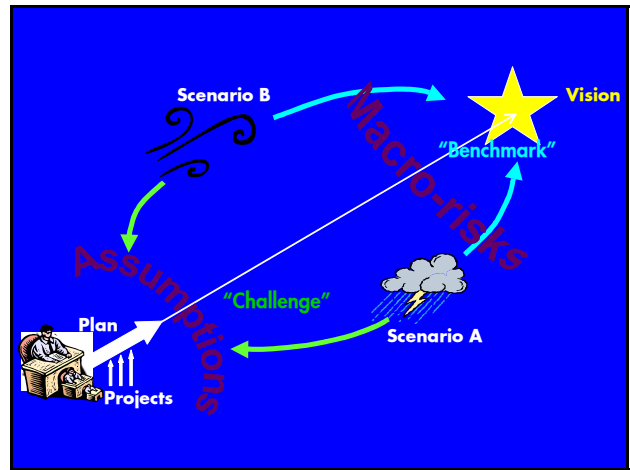


Figure 2: Challenging assumptions and benchmarking vision

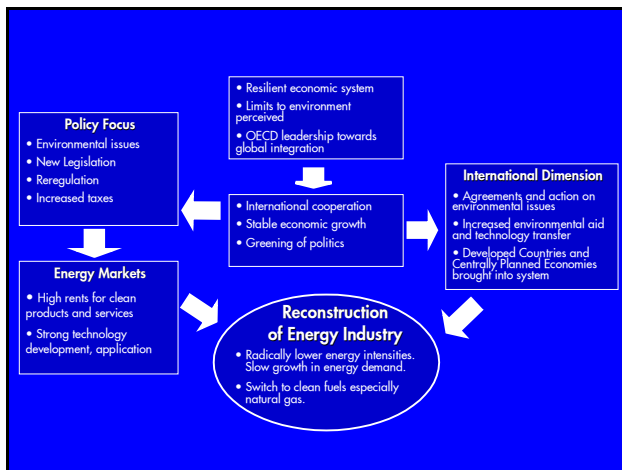


Figure 3: *Sustainable World* logic 1989

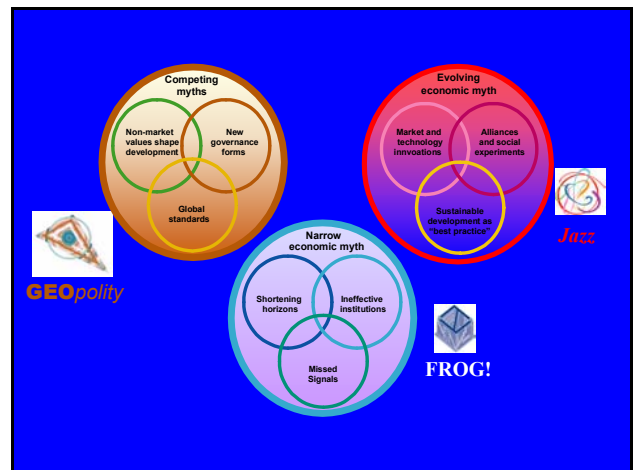


Figure 4: WBCSD Sustainability scenarios

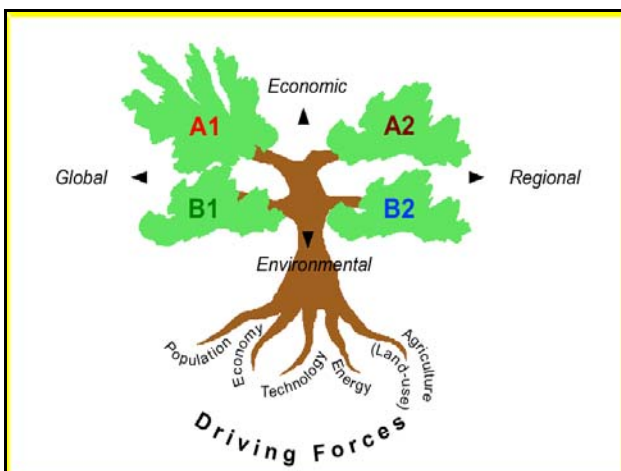


Figure 5: IPCC Emissions scenarios 2001

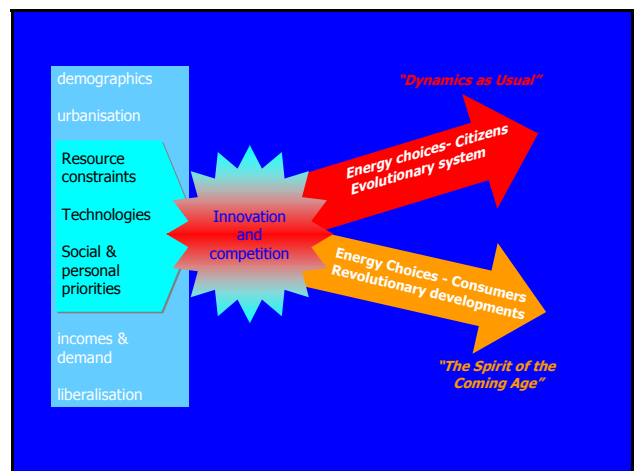


Figure 6: Shell Long Term Energy scenarios

The other is predicated on more evolutionary technological change, greater social concern about energy usage and significant renewables development. All incremental energy needs are met by renewables post-2050. These scenarios are of obvious business interest for an energy company, but they also point to options for solving the Climate Change conundrum.

An effective tool

Scenarios have many uses. At present, under UNAIDS sponsorship, we are trying to encourage the wider use of scenarios in order to tackle one of the most serious challenges on this continent: HIV/AIDS.

Many of you probably know more about the seriousness of this problem than I do, and also more about its tragic human dimensions. It is a complex catastrophe, ever growing and mutating, with myriad social, economic, political and health implications.

I believe that scenarios are an effective tool that may allow us to understand and tackle this immense challenge. Is HIV/AIDS primarily a health challenge? What role does governance play? This disease strikes young adults primarily. Never before has a disease threatened to devastate the fabric of a society to such an extent. Understanding the nature of the problem, its many aspects and possi-

ble effects is an obvious first step toward any type of meaningful response.

Addressing the problem of AIDS in Africa and the broader sustainable development challenge are but two examples of the kinds of complex issues emerging in society that are not easily resolved by any single institution.

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I believe there is value for society in developing more established structures for initiating and implementing this type of work. I have no doubt this will come.

“The need to find, and sustain, competitive advantage drives a relentless search for efficiency and innovation.”

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