

Scenario Network Mapping

The Development of a Methodology for Social Inquiry

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Glossary

As this thesis is interdisciplinary, I have tried to avoid the unnecessary use of jargon. However, the text makes extensive use of some unfamiliar and new constructs, as well as using several other terms with more specific meanings than usual. The following explanations have been kept brief, serving as reminders rather than full definitions.

Process and Methodology. This thesis is potentially confusing because it involves two methods. First, there is the method of anticipating the future, as developed by this thesis, and secondly there is the method by which the former method was developed. To avoid such confusion, I have labelled the method of anticipating the future as the Process, while the method of developing the Process is referred to as the Methodology. Borrowing a convention from contract law, the specific Process and Methodology are distinguished from any more general uses of those terms by the use of initial capital letters.

Terms related to the future

Proceeding from the most general to the more specific: **Anticipation** includes all aspects of perceiving the future, whether or not organized as a formal method. **Foresight** is a general term for considering the future more or less comprehensively, including everything from econometric forecasting to science fiction. **Foresighting** refers to organized engagement in foresight. **Foresightfulness** refers to foresight which turns out to have broadly anticipated a future situation

Futures studies includes **scenario planning** and a range of other methods, mostly qualitative: in other words, the range of methods covered in journals such as *Futures* and the *Journal of Futures Studies*. The use of **futures** (as opposed to future) follows standard terminology in this area: it implies that “the future” is not fixed; this has no association at all with the trading of commodity futures on an exchange. **Scenario** is used here in the futures studies sense, not the slightly different meanings used in dramatic production and in information systems. **Forecasting** (except in the term “technological forecasting”) refers only to quantitative methods; thus futures studies and scenario planning are not regarded here as subsets of forecasting.

Entities and Cases

The Process was developed by testing it against a number of different types of entity. An **entity** is anything that has a future that can be studied, including businesses, organizations,

industries, concepts, and regions. An entity need not be an entire organization; any self-contained part of an organization can be considered an entity.

A case study approach has been used, involving seven cases. Each case is a particular type of entity, while each type of entity is represented by one or more cases. In many contexts, “entity” and “case” are interchangeable, but the term **case** refers to an entity that was studied. **System**, as the term is used in general systems theory, often has the same meaning as entity, in this context, but systems are generally considered in terms of inputs, processes, and outputs, which entities need not have.

Holon. A system that can simultaneously be viewed as a collection of smaller systems and as a sub-system of a larger system. The holonic principle deriving from such a perception is that any construct can be viewed as a holon. Though others have used this term in different senses, it is used here in the original sense introduced by Koestler (1967). This is explained in more detail in chapter 4, section 4.5.

Midcasting. A systematic method for anticipating wildcard events in the medium-term future, developed by the present writer. First published under the name of “middlecasting” (List, 2001b and 2004b) and later changed, when that term was found to cause some confusion. See chapter 5, section 5.4.6 for a full explanation.

System impingement. A system impinges on another when it communicates some message that affects the other system in some way. Thus a system impingement diagram can be constructed for any holon. Details can be found in chapter 5, section 5.2.1.

Actors and stakeholders. In some cases it was useful to distinguish between these. The **stakeholders** of an entity are those who either affect it in some way or are affected by it in some way. The term **actors** is used here in the same sense as by Godet and his colleagues: to exclude stakeholders who have no ability to affect the future of the entity.

Design criteria and execution criteria When a social inquiry process is being designed, the design criteria are characteristics of the design of the process, inherent in the way it works. Execution criteria are those that cannot be tested until the process is applied. In terms of program theory (Bickman, 1990), design criteria correspond to inputs and activities, while execution criteria correspond to outputs, outcomes and impacts.

Abbreviations

The following abbreviations, not commonly found in dictionaries, have been used in several chapters of this thesis.

CLA	Causal Layered Analysis (Inayatullah, 1998) – explained in chapter 2, section 2.8.1.
FAR	Field Anomaly Relaxation (Rhyne, 1981) – see section 2.5.1.
IAF	International Association of Facilitators (http://www.iaf-world.org)
ICT	Information and communications technology – <i>معلوماتية</i> , computing and related areas
IP	Intellectual property
NPD	New product development
OD	Organizational development (Holman and Devane, 1999)
RFS	Retail financial services: banks, credit unions, and the like
SNM	Scenario Network Mapping (the “Process” of this thesis) – see chapter 5
TQM	Total quality management (Deming, 1994)
TRM	Technology roadmapping (Phaal, Farrukh, and Probert, 2004) – see section 2.6.3

The following abbreviations are used to protect the anonymity of organizations involved in five of the case studies. Several of them explicitly requested anonymity, and one made it a formal condition of participation.

