

# **Business Planning for Turbulent Times**

**New Methods for  
Applying Scenarios**

**EDITED BY** Rafael Ramírez • John W. Selsky  
Kees van der Heijden

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New Methods for Applying Scenarios

Second Edition

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Rafael Ramírez, John W. Selsky and  
Kees van der Heijden



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## Foreword to the Second Edition

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The second edition of this book is welcome news for those of us who have to make decisions in turbulent times.

The book shows that the rigorous thinking of scholarly work is not something for 'ivory towers'; instead the book shows how academic work can provide the foundations for practical, even wise action by policy makers and decision makers.

The world faced a moment of truth in 2008 in the financial and economic crisis for which we are still searching for the definitive remedial response. Last September, upon the first anniversary of the disappearance of Lehman Brothers many commentators wondered whether 'saving it' would have prevented the accelerating economic crisis into which the world has been plunged since. This book argues that this question is moot; its findings suggest that the Lehman bankruptcy was only one of many possible bifurcations in a world buffeted by many intense forces, pressures and cross-currents. Any combination of them, Lehman or not, could have pushed the system past a tipping point signalling that the situation had become critical.

I very much agree with the authors that a response to the financial crisis that is superficial and technical does not take us far, may even add to the problem. Most of the current debate focuses on problematic aspects that constitute only a piece of the puzzle. This is understandable, even necessary, but our long term response needs to be based on a more complete and integrated analysis of the events as they have unfolded, and are still unfolding, in their complete systemic context. It is for this reason that I consider it important to bring new insights about reframing the situation to the attention of the decision makers who are in need of such deeper, more systemic understanding.

I welcome work such as developed in this book. In the long run there is no alternative to thorough analysis. The authors lay out a new departure for scenario planning in the context of the financial crisis that I believe is worth our attention. I have had the pleasure of working with scenario planning as part of the Shell Group Planning team and feel that this book renders in a clear way for the thoughtful decision maker why it is of acute relevance in these turbulent times.

I hope this book will be followed by others of this calibre enabling the deep scholarly debate needed to get us to a full understanding of the issues involved and to skilful remedial policies.

*Vince Cable  
Member of Parliament for Twickenham (UK)  
Lib Dem Shadow Chancellor of the Exchequer  
September 2009*

## Preface

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That the world is turbulent is not a new insight. Heraclites<sup>1</sup> around 500 BC observed that the world is in flux – in continual change. His view, that nothing in the world ever stays the same, was summarized as, ‘one cannot step in the same river twice’.

One might argue that turbulence was increased with the advent of scientific thinking, and the commencement of the Industrial Revolution in the 18th century, for humankind has been continually disrupted by new technologies and profound social change. This was observed by many, but in particular Jules Verne and H. G. Wells, who used their understanding of change and the medium of fiction, to address future possibilities and to comment on the present.

Understanding change requires a view of what persists. And what persists and what changes is very much a function of how we represent the world, and those representations can vary widely. Epicetus around 100 AD commented that ‘all is opinion’.<sup>2</sup> Thus it is no surprise that just as opinions vary widely about present phenomena they vary more widely when we consider future possibilities. This already hints at the import of reflection on alternative futures in considering current and strategic actions, especially in large organizations containing many people with differing views.

The first half of the 20th century was a turbulent time, by any measure, with two world wars and an economic depression. We also saw the massive rise in the power of the state, large private institutions and international organizations. This accelerated the need for new administrative disciplines to improve the effective management of large public and private enterprises, including consideration of the environment they were operating in.

This was also a period of great intellectual ferment with important changes in our scientific worldview (for example, the theory of relativity and quantum mechanics) and in philosophy (for example, Karl Popper’s theory of scientific enquiry). It was in this context that the paper by Tolman<sup>3</sup> and Brunswik in 1935, addressing the relation of the individual to the ‘causal texture of the environment’, was written. This paper provided a conceptual basis for Emery and Trist’s seminal work on the causal texture of organizational environments in 1965.

Following the Second World War we saw a maturing of ideas in cybernetics, open systems theory, systems dynamics, dynamic modelling, and paradigm shifts in science. All have provided a set of ideas and tools for considering, interpreting and engaging with the enterprise's environment. The book<sup>4</sup> on systems thinking, edited by Emery, provides a good introduction to leading edge ideas of the 1960s.

