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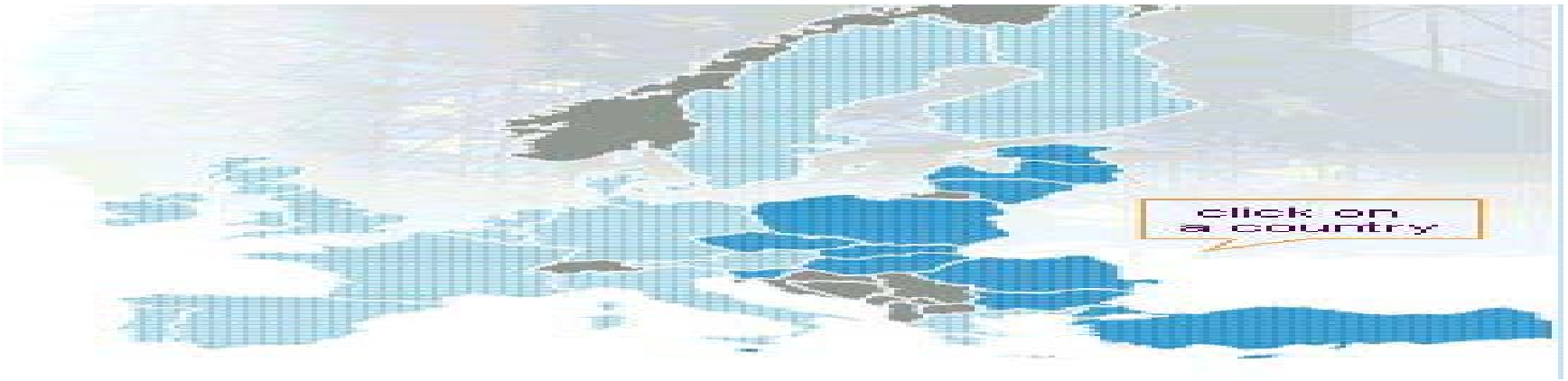
ENVIRONMENTAL SCANNING IN THE EUROPEAN SCALE: METHODOLOGIES AND TOOLS OF THE HANDBOOK OF KNOWLEDGE SOCIETY FORESIGHT



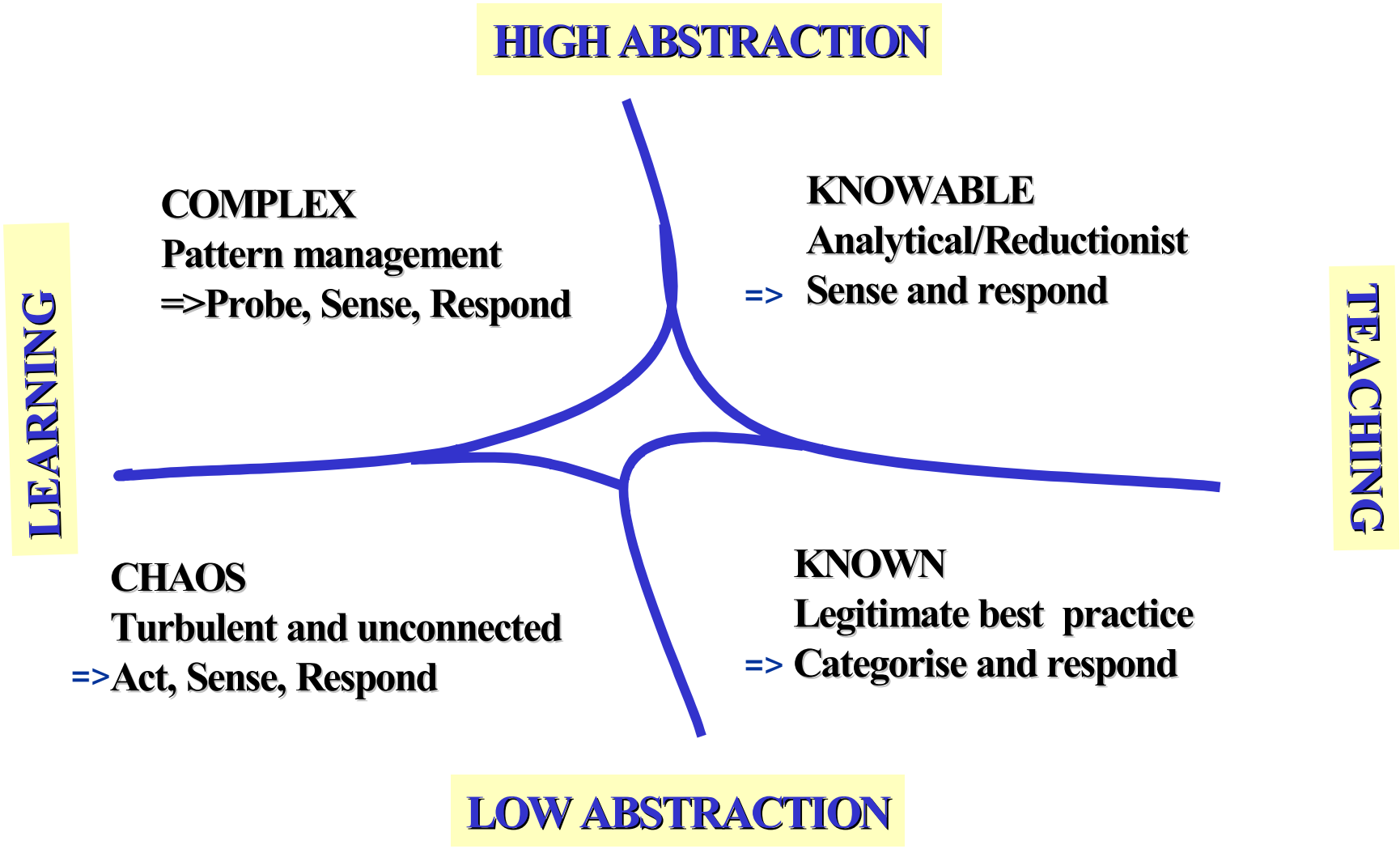
Scanning for the Futures 5-6 June 2003, Workshop II, Regional Environments

©Research manager Jari Kaivo-oja, Finland Futures Research Centre

WHERE FORESIGHT IS NEEDED?

- DEFINITION OF STRATEGIC PRIORITIES
- INVESTMENT DECISIONS
- EDUCATION & COMPETENCE NEEDS
- IMITATION-INNOVATION DISCUSSION
- OTHER DEVELOPMENT PLANS
- PLANNING PROCESSES
- NETWORKING

FORESIGHT FIELDS AND KNOWLEDGE MANAGEMENT



Source: Snowden/IBM 2002

THE FUTURES FIELD

FUTURES RESEARCH
Empirical and scientific focus

FUTURES STUDIES
Synthesis, criticism and education

FUTURES MOVEMENTS
"Grass roots' activities leading to change

HARD POLE
Restricted to professionals

SOFT POLE
Open to everyone

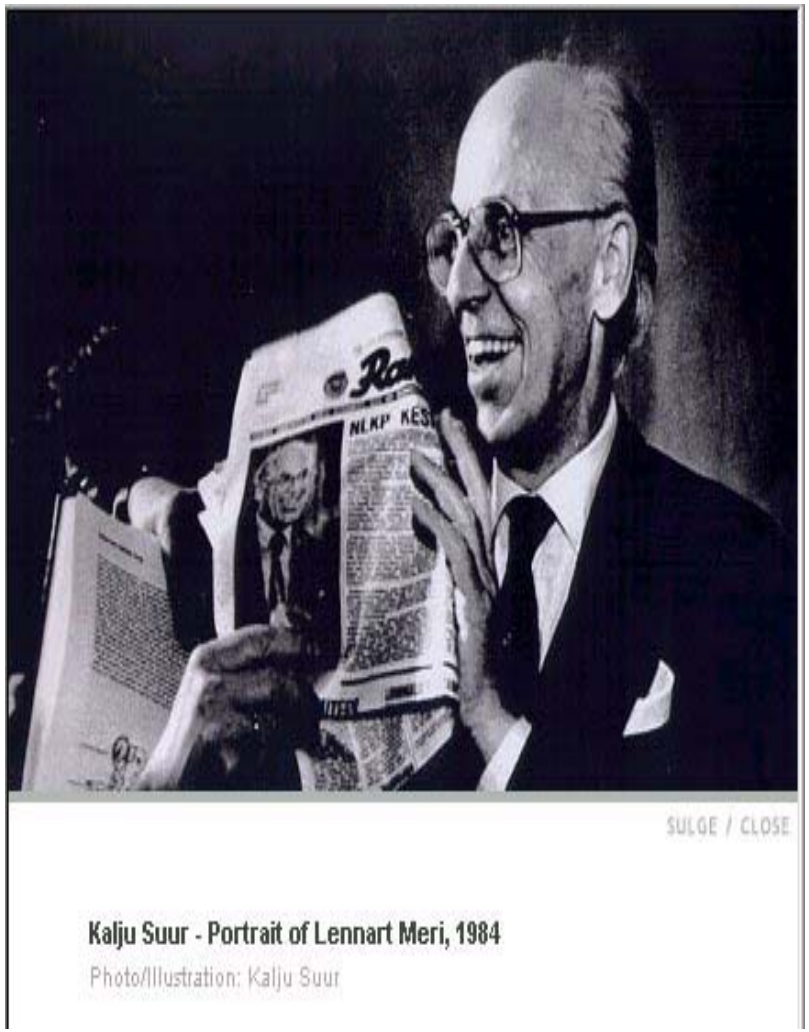
Source: Slaughter 1998

SYNOPSIS OF FUTURES STUDIES

	Possible	Probable	Desirable
Goal	Open up Wake Stimulate	Analyse Evaluate Systematise	Preparing preferences Winning support Supporting choice
Roles	Driven by images Visions	Driven by analysis	Driven by values
Tools	Realisable	Structural	Participation-Oriented
Agents	Visionaries Geniuses Writers Futurists	Analysts Methodologists Futurists	Charismatic leaders Social reformers Writers Futurists
Organi-sational form	None or one-person dominated Think tank	Think tank	Lobby group Idea organisation Businesses Companies

Source: The Copenhagen Institute for Futures Studies 1996

BOTH SOFT AND HARD POOL OF FUTURES STUDIES ARE NEEDED IN THE VISIONARY LEADERSHIP PROCESS.