CU	A credit union (case 5)
EM	An engineering manufacturer (case 2)
LS	A community legal services organization (case 4)
RN	A radio network in Indonesia (pilot case)
SC	A group of service clubs (case 6)

The reason for not naming the entities is that, at some stage, this thesis may become available on the Web, on a site out of my control. It will then be indexed by search engines, and if organizations’ names were listed in full, anybody “trawling” for detailed information about an organization would find out a lot more about these organizations than the latter might prefer. The other two cases, the Iraq war and the Barossa Valley, are already in the public domain.

Summary of thesis

This thesis records the development of Scenario Network Mapping (or SNM): an integrated process for anticipating the future, derived from scenario planning. It argues that this process amounts to an innovative and comprehensive method of anticipating the future. Compared with traditional scenario planning, it is designed to be carried out on a smaller scale, and can be more readily updated. Since the literature revealed no appropriate process for developing a social inquiry methodology, the thesis also develops such a process, using action research for formative evaluation.

If foresighting methods are regarded as ways of dealing with social change, changing social environments therefore require new forms of anticipation. Following a review of foresighting methodologies and of 15 scenarios for the year 2000, it is argued that the current world social environment requires a method that fulfils different criteria from futures methods used previously. The literatures of foresighting and related social inquiry were used to develop a set of evaluation criteria for a futures method. These criteria were divided into design criteria (against which a methodological design could be evaluated) and execution criteria (evaluable during and following empirical iteration).

Rather than develop a method in a theoretical vacuum, a basic conceptual framework of the future was defined. This was used to underpin the development of SNM, and that development also served to improve the conceptual framework. From that framework, the basis of SNM was developed, so that the design criteria derived from the literature were fulfilled. In summary, SNM is a variant of scenario planning, in which a wide range of stakeholders participate in creating a roadmap-like scenario network (rather than the several discrete scenarios of traditional scenario planning). Such a network begins in the past and may have multiple entry points into the present. Each node in the network can itself be regarded as a scenario and explored in detail if necessary. The network is a layered model, similar to Causal Layered Analysis, but with a more explicit narrative emphasis.

To test and further develop the SNM model, seven cases were studied. Maximum variation sampling was used to exercise the development of SNM, by applying it in a wide range of situations. The case study methodology was action research, making explicit use of repeated cycles, monitoring the development of the methodology so that it could be continuously improved.

Following the case studies, the SNM method has reached a point where it is viable enough to be carried out by others; a brief handbook for potential users is included as an appendix. However, the method still has potential for further development

As well as developing a new form of scenario planning, and a conceptual framework on which it is based, this thesis also develops an explicit process for formative evaluation, which could be useful in the development of new qualitative methods of social inquiry.

Declaration

I declare that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university and that to the best of my knowledge it does not contain any materials previously published or written by another person except where due reference is made in the text.

Signed

.....

Dennis List

Acknowledgements

Above all, I acknowledge the assistance given by participants in the case studies. However, because this thesis involved the development of a methodology, that development can be separated from the substantive contribution of the case study participants. Though they were generous in supplying substantive content, the development of the methodology itself was my own work. Naturally, though, I have welcomed suggestions and criticisms during the development process. Special thanks are due to fellow doctoral students David Baker, Gary Buttriss, Julia de Roeper, and Evan Yabsley, all of whom made helpful suggestions that improved the theory and the methodology. I also wish to acknowledge the help given – in determining that this method was in fact new – from various members of the World Future Studies Federation, both through email and at the conferences in Romania in 2001 and Japan in 2002. During a workshop on Social and Organisational Systems held at the Australian Defence Science and Technology Organisation in April 2005, several defence experts made contributions, particularly relating to the case study of the war in Iraq. Other most helpful suggestions were made by Professors Richard A Slaughter, Werner Ulrich, and Sohail Inayatullah. Finally, I acknowledge the patience of my wife Katrina, and the assistance given by my supervisor, Professor David Corkindale, my associate supervisor, Professor Richard Blandy, and in particular Associate Professor Mike Metcalfe, whose informal mentoring has been invaluable.