## **The advent of scenario planning**

Enterprises seek their own sort of persistence, that is organizational resilience and persistence of identity. They do so in a world in which the environment is subject to sudden change. This increasingly requires a capacity to understand the environment in which the organization is embedded, consider and simulate possible futures, and examine and select relevant strategies of adaptation. This is at the core of the practice of scenario planning.

Thus the need to address the challenge of how to act in the face of unknown and uncertain futures was an issue emerging in public and private enterprises in the 1960s. This was recognized in a number of institutions, as different as the RAND corporation, Délégation à l'Action Régionale et à l'Aménagement du Territoire (DATAR) and Royal Dutch Shell. Each took from a common intellectual heritage, but developed different approaches, reflecting a difference in style and organizational needs. The development of scenario planning in Shell is particularly interesting, showing how diverse ideas shaped one of the most successful scenario-planning teams.

In the mid 1960s Shell's Unified Planning Machinery was a model of its kind. A comprehensive forecasting mechanism focused on the coming few years and supporting traditional financial activities. Project evaluation was predominantly a matter of calculating returns and comparing them with targeted hurdle rates. But the 1960s was no normal decade for the oil industry, the formation of the Organization of the Petroleum Exporting Countries (OPEC) in 1960 and the rise of the independent oil companies was challenging the established regime of the Majors. In addition, the long-standing, stable pricing regime was potentially at risk. There was no adequate way to include these new political and business risks in investment considerations. Some proposed simply raising hurdle rates for 'riskier' projects. But this seemed inadequate and provided no new information as to how to handle the risks identified. The search for an alternative approach led to the experimentation with and eventual commitment to a process of scenario planning in Shell.

The two leaders of the new unit, Pierre Wack and Ted Newland, were well aware of Herman Kahn's work in RAND. Indeed Shell had a close relationship with the Hudson Institute in the late 1960s, where Kahn was working on the

civilian application of scenarios. But they brought a unique approach and insight into how to think about scenarios and use them.

Wack who had already initiated scenarios in Shell's French company was an avid 'seeker of truth'. He became a disciple of Swami Prajnapad of Channa, Northern India, an intellectual who was a master in Vedanta. He suggested to Wack that he practice his yoga in his job. In Wack's words,<sup>5</sup> 'When I came back to my job in a large International Company, where I was occupied with economic studies, I was asked to make market forecasts. I talked to Svamiji about it when I went to see him the following winter. After he'd asked me precisely what my work consisted of, he said "That is your yoga. It will be the test that will allow you to testify whether you see things as they are".'

Wack's relentless approach to understanding and deconstructing his business environment, identifying new connections and insights, and to constructing scenarios relevant to the leadership team in Shell, became the hallmark of his work. As he said:

*At the time, forecasting was essentially an econometric activity, that consisted of looking for 'development laws' in the past course of a phenomenon and applying them to the future. This way, it was possible to make forecasts from behind one's desk about elements with which one didn't have any contact whatsoever. This way of doing it was almost the rule. Svamiji's obligation for me to 'see things' was revolutionary. Instead of econometric calculations from global statistics, 'seeing' demands, firstly, the identification of the forces at work and the chain(s) of cause and effect behind the development of a market, and secondly, information about a chain that is much finer than global statistics, a ladder where significant differences appear. 'Seeing' certainly was a much more demanding and strenuous discipline than regular forecasting, but the managing directors who had to make use of forecasts quickly saw the difference and my field of activity expanded first to all of France and then to all the group on an International level. For me this was a great privilege, because the essence of my work was to try to 'see clear' in a situation where there were more and more parameters.*

He harnessed the benefits of systems thinking and dynamic modelling to a set of powerful narratives of change, highlighting new risks and opportunities. Like most new initiatives, views as to the value of scenarios were many, with passions strong both with supporters and detractors. But without question he catalysed an internal process to improve and finesse scenario applications, which over time has inspired many outside of Shell.

## **An art searching for its scientific basis**

It may seem self-evident today that the world is turbulent or, more exactly, requires continual and explicit reframing to be made sense of. This is where scenario

planning and its associated processes have become invaluable – most importantly as a basis for the development of new strategy.

