



Volume 77, Number 9

November 2010

ISSN 0040-1625

# Technological Forecasting & Social Change

An International Journal

**Special Issue**  
**Strategic Foresight**  
**Guest Editors: Joseph Coates, Philippe Durance and Michel Godet**

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)



# Technological Forecasting and Social Change

## An International Journal

Volume 77, Number 9, November 2010

### *Contents*

Special Issue: Strategic Foresight

Guest Editors: Joseph Coates, Philippe Durance and  
Michel Godet

<b>JOSEPH F. COATES</b> <b>PHILIPPE DURANCE</b> <b>MICHEL GODET</b>	Strategic Foresight: Introduction	1423
---	-----------------------------------	------

### *History and Concepts*

<b>HAROLD A. LINSTONE</b> (Portland, OR, USA)	On Terminology	1426
<b>JOSEPH F. COATES</b> (Washington, DC, USA)	The Future of Foresight—A US Perspective	1428
<b>BEN R. MARTIN</b> (Brighton and Cambridge, UK)	The Origins of the Concept of 'Foresight' in Science and Technology: An Insider's Perspective	1438
<b>IAN MILES</b> (Manchester, UK)	The Development of Technology Foresight: A Review	1448
<b>MICHEL GODET</b> (Paris, France)	Future Memories	1457
<b>KIMON VALASKAKIS</b> (Montreal, Quebec, Canada)	Notes on Relativity in Future Studies	1464
<b>PHILIPPE DURANCE</b> (Paris, France)	Reciprocal Influences in Future Thinking Between Europe and the USA	1469

*(contents continued overleaf)*



ELSEVIER

(contents continued)

## Contents

<b>GEORGE BURT</b> (Glasgow, Scotland, UK)	Revisiting and Extending Our Understanding of Pierre Wack's the Gentle Art of Re-Perceiving	1476
<b>ALAIN-CHARLES MARTINET</b> (Lyon, France)	Strategic Planning, Strategic Management, Strategic Foresight: The Seminal Work of H. Igor Ansoff	1485
<i>Methods</i>		
<b>PHILIPPE DURANCE</b> <b>MICHEL GODET</b> (Paris, France)	Scenario Building: Uses and Abuses	1488
<b>GILL RINGLAND</b> (Newbury, UK)	The Role of Scenarios in Strategic Foresight	1493
<b>PERO MIĆIĆ</b> (Eltville, Germany)	Future Markets-Radar: A Case Study of Applied Strategic Foresight	1499
<b>LUC DE BRABANDERE</b> (Paris, France) <b>ALAN INY</b> (New York, NY, USA)	Scenarios and Creativity: Thinking in New Boxes	1506
<b>CLEM BEZOLD</b> (Alexandria, VA, USA)	Lessons from Using Scenarios for Strategic Foresight	1513
<b>MIKA AALTONEN</b> <b>JAN HOLMSTRÖM</b> (Helsinki, Finland)	Multi-Ontology Topology of the Strategic Landscape in Three Practical Cases	1519
<b>RICCARDO VECCHIATO</b> <b>CLAUDIO ROVEDA</b> (Milano, Italy)	Strategic Foresight in Corporate Organizations: Handling the Effect and Response Uncertainty of Technology and Social Drivers of Change	1527
<i>Case Studies</i>		
<b>PIERRE CHAPUY</b> (Paris, France) <b>VINCENT GROS</b> (Ecully, France)	Collectively Foreseeing Future Issues: <i>Prospective Strategy</i> Contributes to the Agriculture and Food Systems' 'Futures Studies' Club	1540
<b>ERZSÉBET NOVÁKY</b> <b>GERGELY TYUKODI</b> (Budapest, Hungary)	The Responsibility of Futurists in Strategic Foresight — Hungarian Examples	1546
<b>CLAUDIO AMÓRICO DE FIGUEIREDO PORTO</b> <b>EDUARDO MARQUES</b> <b>ANDRÉA BELFORT</b> <b>ANDRADE SANTOS</b> (Rio de Janeiro, Brazil)	<i>Prospective</i> in Brazil: The Power to Build the Future	1550

(contents continued overleaf)