SULGE / CLOSE

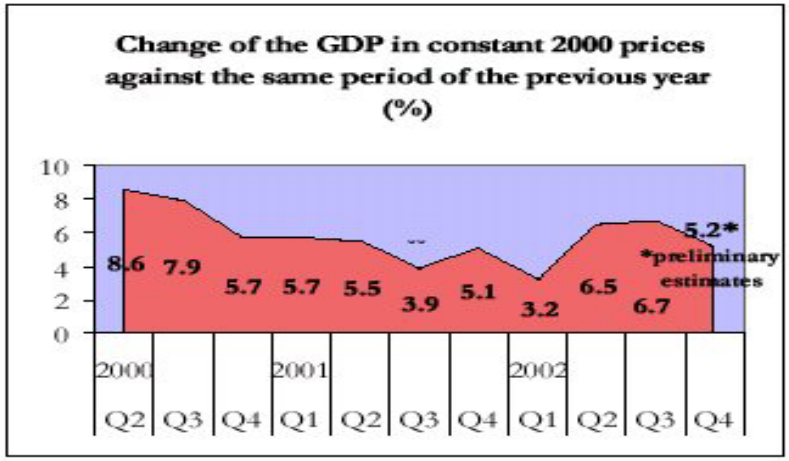
Kalju Suur - Portrait of Lennart Meri, 1984

Photo/Illustration: Kalju Suur

The Baltic Sea countries' expected economic growth figures according to *Swedbank*

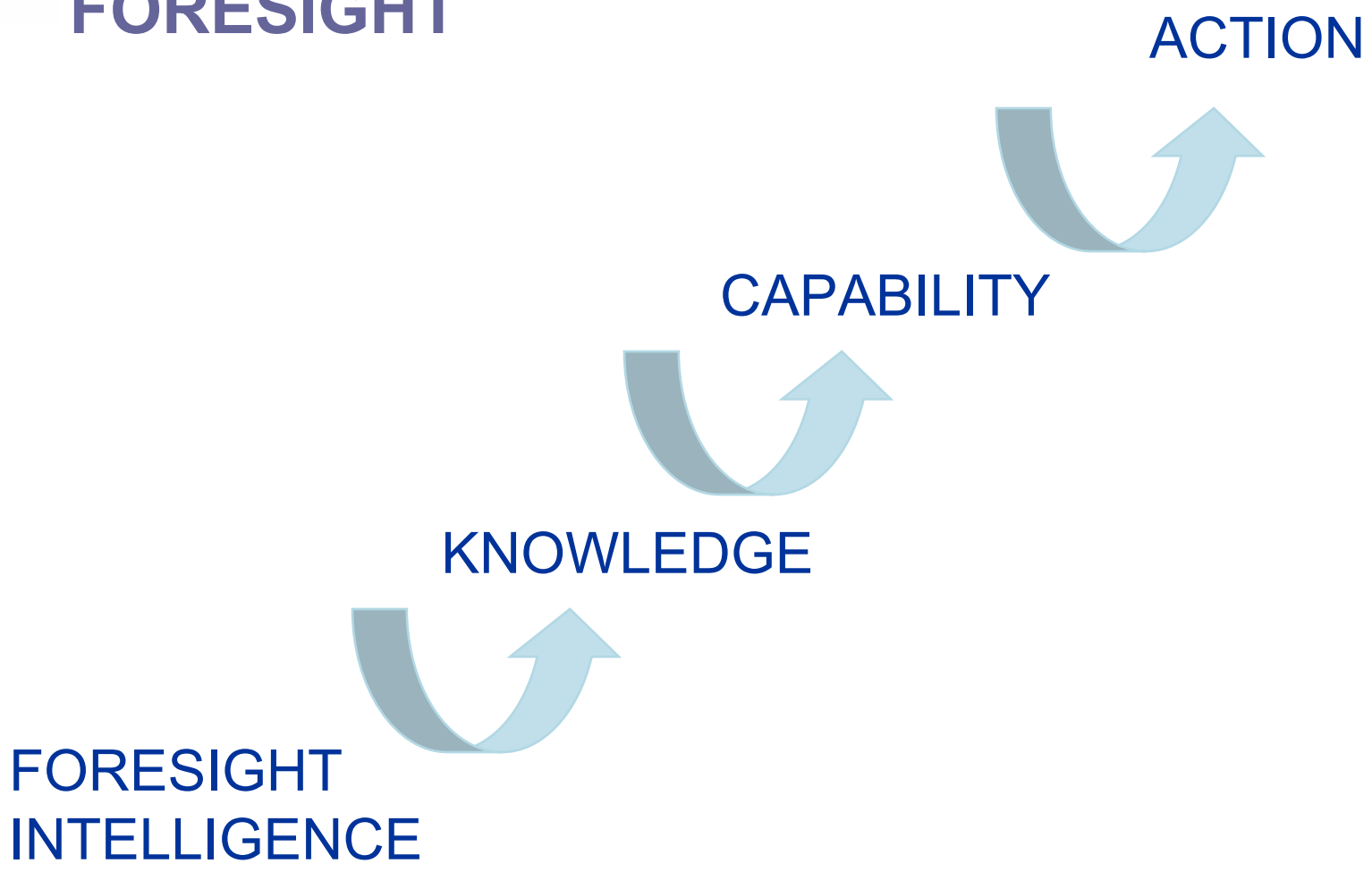
Country	GDP growth (%)		
	2002	2003	2004
Poland	1.2	2.5	3.5
Estonia	**5.8**	**5.5**	**5.8**
Latvia	5.5	5.7	6.0
Lithuania	5.9	5.2	5.7
Russia	4.2	4.0	3.5
Germany	0.1	0.2	1.5
Denmark	1.2	1.5	2.0
Norway	1.4	1.5	2.0
Finland	1.5	2.5	3.0
Sweden	1.7	1.6	2.2

Source: Swedbank



Source: Statistical Office of Estonia

KNOWLEDGE MANAGEMENT AND FORESIGHT



Source: Modification of Tuomi (1999)

PROFESSIONAL FORESIGHT INTELLIGENCE INCLUDES STRONG KNOWLEDGE MANAGEMENT EMPHASIS

Share of countries in Estonian foreign trade (%) in December 2002 and January 2003

Exports		
Country of destination	12/2002	01/2003
Finland	28.1	29.4
Sweden	14.8	15.4
Germany	9.6	9.4
Latvia	7.7	6.5
Denmark	3.3	4.5
Norway	2.9	3.9
UK	4.7	3.7
Netherlands	3.8	3.3
Lithuania	3.8	3.1
Hungary	0.5	3.0

Imports		
Country of origin	12/2002	01/2003
Finland	14.8	15.5
Germany	10.1	9.5
Russia	8.7	9.4
Sweden	9.5	8.6
Spain	1.2	5.7
Japan	4.4	5.2
China	5.5	5.0
Poland	2.6	3.4
Lithuania	3.1	3.3
USA	3.3	2.9

FORESIGHT IN KNOWLEDGE SOCIETIES

Foresight can be seen as a policy response to the emergence of KS, as one common feature of emerging Knowledge Societies. Thus by applying Foresight to issues of the KS we are being reflexive, using KS tools to examine the KS itself. Foresight has the following features:

* It is based on the need to inform decisions with knowledge for policies and strategies to be based on sound evidence and expert opinion.

* It recognises that this knowledge is widely dispersed, and needs to be accessed through social networks.

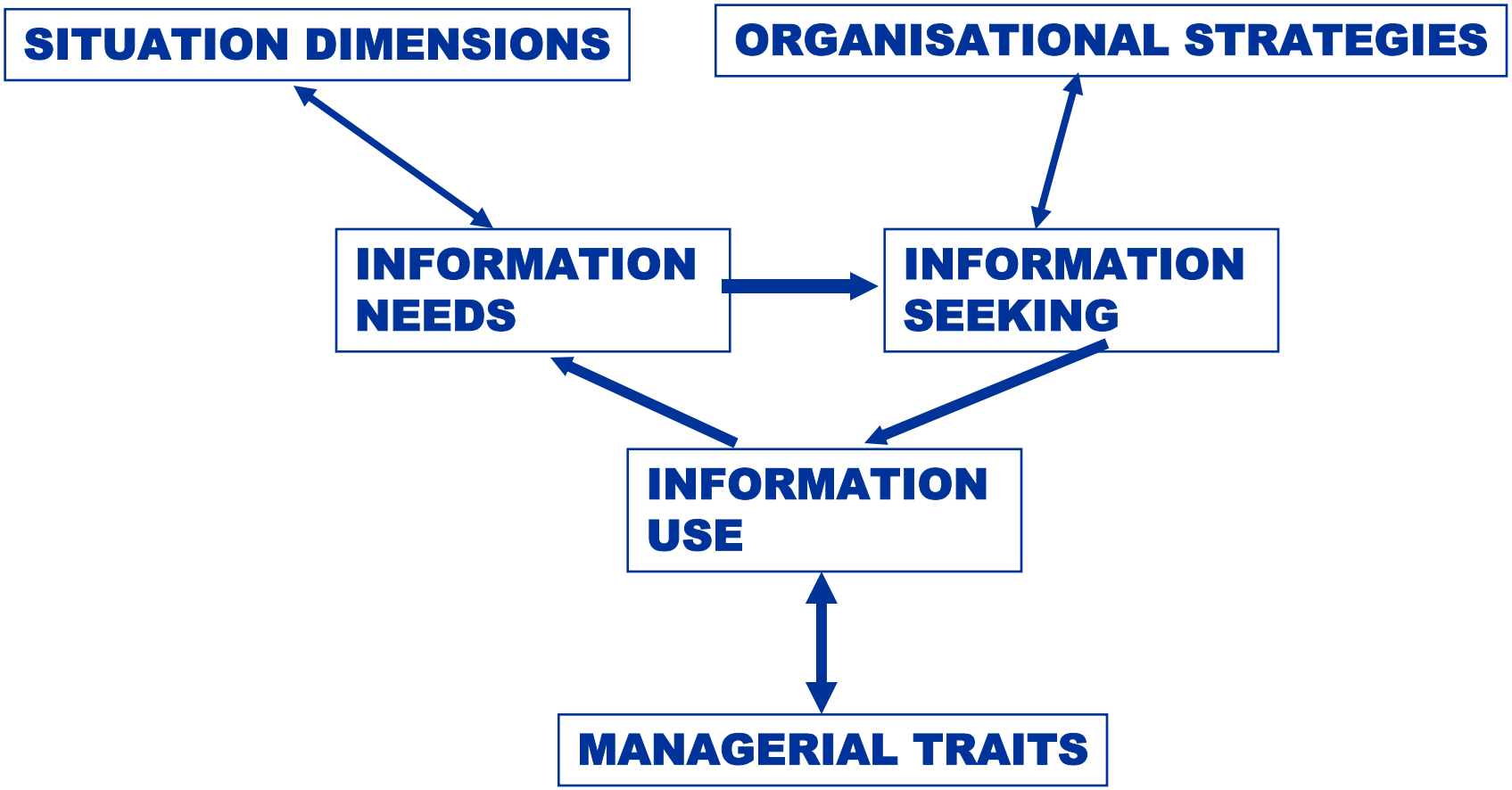
* It recognises that change is a constant, and that it is important to be aware of the long-term context within which present decisions are being made and will have effects.

