



THE FUTURES TOOLKIT

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North East South West
INTERREG IIIC

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1 WHY USE FUTURES?

Thinking about the future is something that we all do as individuals, citizens, managers, policy makers or politicians. However thinking about the future can be difficult, confusing and, often, frightening. Futures tools help us to organise and interpret our thinking about the future and can help us to understand how to create the conditions in which our desired futures can be achieved.

At a time when all of us in Europe are facing uncertainties about the future opportunities and challenges we need to find ways in which we do not have to rely on ad hoc policies created from imperfect knowledge and constrained thinking.

Individuals, communities, businesses, organisations and public authorities often have to react to external events that may be caused by the effects of climate change, demographic shifts, the globalisation of trade and technological changes. These effects are unpredictable and potentially far-reaching, so reacting effectively and accurately requires at least an ability to understand, anticipate and deal with their potential impacts.

New approaches are needed that are creative and anticipatory.

Futures tools can provide these approaches.

Futures approaches use a variety of tools to stimulate engagement across society in understanding and debating the uncertain future. By this means present day policy choices can be made that will influence the achievement of the “desired” future.

While, Futures tools are frequently used to complement other tools such as planning, strategy and networking, ***futures tools usually deal with the greatest uncertainty and provide scope for choices to be made.*** Through the use of futures tools businesses, organisations and public authorities can deal with important challenges and trends in an intelligent and strategic way.

A Futures approach is therefore not simply an alternative to more conventional strategic planning approaches – rather it is an essential accompaniment to strategic planning providing a planning horizon that is both deeper (in time) and wider (in scope) than is typically provided by a strategic planning approaches.

The most common reasons for using futures tools include: -

- a need to create a fresh strategy for a region business or organisation arising either from the emergence of new opportunities or the negative impact of economic or social ‘shocks’;
- efforts to understand external trends in the context of their influence on an organisation, business sector or region
- the wish to develop a new trajectory of development based on an inclusive and fresh set of perspectives

Typically, the initiation of futures exercise will be stimulated by the need to take decisions with long term implications and the recognition that before decisions can

be taken it is necessary to generate a widespread dialogue about future choices and preferences.

The long term implications may arise because of the need to formulate longer term national and regional programmes, planning the future direction of an organisation or sector of industry or the need to plan major public spending with long-term implications, for example, infrastructure investments or research priorities for science and technology funding.