*(contents continued)*

## ***Contents***

<b>FRANCISCO JOSÉ MOJICA</b> (Bogotá, Colombia)	The Future of the Future: Strategic Foresight in Latin America	1559
<b>RUI BETTENCOURT</b> (Azores, Portugal)	<i>Strategic Prospective</i> for the Implementation of Employment Policies in the Azores	1566
	<i>Links with Other Disciplines</i>	
<b>PHILIPPE DESTATTE</b> (Namur (Wallonia), Belgium)	Foresight: A Major Tool in Tackling Sustainable Development	1575
<b>JEAN-PHILIPPE BOOTZ</b> (Besançon, France)	Strategic Foresight and Organizational Learning: A Survey and Critical Analysis	1588
<b>KIMON VALASKAKIS</b> (Montreal, Quebec, Canada)	The Case for Global Governance	1595
	<i>Call for Papers</i>	
<b>VINCENT MANGEMATIN</b> (Grenoble, France) <b>JONATHAN SAPSED</b> (Brighton, UK) <b>ELKE SCHÜBLER</b> (Berlin, Germany)	Special Issue on “Digital Technology and the Creative Industries: Disassembly and Reassembly”	1599
	Volume 77 Author Index	1601
	Volume 77 Book Review Index	1604
	Volume 77 Subject Index	1604



## Strategic Foresight Issue: Introduction <sup>☆</sup>

Joseph Coates, Philippe Durance, Michel Godet

### ARTICLE INFO

#### Article history:

Received 23 July 2010

The preparation of this special issue proved educational for all involved. The guest editors, editor-in-chief and several contributors began looking at foresight as practiced in the Americas and in the Old World. We tacitly agreed on what seemed to be strategic foresight, concept and practice. We expected to find a common ground between the two main centers of post-WWII forecasting. Of course, these two centers rose from different roots: the USA had very advanced approaches in technological forecasting developed primarily in a military milieu; France had the *prospective* attitude based on critical thinking in decision-making, which emphasized the human factor, values, freedom and reflection on the endpoint of action.

In our electronic correspondence and telephone conversations, it became clear that the future had certain borders, fault lines, and even tectonic plates. Nonetheless some terms and concepts were overlapping and repeating so that like the classic Venn's diagram, an interesting gray zone soon appeared. In fact, we can summarize what unites the practices in three characteristics: 1) action; 2) reflection; and 3) knowledge production. As discussions with authors and reviewers advanced, some debate arose, which appears more or less explicitly in the various articles published.

The earliest opposition involved *foresight* itself. If we specify *strategic foresight*, it resembles *la prospective* in French. American-style foresight has a more restricted meaning related to the image of a given future. In the famous *Brundtland Report* (United Nations, 1987), foresight is used in the original English while *intuition* appears in the French version. A perfect example of what we face in intercultural communication and in the field of futures studies. The term foresight should thus not really be used to designate the process as well as those tools used in creating the image. However, this problem of designation is a frequently discussed yet unresolved issue in terminology and lexicography hence not unique to foresight. If we simplify, *la prospective* is foresight when we add the adjective strategic in English; i.e., *strategic foresight*. *Prospective* may be seen as referring to both the process and result of that process in terms of action.

This initial opposition helps explain the second which arises over the practice of *prospective*. If we consider foresight as only the result then we can envision the futurist's role as a supplier to specific clients of images of given futures delivered without paying attention to the means employed to create those futures. This stance on practice has two important consequences:

First, the creative process of these visions of the future, even if transparent to the client, belongs to the unique purview of the futurist. The client does not participate in producing the work. This aspect represents the strongest opposition to the 'French style'. In *la prospective*, it is essential that the beneficiaries (the recipients) of the report, also help generate it. This corresponds to the notion of having a 'user' on an administrative board. The futurist's role is not to think about the future on behalf of the client. Instead, futurists accompany the client while drawing upon their experience and knowledge of the appropriate methods within a process of learning and organizational change that blends imagination and rigor. However, this stance cannot be fully understood without considering the second consequence which follows below.

If we consider foresight as simply a result which does not involve a direct relationship with decision-making and preparing for action, then clients merely receive these visions which will enable them to adjust their awareness of a given situation. The

<sup>☆</sup> The editors wish to thank Kathryn Radford for her editorial assistance, accessibility and fine work without which this special issue would not have been possible.

E-mail address: philippe.durance@cnam.fr (P. Durance).

American tradition speaks of strategic foresight without any real link to drafting strategy but mainly because the working horizon is longer than that of operational planning. In the French tradition, prospective is directly related to action, thus it is strategic. Within any organization, the study of possible and desirable futures remains of limited interest if not destined to have a real influence on action. In order to ensure that a strategy will be the best suited to the current reality and future of the organization, it must be shared and based on an intimate knowledge of the dynamics of the environment.

It should be noted that there are individuals who use *strategic foresight* as a simple tool for a collective or shared dream. This usage tends toward the New Age or utopic. The editorial board did not solicit their contribution to this issue. Instead, we sought out respected researchers or consultants guided more by logic and intuition than by ideology.