ENVIRONMENTAL SCANNING

Environmental scanning is the acquistion and use of information about events, trends and relationships in an organisations's external environment, the knowledge of which would assist management in planning the organisation's future course of action.

Choo 2001

CONCEPTUAL FRAMEWORK FOR ENVIRONMENTAL SCANNING (CHOO 2001)



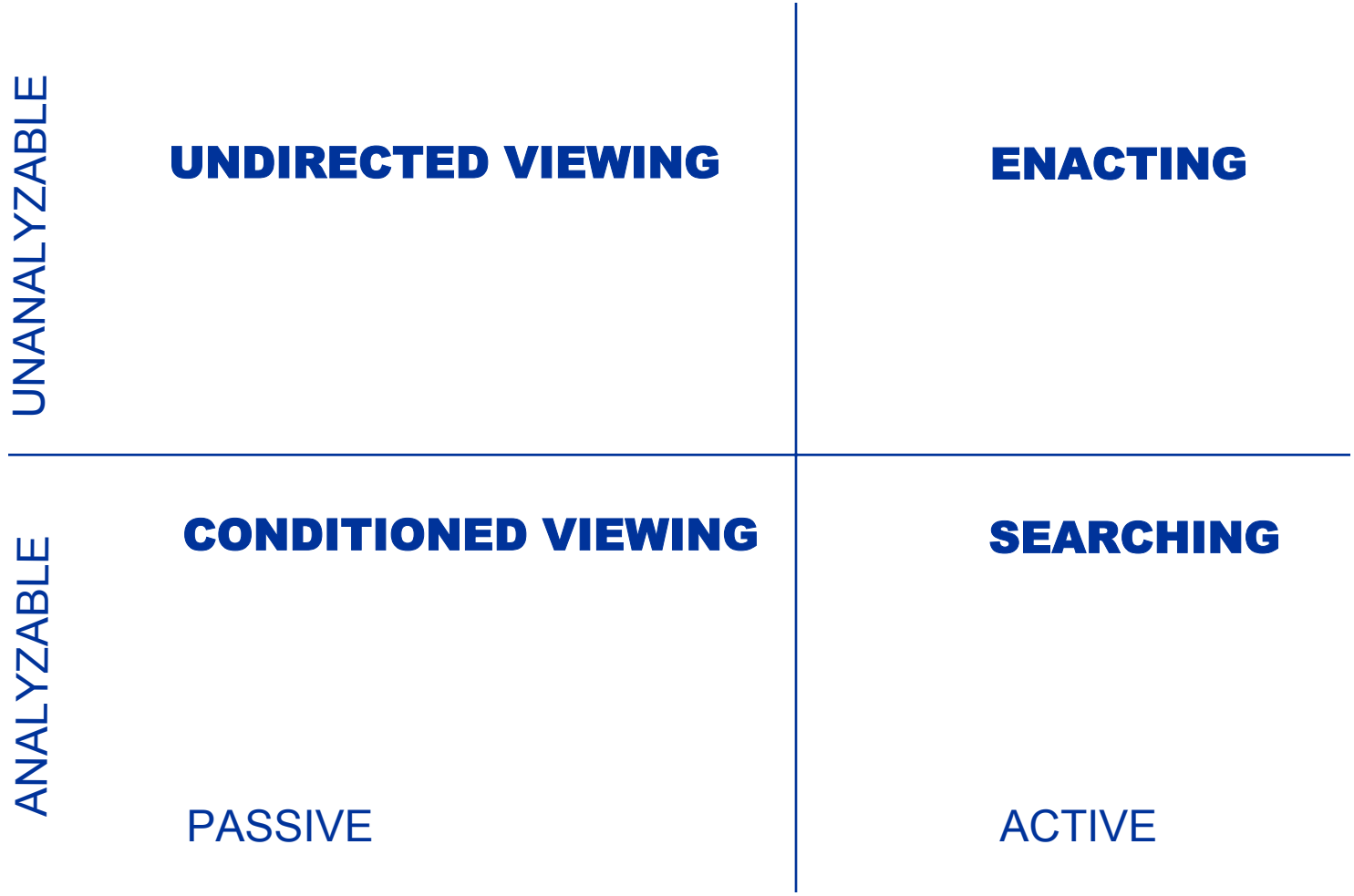
TYPICAL KEY QUESTIONS

WHAT ARE THE TRENDS ON THE BASIS OF ENVIRONMENTAL SCANNING?

WHAT KINDS OF SCENARIOS YOU CAN OUTLINE ON THE BASIS OF ENVIRONMENTAL SCANNING?

WHAT KINDS OF WEAK SIGNALS YOU OBSERVE ON THE BASIS OF ENVIRONMENTAL SCANNING?

MODES OF ENVIRONMENTAL SCANNING



Choo 2001

UNDIRECTED VIEWING: WEAK FORM OF ENVIRONMENTAL SCANNING

Undirected viewing, a term first used by Aguilar (1967), takes place when the organization perceives the environment to be unanalyzable and so does not intrude into the environment to understand it. Information needs are ill-defined and fuzzy, and much of the information obtained is nonroutine or informal, usually gained through chance encounters.

Since the environment is assumed to be unanalyzable, the organization is satisfied with limited, soft information and does not seek comprehensive, hard data. Information seeking is thus casual and opportunistic, relying more on irregular contacts and casual information from external, people sources.

The advantage of undirected viewing is that the organization need not expend resources on formalized scanning, but this saving incurs the risk of the organization being surprised or caught off-guard.

ENACTING: PROACTIVE ENVIRONMENTAL SCANNING

Enacting takes place when the organization perceives the environment to be unanalyzable but then proceeds to intrude actively into the environment in order to influence events and outcomes. Information needs are those required for experimentation and testing the environment. This could involve identifying areas for fruitful intervention. Information seeking is from external sources and channels that the organization has created through its intervention, and this may include feedback about the actions that the organization has taken. Enacting organizations "construct their own environments.

They gather information by trying new behaviours and seeing what happens. They experiment, test, and stimulate, and they ignore precedent, rules, and traditional expectations." (Daft & Weick, 1984: 288)

CONDITIONED VIEWING: ANALYTICAL ENVIRONMENTAL SCANNING

Conditioned viewing, again from Aguilar (1967), occurs when the organization perceives the environment to be analyzable but is passive about gathering information and influencing the environment. Information needs focus on a small number of relatively well-defined issues or areas of concern. These are often based on widely-accepted industry assumptions and norms. Information seeking makes use of standard procedures, typically employing internal, non-people sources, with a significant amount of data coming from external reports, databases, and sources that are highly respected and widely used in the industry.

Thus, viewing is conditioned in the sense that "it is limited to the routine documents, reports, publications, and information systems that have grown up through the years." (Daft & Weick, 1984: 289) Because the environment is assumed to be knowable, there is less need for equivocality reduction, with a greater number of rules that can be applied to assemble or construct a plausible interpretation.

SEARCHING: SCIENTIFIC AND PROACTIVE ENVIRONMENTAL SCANNING

Searching (labeled as Discovery in the original Daft and Weick paper) takes place when the organization perceives the environment to be analyzable and it actively intrudes into the environment to collect an accurate set of facts about the environment.

Information needs are based on well-defined search goals that are broad, detailed, and open-ended. The organization is prepared to be surprised by unexpected findings that reveal new information needs. Information seeking is for hard, formal, often quantitative data, typically from surveys, market research activities that are rigorous, objective. The organization is likely to have its own scanning unit whose staff systematically analyzes data to produce market forecasts, trend analysis, and intelligence reports.

SEARCHING AND ORGANISATIONAL BEHAVIOUR

During searching, sense making is based on formal, systematic scanning that is aimed at determining the objective facts of what is happening in the external environment. This systematic scanning can be both action-driven and belief-driven. Data gathering about the environment is relatively intense and may involve intrusive actions such as polls, surveys, focus groups, and so on.

Following data collection, interpretation is likely to be belief-driven, where the organization would extrapolate from past experience and construct meanings from current beliefs.

Developing and working with explicit knowledge is the essence of searching. Measurement, modeling, forecasting, trends analysis, and other formal, quantitative methods are utilized to discover the true condition of the external environment.

SEARCHING AND ORGANISATIONAL BEHAVIOUR

The organization believes that there is a stock of knowledge about the environment that it can draw upon for analysis and planning. Because the organization is actively searching for information about an environment that it believes to be knowable, decision making is likely to follow the process mode described earlier. In this mode, the organization takes the time and resources to look for or develop alternatives, and choosing a course of action is based on a diagnosis of the situation giving rise to the decision need.

Decision making is based on logical, rational procedures, often including systems analysis and quantitative techniques.

CONDITIONED VIEWING OR SEARCHING?

There are important differences between conditioned viewing and searching.

Information seeking and use in conditioned viewing is restricted to a few issues; routinized; and based on received knowledge.

On the other hand, searching is broad, open, and based on a willingness to revise or update existing knowledge.

ENVIRONMENTAL SCANNING AS INFORMATION SEEKING

	Undirected viewing		**Enacting**
Information needs	General areas of interest	Information needs	Specific areas of exploration
Information seeking	”Informal”	Information seeking	”Testing”
Information use	”Noticing”	Information use	”Experimenting ”
	Conditiened viewing		**Searching**
Information needs	Sensitized areas of concerns	Information needs	Detailed search goals
Information seeking	”Routinized”	Information seeking	”Formal”
Information use	”Watching”	Information use	”Discovering”

ENVIRONMENTAL SCANNING AS ORGANISATIONAL LEARNING

	Undirected viewing		**Enacting**
Sense-making	Waiting for important change	Sense-making	Create features in environment
Knowledge Creation	Little prexisting knowledge	Knowledge Creation	Tacit knowledge: learn by doing
Decisiong Making	Coalition/Political mode	Decisiong Making	Anarchic/Proces s mode
	Conditiened viewing		**Searching**
Sense-making	Driven by norms and beliefs	Sense-making	Determine objective rection
Knowledge Creation	Cultural knowledge: expectations, frames	Knowledge Creation	Explicit knowledge, hard data, formal mode
Decisiong Making	Programmed/Rati onal mode	Decisiong Making	Process mode

CHALLENGES OF ENVIRONMENTAL SCANNING

In today's highly volatile environment, organizations face a dilemma.

On the one hand, the environment appears unanalyzable because of its dense complexity and rapid rate of change.

On the other hand, organizations recognize that they need to be proactive in scanning and shaping their environments.