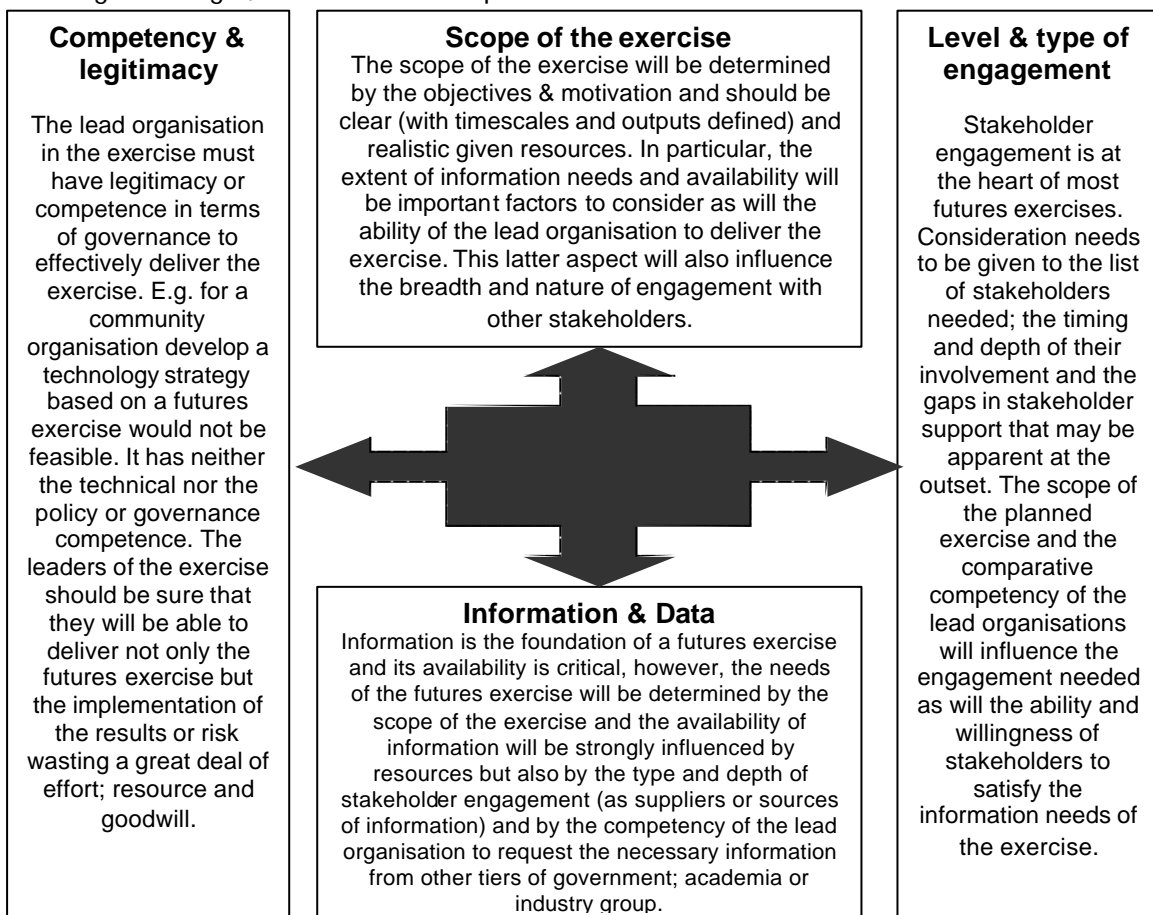
Other motivations could simply be to refresh the thinking, mindsets or assumptions that have underpinned policy or strategic thinking for a number of years and thereby stimulate new thinking in a region, organisation or business.

2 HOW CAN WE BEST PREPARE FOR USING FUTURES?

In this section you will:

- Learn about the main issues that should be considered in preparing for a Futures exercise
- Obtain a 'check-list' of questions to be considered
- Understand the importance of being both systematic and iterative in preparing for a Futures exercise

The use of futures applications in regional development work requires careful and thoughtful preparation. This applies to the choice of the specific futures tools to be used (see section 4 of the Toolkit); but it equally applies to the understanding of the context within which the futures exercise will be carried out. In particular there are (at least) 4 key issues that need to be fully discussed and agreed upon before the exercise can get underway or indeed before the exercise can be launched effectively. These key issues are inter-related and should not be understood to operate in a strictly linear thought process – the issues, reflections on them and the decisions taken on them are iterative, dynamic and may not be concluded before setting out on the futures exercise. However, a final “check-through” of logic, rationale and implications should be carried out.



Bear in mind that these considerations are not exhaustive and may not be linear. You may need to begin your considerations with Legitimacy and competence rather than Determining the scope for instance.

Wherever you begin to consider these issues you will find that they are closely intertwined and you will need to move towards achieving a resolution of the issues in parallel.

CHECK LIST OF QUESTIONS TO BE ADDRESSED

Determining the scope of the exercise

1. What are your objectives and motivations in conducting a futures exercise?
 - Do these readily suggest the scope for your exercise?
 - Are the objectives and motivations compatible with the scope or focus that you have in mind?
 - Are you confident that you are going to achieve your objectives by focusing on the areas or topics that you have identified for your futures exercise?
2. Do you think that you will have the resources necessary for an exercise of this scope and focus? (See also: **Information & data**)
3. Is the scope in line with the remit, role or responsibilities of the lead organisation? (See also: **Competency & legitimacy**)
4. Does the scope that you have chosen lead you to a clear list of other stakeholders or actors who you will need to engage in the exercise? (See also: **Level & type of engagement**)

If you answer NO to any of these questions then you should spend further time confirming your objectives: clarifying the scope of the exercise; potentially extend and strengthen your partners and stakeholders group or seek additional resources to allow the required information and data to match the scope that you have decided upon.