Despite the opposition outlined above, the two traditions share two basic principles which form the pillars of both *prospective* and strategic foresight: first, humans have the will and capacity to influence the future in order to favor the desirable; and second, this capacity creates a moral obligation to reflect upon the future and its possible paths. The two styles also share the objective of prospective which is to make the actors aware of the implicit hypotheses underlying their decisions. This awareness obliges participants to question and possibly modify their thinking. Overall, the French and American traditions do share some core components, methods such as description of the system studied, identification of key variables and actors, description of possible futures, choice of a desirable future, etc. There are also numerous techniques and tools, (cross-impact analysis, morphological analysis, scenarios, etc.). In sum, even though the two traditions may appear at times deeply opposed, their current differences are considerably less than those weighing upon their original conceptualization some 60 years ago.

The current issue opens up the floor to academics and practitioners from North America, South America and Europe. The editors decided to pursue the debate in the initial section of this issue so that people could see where they, their practice, company or culture are situated. Also, the editorial board realized that many professionals in the field needed to look backward as well as forward. Certain articles serve as reminders; others as practical primers. It is both a pilgrimage and an odyssey given the diversity of authors, countries and cases presented.

In this spirit, the reader may approach the two dozen articles in one of four ways:

First with a professional guide, (in this case Hal Linstone, Joe Coates, Ben Martin, Ian Miles, Michel Godet and Kimon Valaskakis), readers may revisit the concepts, terminology and landmark studies or reports in the section entitled *History and Concepts*. Founding editor Hal Linstone sets the tone in a concise piece which describes his initial experience with foresight and the journal itself. He reminds us that globalization is not new. Indeed, TFSC was international from the outset (1969) featuring contributors from six nations in its very first issue. The mission statement of the journal bears eloquent witness to those early days and editorial principles. Award-winning futurist and guest editor Joseph Coates refers to the popularity of strategic foresight in the current futures lexicon. His article outlines the key characteristics of strategic foresight as practiced by American futurists. Ben Martin explores how the term foresight first came to be used on the other side of the pond, in connection with science and technology at the Science Policy Research Unit (SPRU) at Sussex University in 1983. His article also examines other early uses of foresight in the United States and Canada. Ian Miles traces the emergence of the term and its spread as seen in his own career in the United Kingdom over the past 30 odd years. Michel Godet recounts important moments from the field of futures studies, notably in France. Former ambassador Kimon Valaskakis considers how cultural diversity and misunderstanding, notably in terms of the perception of time affect futures work in one of two articles herein. Indeed, Valaskakis suggests using terms in their original language, something this special issue has done wherever possible.

This journal also preserves and transmits the collective memory of the profession as only long-time practitioners can. The articles of George Burt, Philippe Durance, and Alain Charles Martinet flesh out the debate with information on key players from the past, notably Pierre Wack, Gaston Berger and Igor Ansoff. In fact, Philippe Durance sets out the timeline of events and influences across the waters so that readers may see how the North American–European divide was bridged at times. Along similar lines, George Burt delves deeper into the influence of Pierre Wack, whose 1985 Harvard Business Review papers are two of the most frequently referenced in scenario planning literature. Burt considers the legacy and relevance of this pioneer by synthesizing Wack's ideas, making it possible to derive three integrated principles – de Rosnay's 'macroscope' concept, predetermined elements, and re-perceiving. After all, Wack was an intrepid traveler who left France for America carrying some key ideas, e.g., his version of the scenario method implemented at Shell. Alain Charles Martinet pays tribute to another visionary who crisscrossed the globe, Igor Ansoff. An unclassifiable academic, executive at Lockheed and RAND Corporation original, Ansoff will be remembered primarily as the leader of the 'strategic planning school', as accredited by Henry Mintzberg.

Second, the reader may see how scenarios have evolved with real-life adaptations and applications in a variety of situations. The editors have selected seasoned authors (Godet and Durance, Ringland, Miçiç, de Brabandère and Iny, Bezold, Aaltonan and Holmström, Vecchiato and Roveda) who present their own tools, models, techniques and timely examples in the *Methods* section.

Michel Godet and Philippe Durance actually start with one of the most popular methods, scenarios. Their article reminds readers that foresight and scenario are not synonymous. They distinguish among various scenario terms and concepts with illustrations and provide practical advice plus reminders which reflect their philosophy, e.g., action without a goal is meaningless and foresight leads to action.

Across the channel, Gill Ringland outlines two examples, GlaxoSmithKline (GSK) and Legal & General (L&G) and details the scenario approach which she adapted and adopted for developing strategic foresight and going further to achieve purposeful renewal. The organization that is successful in using strategic foresight to renew is called a PS-RO – a *Purposeful, Self-Renewing Organization*.

German futurist, Pero Miçiç explains how his own Eltville model and 'five futures glasses' function when looking at future markets for major corporations.