Some organizations believe that precisely because the environment is in flux, there is an opportunity (or a necessity in some cases) for them to intervene and influence developments to their advantage. The model implies that for organizations wanting to encourage their members to scan more proactively, both the level of environmental analyzability and the level of organizational intrusiveness need to be raised.

CHALLENGES OF ENVIRONMENTAL SCANNING

To increase environmental analyzability, the organization might keep in close touch with important actors in the environment; make information about customers, competitors, and the industry more widely available to employees; and encourage staff to be interested in and to discuss and collectively make sense of external developments.

To increase organizational intrusiveness, the organization might create channels to communicate with and influence stakeholders; encourage managers and employees to probe or test their environments by allocating resources or providing organizational slack; and be tolerant about innovative enactment experiments that do not succeed.

ENVIRONMENTAL SCANNING: ARTICLES AND BACKGROUND RESOURCES

Environmental Scanning (Background articles and materials)

http://horizon.unc.edu/courses/papers/enviroscan/
http://www.cce.cornell.edu/admin/program/documents/scanintr.htm
http://informationr.net/ir/7-1/paper112.html
http://www.asaenet.org/environmental_scan/
http://www.infinitefutures.com/essays/prez/holescan/

Environmental Scanning Resources (Example Concerning Scanning Resources)

http://www.cce.cornell.edu/admin/program/documents/scan.htm
http://www.prnavigator.com/environmental_scanning.htm
http://choo.fis.utoronto.ca/esproject/

Leading Futurists Environmental Scanning Sources

http://www.leadingfuturists.biz/scanning.htm

ENVIRONMENTAL SCANNING EXAMPLES

Sectoral Environmental Scanning (Example Concerning Minnesota Future Work)

http://netco.tec.mn.us/~scanners/
http://airweb.org/links/scanning.cfm

Cabrillo College Environmantal Scanning Reports (Grassroot Scannnig Example):

http://www.cabrillo.edu/index.html

http://www.cabrillo.cc.ca.us/pres/cmp/envscan.html

ENVIRONMENTAL SCANNING EXAMPLES

Social Technologies Environmental Scanning Reports (Global Scanning Example)

http://www.socialtechnologies.com/fc/index.asp

http://www.socialtechnologies.com/fc/tf/

Emerging Environmental Security Issues (AC/UNU Millennium Project Global Scanning Example)

http://www.acunu.org/millennium/env-scanning.html

The Early Childhood IDEA Environmental Scanning Network (Global Thematic Scanning Network)

http://www.ideapolicy.org/scanning_main.htm

BASIC EUROPEAN ENVIRON-MENTAL SCANNING TOOLS

Public opinion scanning

http://europa.eu.int/comm/public_opinion/

Standard Eurobarometer

http://europa.eu.int/comm/public_opinion/standard_en.htm

Special Eurobarometer

http://europa.eu.int/comm/public_opinion/archives/special.htm

Candidate Countries Eurobaromer

http://europa.eu.int/comm/public_opinion/cceb_en.htm

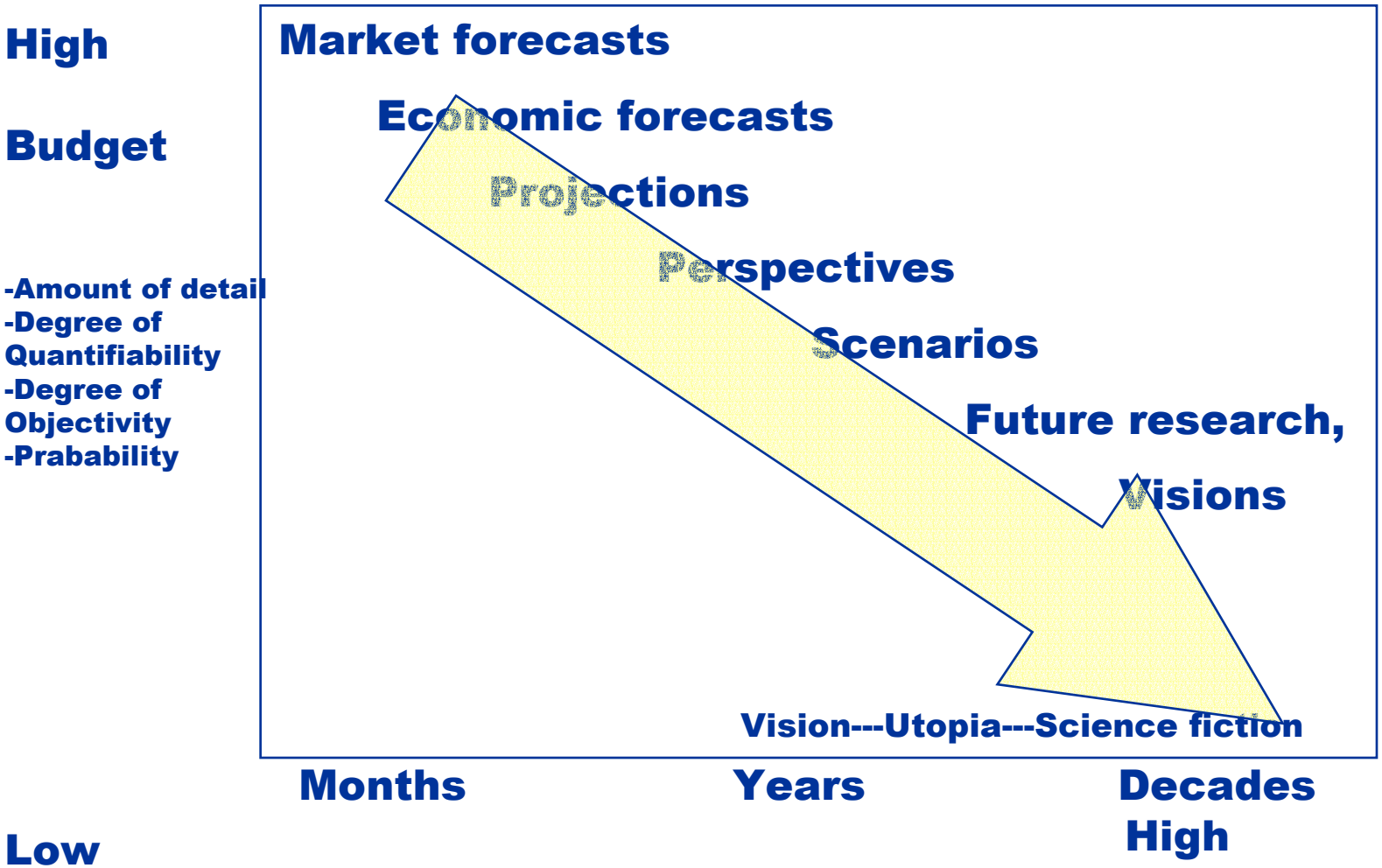
Flash Eurobarometer

http://europa.eu.int/comm/public_opinion/archives/flash_arch.htm

Qualitative Studies

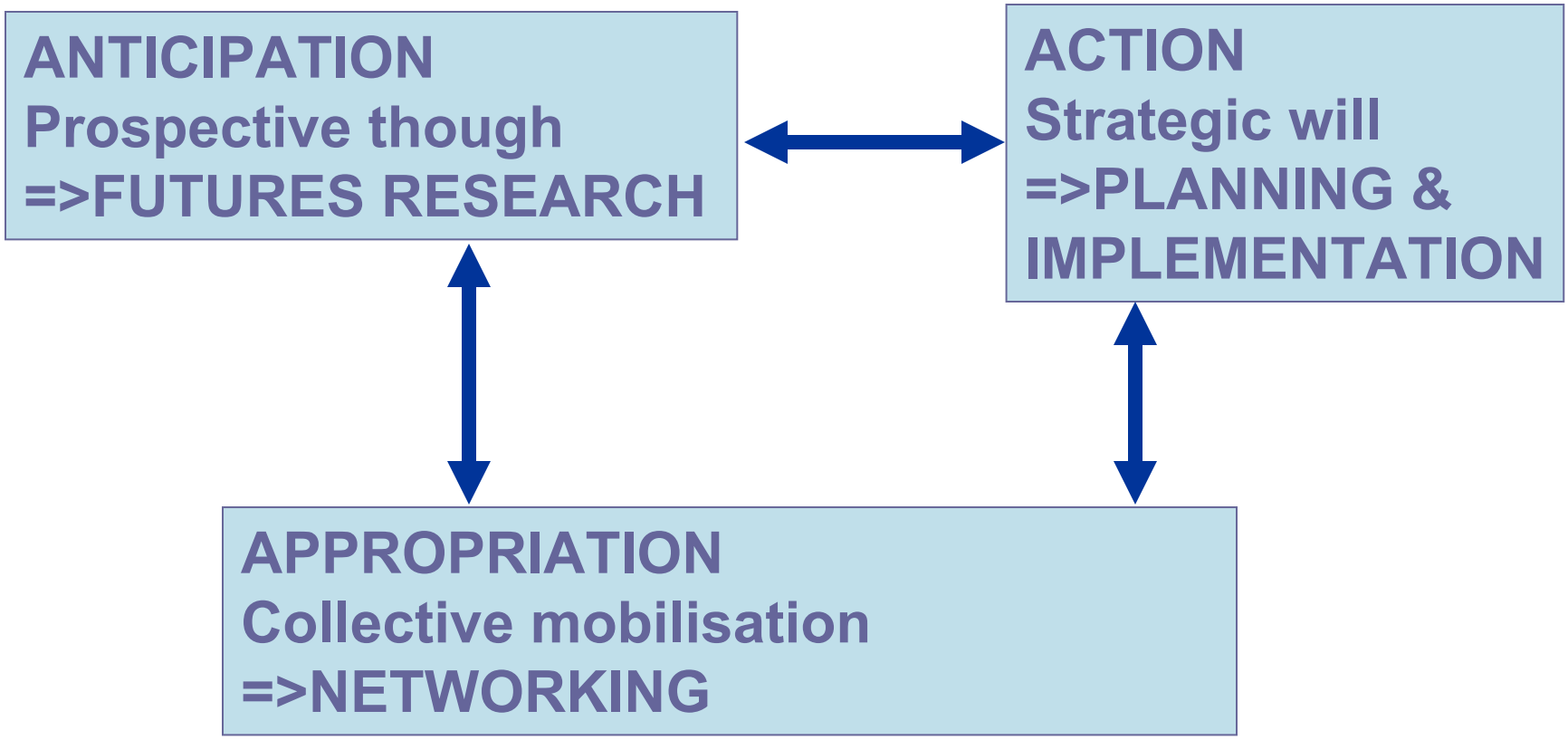
http://europa.eu.int/comm/public_opinion/quali_en.htm