Competency & Legitimacy

Having decided on your objectives and an initial scope for the exercise:

1. Are you sure that the lead body has the legal or administrative competence to conduct an exercise of this scope? (See also: **Determining the Scope**)
2. Does the lead body or its partners have the technical competence to carry through the exercise? (See also: **Information & data and Level & type of engagement**)
3. Do you need additional partners or expertise to achieve the results of the exercise (See also: **Level & type of Engagement**)
4. Does your lead body or its partners in the futures exercise intend to implement the results of the exercise? If so, does it have the legitimacy and competence to implement or, if it does not intend to implement the results, does it have the necessary 'political capital' to use its partner's time in this way? (See also: **Scope and Level & type of engagement**)

If you answer NO to any of these questions then you may need to reconsider the scope of the exercise; seek a new lead body or extend and strengthen the group of stakeholders for the exercise.

Information & Data

The scope of the futures exercise will determine, to a large extent, the type and source of information and data that you will need. However information has a monetary as well as a political cost.

1. Do you think that you will have the resources necessary for an exercise of this scope and focus? (See also: ***Scope of the exercise***)
2. Will your partners and stakeholders that you engage with during the exercise be able or willing to contribute the necessary information (both codified & tacit)? (***See also: Legitimacy & competence and Level & type of engagement***)
3. Does the lead body carry sufficient political 'weight' or political 'capital' to ensure the availability of the information from others including academia or industry group? (***See also: Legitimacy & competence***)

If you answer NO to any of these questions then you may need to go back and reassess your objectives; the scope of the exercise; the identity of the lead body and key stakeholders or seek alternative routes to access the required information and data.

Level & Type of Engagement

While stakeholder engagement is at the heart of futures exercises, the range of stakeholders needed and their precise involvement in the exercise may not be immediately clear.

1. Is the scope of the futures exercise proposed complementary to the list of stakeholders and partners with which you intend to engage? (***See also: Determining the Scope***)
2. Are the proposed stakeholders and partners in agreement with the objectives, scope and leadership of the futures exercise? (***See also: Determining the Scope and Legitimacy & competence***)
3. Are the stakeholders and partners able and willing to help satisfy the information needs of the exercise? (***See also: Information & data***)
4. Do the proposed stakeholders and partners bring the required legitimacy and technical competencies to the futures exercise? (***See also: Legitimacy and competence***)

If you answer NO to any of these questions then you may need to go back and reassess the scope of the exercise; the list of key stakeholders and partners that you have in mind or seek alternative routes to access the required information and data.

You should now:

- **Understand** the issues that need to be considered in preparing for a futures exercise
- **Have answered** the critical questions set out in the Check list
- **Be ready** to launch a futures exercise