Back in New York City, Luc de Brabandère and Alan Iny encourage all of us, as well as their clients at BCG, to not just think outside the box but to create new boxes. They sketch out their own way of working on creativity with top executives within a short, intensive period.

Clement Bezold takes visitors inside the Institute for Alternative Futures home of the notion of 'aspirational futures' applied in constructing scenarios for major corporations but also for not-for-profit organizations, including the largest – the American Association for Retired Persons (AARP) and the American Cancer Society; as well as national governments in North America, Europe, Africa, and Asia, and the World Health Organization.

Mika Aaltonen and Jan Holmström describe their research based on design theory and their approach using the chronotope space as a sensemaking and management vehicle, notably in determining horizons and frameworks which serve in scenario construction. They then detail the results of applying their approach to a specific project within a major multinational company.

Ricardo Vecchiato and Claudio Roveda then give a whirlwind tour of change, uncertainty and social drivers using recent brand name cases like Kodak digital processing, Starbucks cafés, and Luxottica eyewear to illustrate their point.

Third, the reader can learn from articles which serve as a primer about how different people in different parts of the world have faced the future. In the *Case Studies* section there are real-life applications at the corporate, municipal, territorial and national level in various places such as France (Chapuy and Gros), Hungary (Nováky and Tyukodi), Brazil (Marques, Santos and Porto), Mexico and Colombia (Mojica), and the Azores (Bettencourt).

Pierre Chapuy and Vincent Gros chronicle the fifteen-year history of the 'Futures Studies Club', an innovative, collaborative endeavor initiated by the CEO of BASF France with the involvement of major stakeholders right down to consumers in the form of a futures club within the agri-food sector.

Reporting from Budapest, Erzsébet Nováky and Gergely Tyukodi reveal how difficult it can be for a population raised in a Communist régime to consider their own interests and think about the future collectively. As several former Soviet bloc countries are experiencing the first generation of capitalism, the cases presented in this article highlight the role culture plays in futures work.

Similar to Hungary, Brazil experienced rapid change, miraculous growth even, rising above third-world status in the international economy, largely through oil reserves but also through more ecological and political issues as seen in the Amazon. Authors Eduardo Marques, Andréa Belfort Andrade Santos and Claudio Américo de Figueiredo Porto walk us through three fascinating cases: Petrobras; Amazonia and Eletronorte. Still in the southern hemisphere, Francisco José Mojica colors in the rest of the map with examples of regional futures or *prospective* work for Mexico as well as Colombia. Again, the cultural element is emphasized when Mojica describes how time as a linear element has traditionally clouded most efforts to 'see' the future collectively. Strategic foresight analyzes the future as a multiple reality. In other words, it means thinking differently and not reading reality in a linear manner. Overall, his article proffers a message of hope for the future of Mexico, Latin and South America, especially if this linear view can be changed by younger graduates of management and futures studies programs in Mexico and Colombia.

From the Azores, Rui Bettencourt reports on how the prospective technique, e.g., MICMAC and Mactor methods, were applied to policy-making, notably in the labor sector by the government of this series of islands, an autonomous region of Portugal. Bettencourt's concrete examples come with some surprising statistics on gender, training and salary conditions. His article is a postcard of progress from a small territory now heading the Assembly of European Regions which serves to promote employment and mobility.

Forth, for the reader who wants to link more theoretical or environmental issues to futures studies, the international tone resounds in articles on sustainable development by Philippe Destatte, global governance by Kimon Valaskakis and organizational learning by Jean-Philippe Bootz. This section, *Links to Other Disciplines* offers articles that link futures work to specific themes or disciplines.

Philippe Destatte reminds us of the big (green) picture, how looking to the future, notably the Club of Rome report and then a series of other endeavors, e.g., Interfutures coincided with the rise of sustainable development. He defines sustainable development and reminds us that futurists themselves underestimate the relationship between sustainable development and foresight, even if they are talking about *sustainable planning*.

Yet if we want managers, executives, and everyday citizens to think about the future, let alone prepare for it, they need training or re-training. On this topic, Jean-Philippe Bootz treats the link between strategic foresight and learning (in particular organizational learning). In terms of training people to think about the future, notably professionals and executives, we need to consider this link which is part of the broader topic of cognition.

Still on the world stage, Kimon Valaskakis' article refers to the Western European tradition established by the Westphalia Treaty (1648) in terms of sovereignty and what it has wrought socially, economically and politically. He outlines the multilateral system, its strengths and weakness, categorizes various international governmental organizations, emphasizes the need for global governance while regretting the lack of monitoring or control mechanisms and lastly wagers on change.

Of course, in the spirit of liberty and free will, readers are welcome to decide by title, author or topic and then meander. As the saying goes, what counts is not the destination but the journey.