SUMMING UP.....BROAD VIEW OF PROSPECTIVES NEEDED IN THE ENVIRONMENTAL SCANNING PROCESS



Source: Graf 2002

THE GREEK TRIANGLE AND FORESIGHT

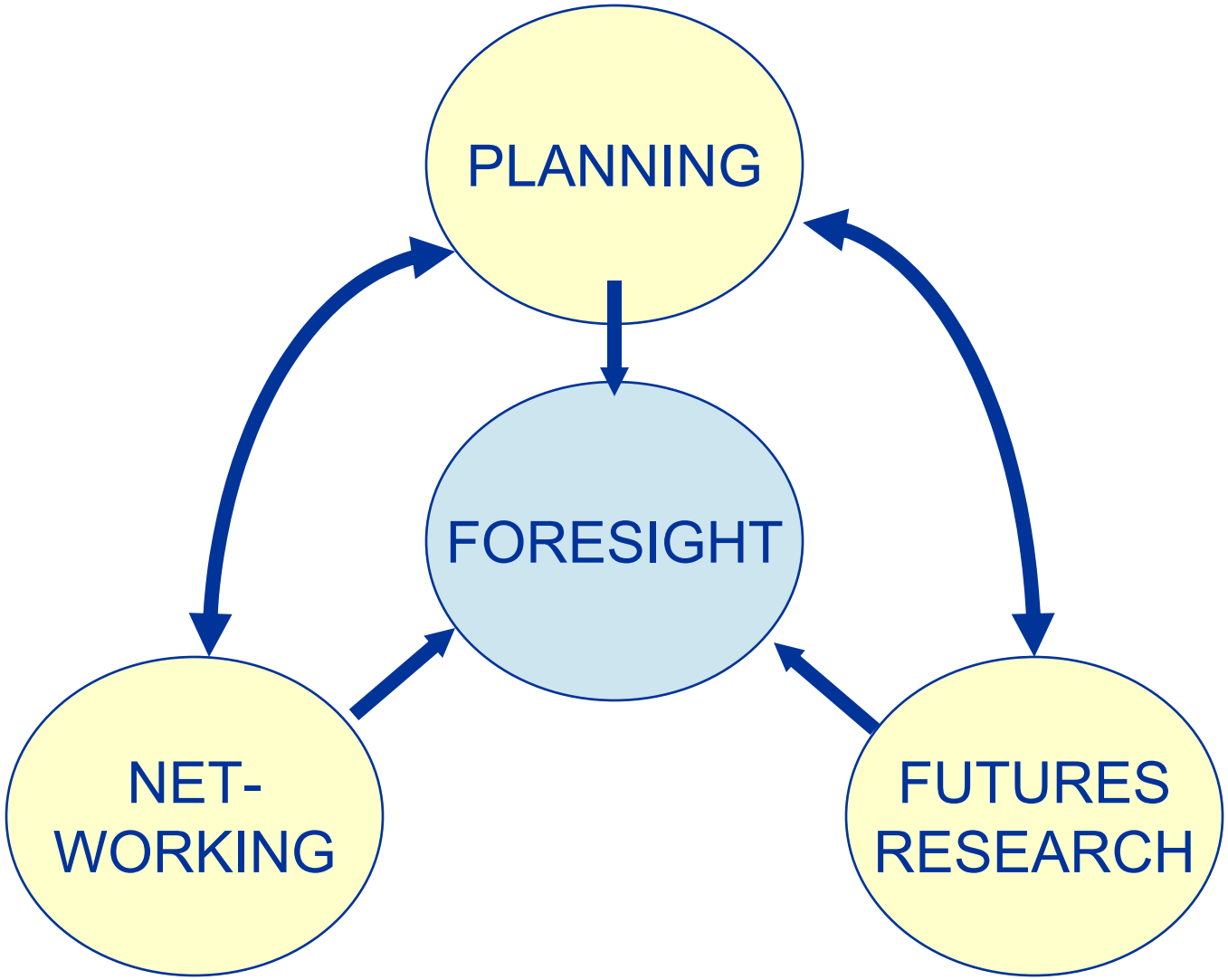


Source: Godet 1993

TYPICAL GOALS OF FORESIGHT PROGRAMMES

- COMPETITIVINESS
- STRATEGIC CHANGE
- PARTNERSHIP AND NETWORKING
- CULTURE CHANGE
- QUANTUM SHIFTS

A PERSPECTIVE OF FULLY-FLEDGED FORESIGHT



PLANNING: ”STILL ALIVE AND NEEDED”

In strategic planning, there has been a move from a “rational” approach aimed at achieving equilibrium and stability, to more evolutionary approaches. This follows recognition that high levels of uncertainty are the norm, not the exception, and that economic progress is more a matter of disruptive innovations than of the pursuit of equilibrium. In much modelling and rational planning it was assumed that we can grasp the dynamics of social and economic life on the basis of quantitative changes within stable structures: Qualitative changes frequently undermine such assumptions, and traditional “long-term planning” has been discredited. But the long-term still has to be taken into account in many decisions, and planners have sought better ways to do so.

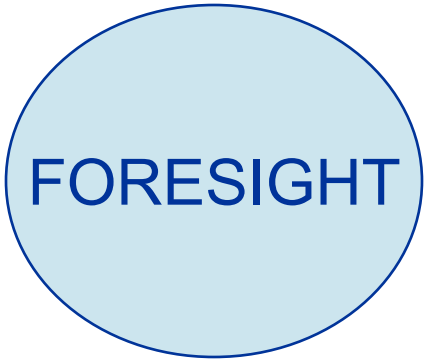
NETWORKING: ”NETWORK OR DIE”

Policy development has seen a shift from an elite-driven / top-down to a broader, more participatory approach. This reflects pressures for greater democratisation and legitimacy in political processes. Also, it builds on the increasing awareness that no single body (especially not a government agency!) can know everything that needs to be known in order to effect desired changes. Decision-makers have to live with the fact that knowledge is distributed widely. This is becoming ever more apparent as the world grows more complex (through advances in science and technology, through greater social differentiation, etc.). Thus intelligence-gathering and networking methods have to evolve, too.

FUTURES STUDIES: ”TOWARDS GREATER USER INVOLVEMENT”

In futures studies, there have been several important developments. One is a shift from emphasis on predictive approaches to more exploratory studies, and from one-off studies to more continual iterations of the process of envisioning future challenges and opportunities. Equally important is increasing recognition of the need to involve “users” in the process of study, rather than to present them with a vision or set of visions of the future that descends from “on high”. Part of the reason for this is that “futures researchers” have found that such involvement is often essential for the messages of their studies to be absorbed into policymaking in systematic and ongoing ways.

FORESIGHT INTELLIGENCE: ”BEYOND PURE ACADEMIC AND CONSULTATIVE MOTIVATIONS”



Foresight goes beyond academic or consultancy-based forecasts of the future (although it should take these into account). It is not, and does not displace existing decision-making and planning processes - rather, it complements and informs them, so as to increase their effectiveness.

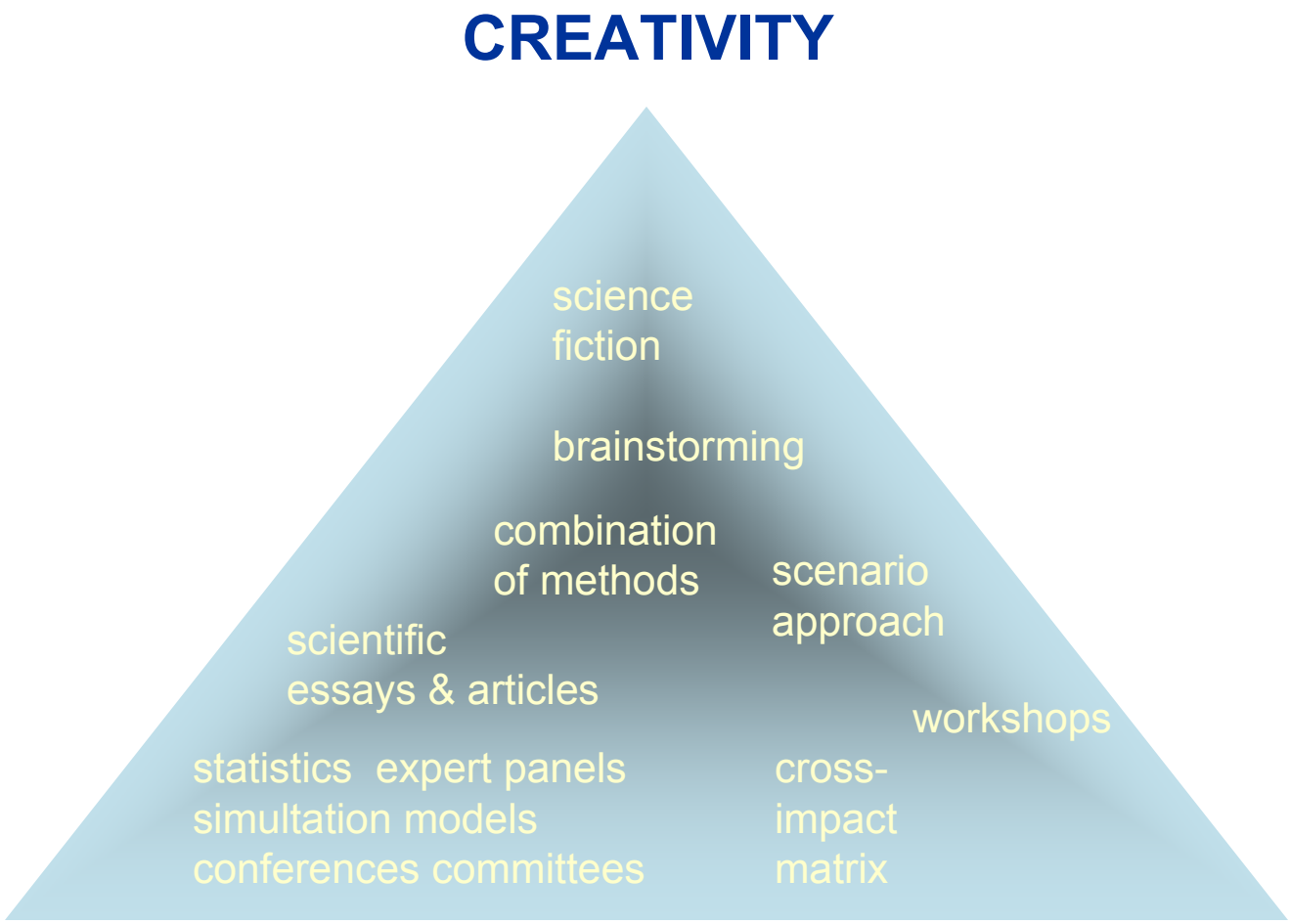
FORESIGHT: ”INTEGRATES TECHNOGRATIC AND DEMOCRATIC DECISION-MAKING”

It is important to recognise that KSF can be oriented at different points along a spectrum from technocratic to democratic decision making. In practice, the governance of complex contemporary societies often involves a mixture of both orientations. Furthermore, the tools we possess for either form of decision making are themselves evolving, and Foresight is now part of this process.