The last half century has seen remarkable economic and political successes, as population doubled, world income quadrupled, and both colonialism and the Cold War ended. However, the large increase in productive capacity poses significant potential environmental and resource constraints in the coming century. For the first time we need to take into account the impact of our actions several generations ahead, and scenarios have a very significant role to play in clarifying the risks we face and communicating them widely. In addition, developments in computing power and tools for simulation of large systems in a post-modernist ethos that recognizes a diverse set of ideas, underpin the practice of scenario planning. With new opportunities have come new responsibilities for scenario practitioners, in particular to ensure that scenarios are ethically implemented.

The question of why scenarios work well in some situations and not others is of profound interest to practitioners. It is here that this book plays a special role in bolstering the art of scenario planning, with some glimpses as to what a science of scenario planning might be. Also of special interest are the case studies highlighting the wide range of current applications.

The prime aim of any planning system is to transform the enterprise's relationship to a turbulent environment into one which can be managed. Scenario planning has a unique role in this regard, through the institutionalization of risk management and risk monitoring, and provision of the tools to enterprise leaders for relating to the wider society. This book helps us better understand how to undertake this challenge and build resilient enterprises that can contribute to improving the world.

Ged Davis  
Sevenoaks  
May 2008

## Notes

- 1 Heraclites (~535–475 BC) was a pre-Socratic Ionian philosopher, a native of Ephesus on the coast of Asia Minor. Heraclitus is known for his doctrine of change being central to the universe.
- 2 Epictetus (~50–130 AD), one of the most influential teachers of Stoicism. He stated 'Men are disturbed not by things that happen, but by their opinion of the things that happen.'
- 3 Tolman, E. C. and Brunswik, E. (1935) 'The organism and the causal texture of the environment', *Psychological Review*, vol 42, pp43–77.
- 4 Emery, F. E. (1969) *Systems Thinking*, Penguin Books, London.
- 5 Roumanoff, D. (1993) *Svāmi Prajñānpad – Biographie*, La Table Ronde, Paris 6, pp262–266.

# Acknowledgements

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# List of Acronyms and Abbreviations

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AD	Accion Democratica party (Venezuela)
AIC	appreciate, influence, control
AIDS	acquired immune deficiency syndrome
AMA	American Management Association
ANC	African National Congress
ANC	Asamblea Nacional Constituyente (Venezuela)
CATWOE	customers, actors, transformation process, <i>Weltanschauung</i> , owner, environmental constraints
CEO	chief executive officer
CIAM	International Congress of Modern Architecture
cm	centimetre
CO <sub>2</sub>	carbon dioxide
COPEI	Christian Democrats (Venezuela)
CSR	corporate social responsibility
DATAR	Délégation à l'Action Régionale et à l'Aménagement du Territoire (French Delegation for Regional Action and Space Planning)
DLPFC	dorsolateral prefrontal cortex
DP1	first organizational design principle
DP2	second organizational design principle
EPO	European Patent Office
ERU	emission reduction unit
ETSP	Emery–Trist systems paradigm
EU	European Union
GAVI	Global A Vaccine Initiative
GBN	Global Business Network
ha	hectare
HEC	Hautes Etudes Commerciales
HRI	Human Resource Institute
IIASA	International Institute of Applied Systems Analysis
IIMAS	Institute of Applied Mathematics and Systems
IPCC	Intergovernmental Panel on Climate Change



IPY	International Polar Year
ISA	International Seabed Authority
IT	information technology
JI	Joint Implementation
KNMI	Royal Dutch Meteorological Institute
LISWA	Library and Information Service of Western Australia
LULU	locally unwanted land use
m	metre
MNE	multinational enterprise
MNP	Dutch Environment Assessment Agency
NAIP	National Agricultural Innovation Project
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NGT	Nominal Group Technique
OECD	Organisation for Economic Co-operation and Development
OED	<i>Oxford English Dictionary</i>
OEM	original equipment manufacturer
OFF2005	Oxford Futures Forum 2005
OPEC	Organization of Petroleum Exporting Countries
R&D	research and development
RAINS	Regional Acidification Information System
SC	search conference
SBS	University of Strathclyde Business School
SO <sub>2</sub>	sulphur dioxide
SSM	soft systems methodology
SSM(c)	SSM content sub-system
SSM(p)	SSM process sub-system
SUV	sports utility vehicle
TOB	tobacco company
TRIPS	Trade Related Aspects of Intellectual Property Rights Agreement
UK	United Kingdom
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNAM	Universidad Nacional Autónoma de México
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
UTIL	public-service utility