Technocratic Decision-making. Foresight provides policymakers with knowledge that they might not otherwise access, reflecting the wide dispersion of knowledge resources and expertise in the KS. Decisions can thus be made more efficiently and effectively. Having drawn on a wider knowledge pool may render these decisions more legitimate, too.

Democratic Decision-making. Foresight can be a tool for participation, bringing more stakeholders and points of view into the decision-making process. It is thus part of the armoury of methods for deliberative democracy, a way of enhancing social dialogue and informing more people about the key issues at stake – not just about decisions that have been taken for them.

FORESIGHT TRIANGLE



BASIC FORMS OF FORESIGHT ACTIVITIES: TOP-DOWN AND BOTTOM-UP

Top-down approaches are more like conventional futures studies, in that they place little stress on interaction: even where they draw on inputs from a wide range of sources, these are mainly processed by a small expert group. This group elicits inputs of evidence and views from the wider community, perhaps using methods such as Delphi questionnaires, public meetings and teach-ins, and calling expert witnesses to give seminars.

Bottom-up exercises place high stress on interaction, gathering opinions and information from a wide range of sources, and in principle securing more legitimacy for, "ownership" of, and networks established around the activity. They may solicit inputs about views about the design, orientation, content or dissemination of the Foresight activity. Methods to achieve this include discussions and presentations (including those on Internet websites). Methods also have to be employed to integrate such inputs; most commonly panels or specialist teams are tasked with this.

TYPICAL LEVELS OF FORESIGHT ACTIVITIES

- NATIONAL TECHNOLOGY AGENCIES
- MINISTRIES (IN FINLAND ESPECIALLY MINISTRY OF TRADE AND INDUSTRY AND MINISTRY OF LABOUR)

AND FUTURES COMMITTEE IN THE PARLIAMENT

- UNIVERSITIES
- GROUP OF COMPANIES OR NETWORKS OF COMPANIES
- COMPANY LEVEL

HOW TO ORGANISE FORESIGHT PROCESS? KEY QUESTIONS

Rationales – what are the arguments for conducting Foresight?

Objectives – what will Foresight set out to achieve and by when?

Review existing strategic arrangements – how will Foresight complement or challenge these?

Orientation – what will be the focus of Foresight?

Level – at what political/economic/social institutional 'level' is Foresight to be carried out?

Time horizon – how far out is Foresight to peer?

HOW TO ORGANISE FORESIGHT PROCESS? KEY QUESTIONS

Coverage – what sectors/issues/problems will an exercise cover?

Participation – what should be the *breadth* of actor engagement in an exercise?

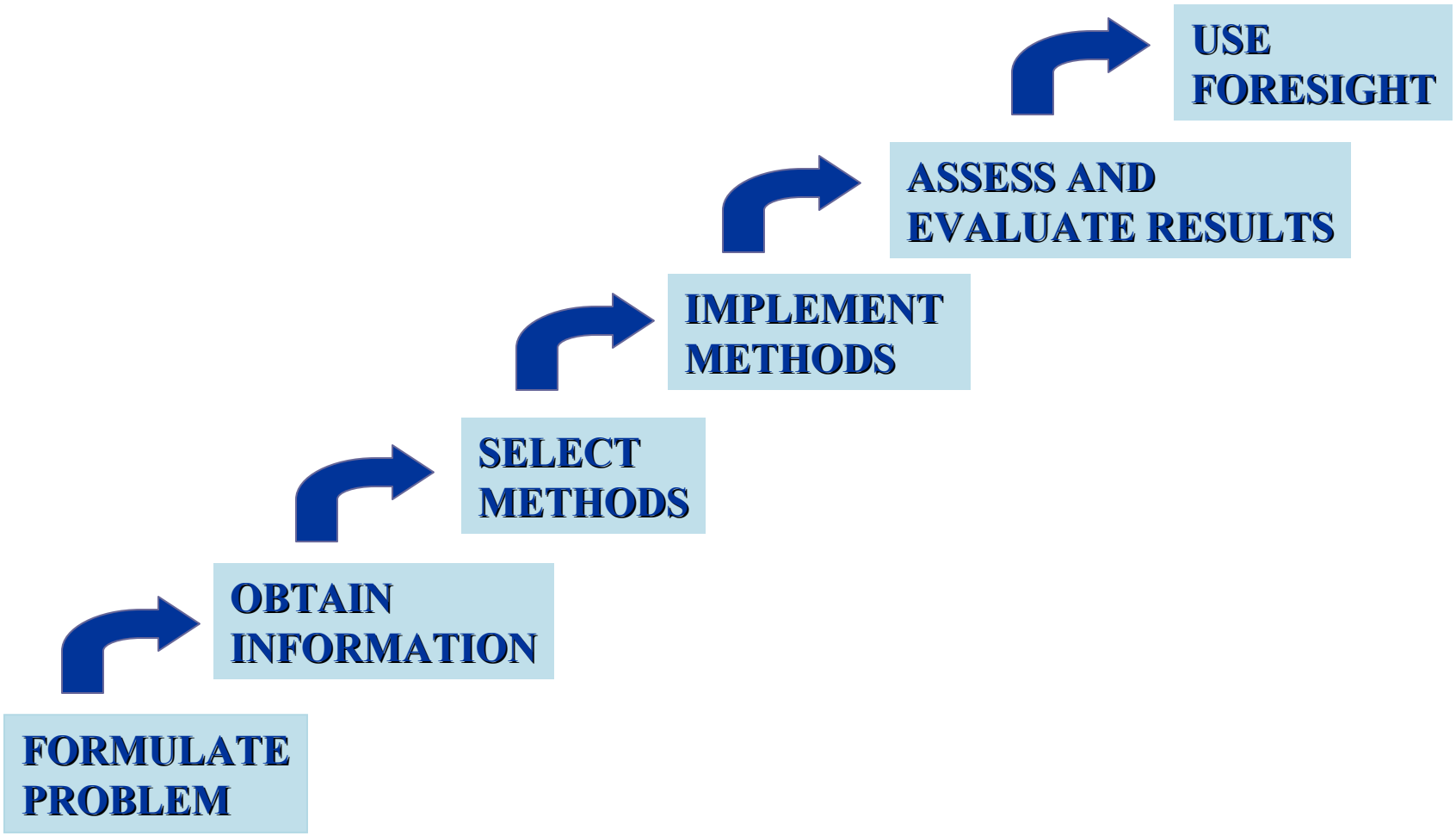
Consultation – what should be the *depth* of actor engagement in an exercise?

Duration & Cost – how long does a Foresight exercise last and how much does it cost?

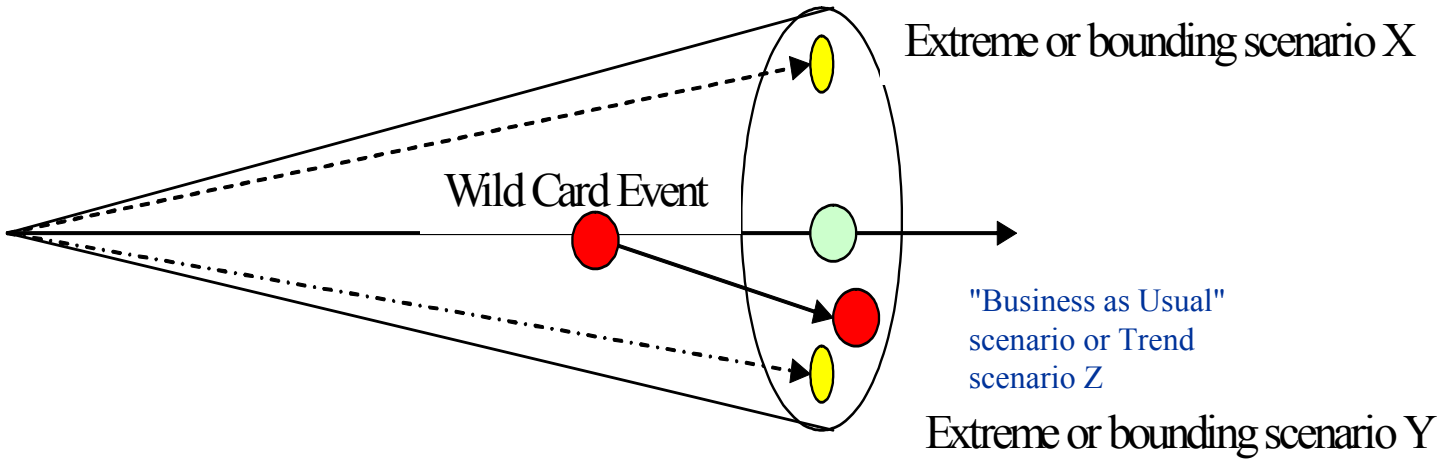
Methods – what methods are to be used at the various stages of an exercise?

Organisation & Management – how can Foresight be organised and managed?

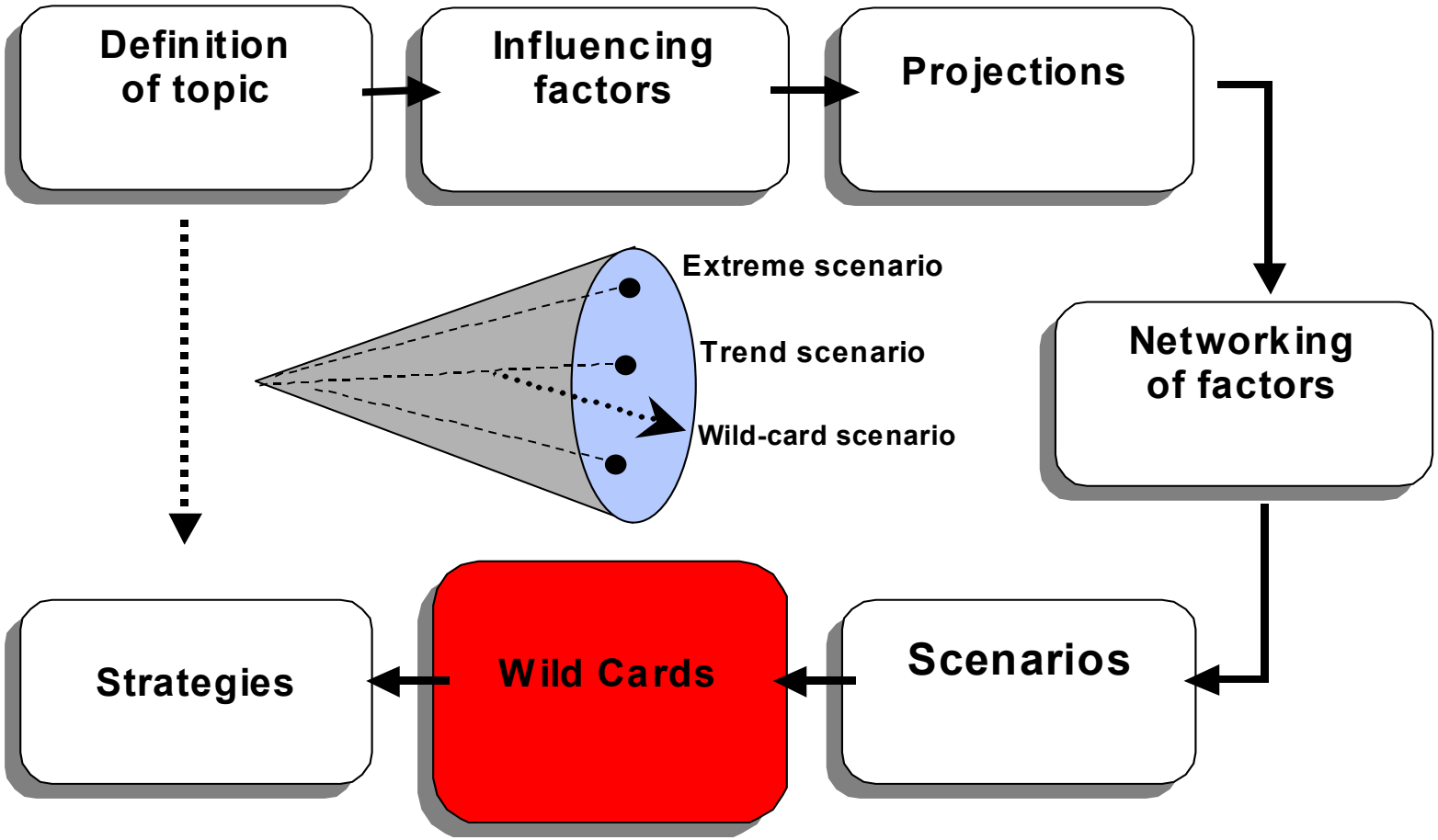
SELECTING FORESIGHT METHODS



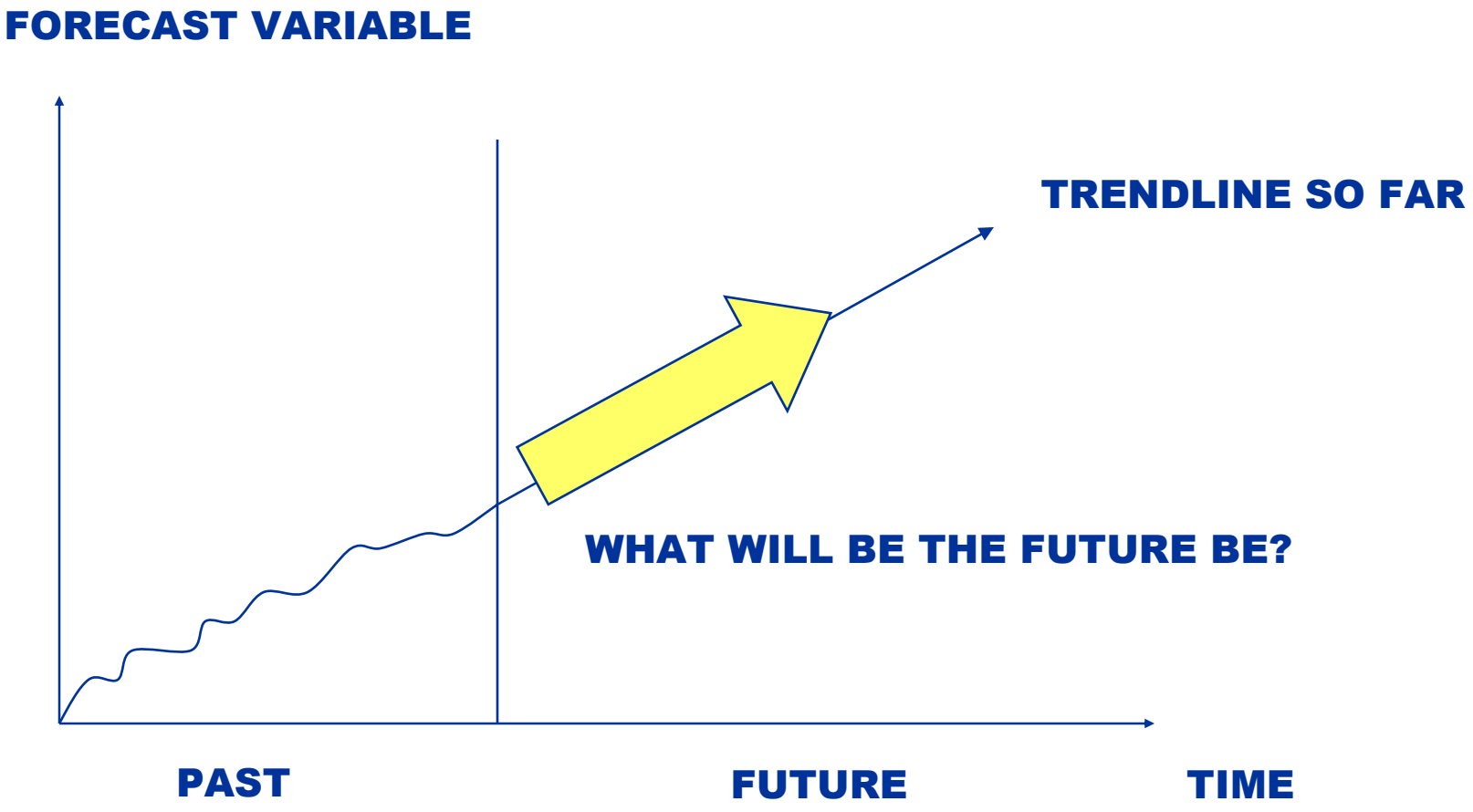
TREND, EXTREME SCENARIOS AND WILD CARD EVENTS



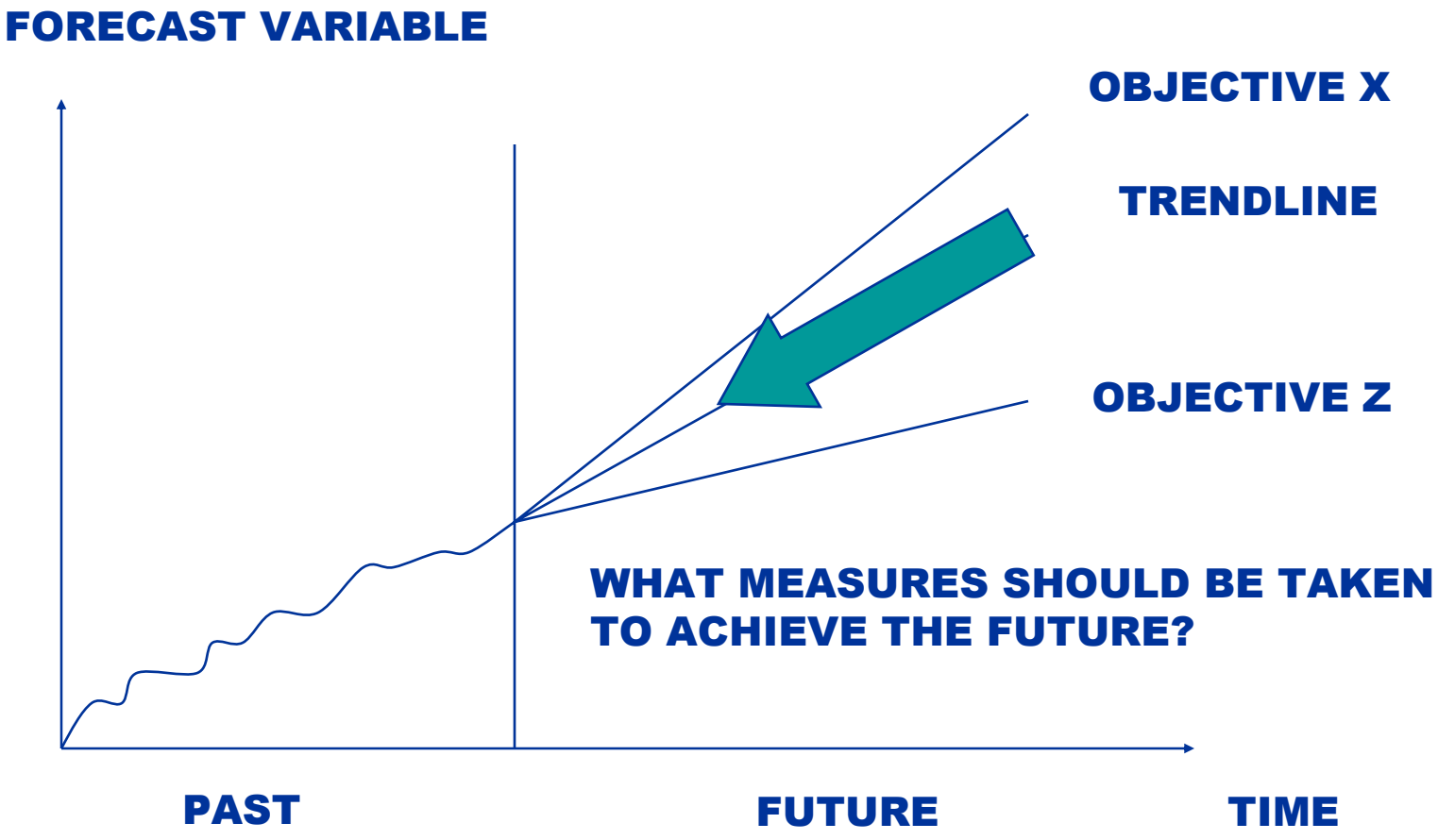
AN EXAMPLE OF FORESIGHT PROCESS: THE BASIC SCENARIO PROCESS PLUS A WILD CARD ELEMENT



POSITIVE APPROACH OF EXPLORATIVE FORWARD TREND SCENARIO



NORMATIVE APPROACH OF BACKCASTING TREND SCENARIOS



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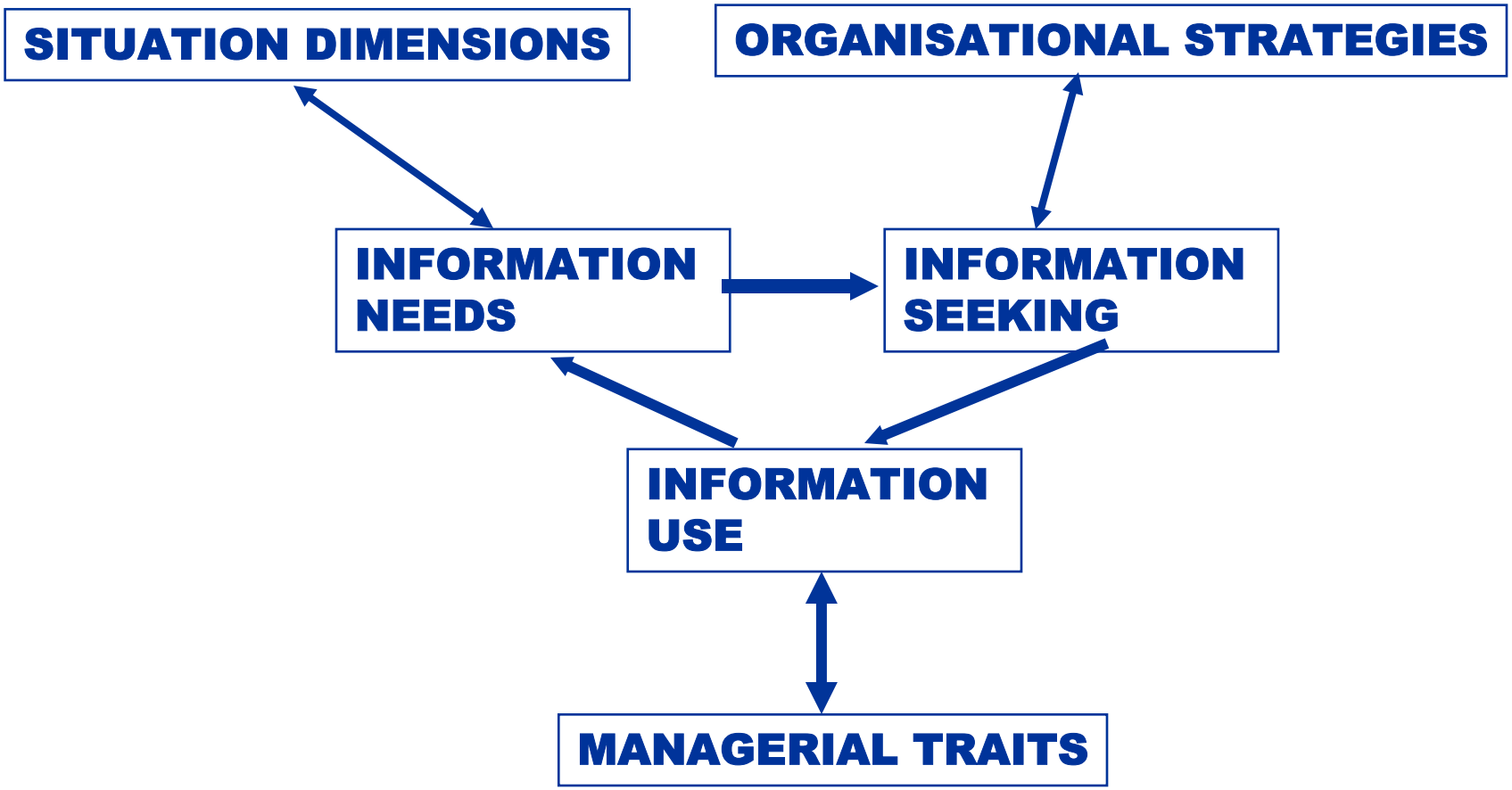

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http://informationr.net/ir/7-1/paper112.html
http://www.asaenet.org/environmental_scan/
http://www.infinitefutures.com/essays/prez/holescan/

Environmental Scanning Resources (Example Concerning Scanning Resources)

http://www.cce.cornell.edu/admin/program/documents/scan.htm
http://www.prnavigator.com/environmental_scanning.htm
http://choo.fis.utoronto.ca/esproject/

Leading Futurists Environmental Scanning Sources

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http://www.cabrillo.edu/index.html

http://www.cabrillo.cc.ca.us/pres/cmp/envscan.html

ENVIRONMENTAL SCANNING EXAMPLES

Social Technologies Environmental Scanning Reports (Global Scanning Example)

http://www.socialtechnologies.com/fc/index.asp

http://www.socialtechnologies.com/fc/tf/

Emerging Environmental Security Issues (AC/UNU Millennium Project Global Scanning Example)

http://www.acunu.org/millennium/env-scanning.html

The Early Childhood IDEA Environmental Scanning Network (Global Thematic Scanning Network)

http://www.ideapolicy.org/scanning_main.htm

BASIC EUROPEAN ENVIRONMENTAL SCANNING TOOLS

Public opinion scanning

http://europa.eu.int/comm/public_opinion/

Standard Eurobarometer

http://europa.eu.int/comm/public_opinion/standard_en.htm

Special Eurobarometer

http://europa.eu.int/comm/public_opinion/archives/special.htm

Candidate Countries Eurobaromer

http://europa.eu.int/comm/public_opinion/cceb_en.htm

Flash Eurobarometer

http://europa.eu.int/comm/public_opinion/archives/flash_arch.htm

Qualitative Studies

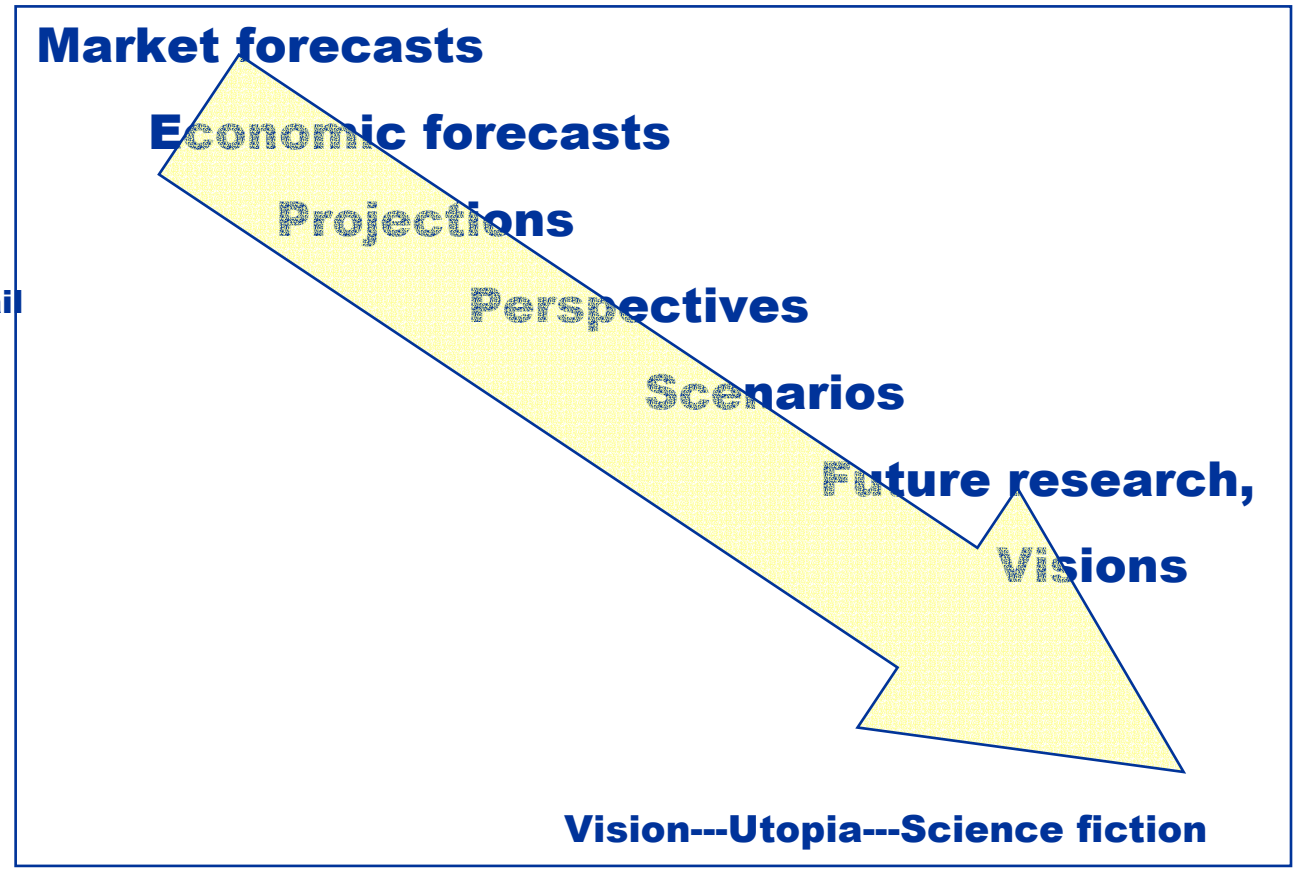
http://europa.eu.int/comm/public_opinion/quali_en.htm

BROAD VIEW OF PROSPECTIVES

High

Budget

-Amount of detail
-Degree of Quantifiability
-Degree of Objectivity
-Prabability



Low

Months

Years

Decades

High

Source: Graf 2002

CHALLENGES IN EUROPEAN FORESIGHT ACTIVITIES

-THE CRITICAL ROLE OF KNOWLEDGE MANAGEMENT IN FORESIGHT STUDIES

-KEY SKILLS FOR ACTIVE USE FORESIGHT INTELLIGENCE TOOLS

-FORESIGHT AND PROBLEM SOLVING TECHNIQUES

-DECISION SUPPORT SOFTWARE TOOLS

-INTERNET BASED DATA-MINING: SOURCES OF INFORMATION

-CONSOLIDATED TOOLS FOR FORESIGHT INTELLIGENCE: WWW-LINKS

-RELEVANT DATASOURCES AND DATABANKS FOR EUROPEAN KNOWLEDGE SOCIETY FORESIGHT

-FORESIGHT IN EUROPEAN ENLARGMENT PROCESS

FORESIGHT USERS AND FOCUS

FORESIGHT FOCUS	Social	Techno-logy	Sector deve-lopment	Territorial vision
POSSIBLE FORESIGHT USERS	Policy makers Consumers Associations Knowledge Infra-structure	Policy makers Universities Research organisations Industry	Policy makers Industry Chamber of Commerce SMEs	Policy makers Terrotorial Associations Unions

FORESIGHT OUTPUTS

	FORMAL OUTPUTS	INFORMAL OUTPUTS
FORMALISATION	Reports Books	Results & evaluation circulating within networks
DISSEMINATION	Workshops, newsletters, press articles, web sites	Development of new networks or new links within existing ones
NETWORKING	Institutionalisation of networks	Informal incorporation of results within strategic processes
STRATEGIC PROCESS	Formal incorporation of results within strategic process	Informal incorporation of results witihn strategic process

I Thank You for Your Attention!

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