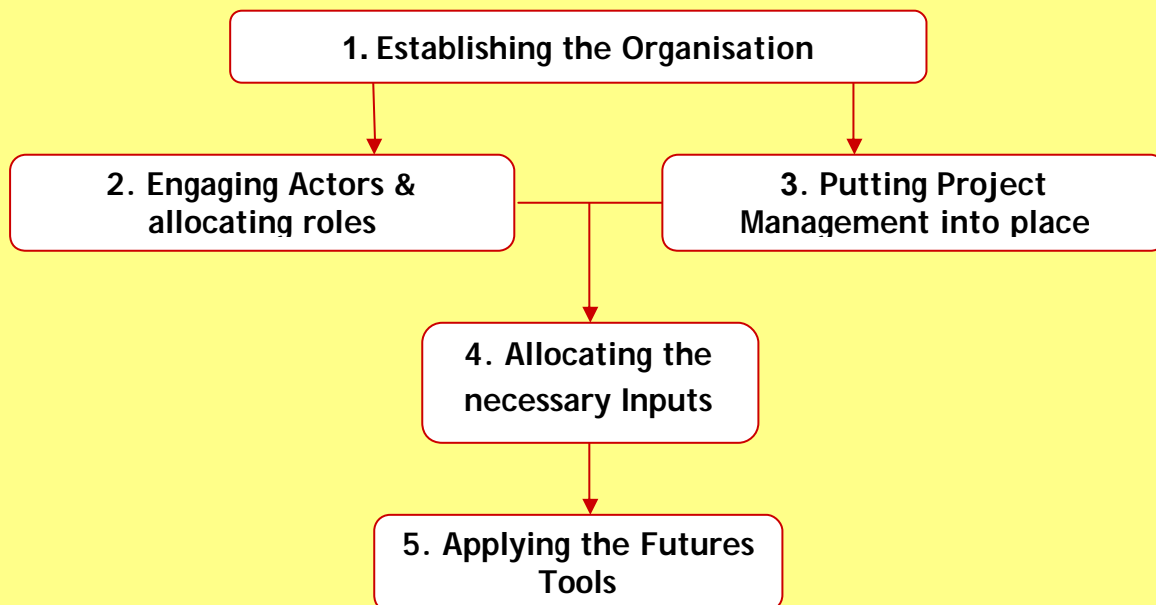
3 LAUNCHING A FUTURES EXERCISE

In this section you will:

- **Learn** about the main steps required in order to launch a futures exercise
- **Understand** the impact on organisation, engagement and resource requirements that different types of futures exercise may have
- **Benefit** from information regarding case studies of actual futures exercises

Once careful thought has been given to the preparation for the futures exercise and the questions suggested in the check list in Section 2 answered satisfactorily, the futures exercise can be launched. Even here however there will be questions and options that need to be considered.

Futures activities are extensive undertakings that require monitoring and organisation to make sure that the objectives of the exercise are achieved. Typically, a steering committee, a dedicated project management team, and consultative groups of stakeholders and experts will need to be engaged and resources allocated. The basic organisation and structure for launching a futures exercise will typically take the following stepped form:



3.1 Establishing the Organisation

In organising a Futures exercises **three chief aspects** must be considered at the outset:

- **Formal structure**
- **Decision processes**
- **Resources**

Every one of these aspects has a variety of activities, varying in importance and depending on the type of exercise planned. For example, futures exercise may be tightly or loosely managed (depending on the scope of the exercise and the competence of the leaders of the exercise) or could be a coordination of activities that are already underway within the organisation or amongst the stakeholders concerned.

As a consequence, identifying the stakeholders and their roles is a key early step and was referred to in Section 2 of the Toolkit and is further referred to in Section 3.2.

A fully developed flexible and responsive organisation structure should be created and adopted within which reasoned consensus can be secured - regarding the scope, organisation and structure of the futures exercise.

The organisation blueprint can cover

- **Formal structure**
- **Management tasks and responsibilities**
- **Milestones & Project phases**
- **Decision making processes**

The following table summarises the variations and options that may appear in the organisation of a futures exercise.

	Tightly centrally managed autonomous project	Loosely centrally managed autonomous project	Coordination of embedded activities
Formal Structure¹			
Identify stakeholders	Essential	Essential	Essential
Appoint a steering committee	Essential	Necessary	Not essential
Set up a management team	Essential	Essential	One individual or more may be sufficient
Recruit a champion	Essential	Useful	No real need
Recruit expertise ²	Essential	Useful	No
Decision Process³			
Define the management style	Essential	Useful	Non-essential
Prepare a brief	Key	Coordination of group plans	Non-essential
Assign jobs to each group	Essential	No	Essential
Resource Procurement			
Identify a sponsor	Essential	Essential	Useful
Obtain resources	Essential	Essential	Essential
Identify existing inputs	Essential	Useful	Useful

¹ All Futures projects require a steering committee and management team instituted as an early step.

² Activities can also employ "expert" groups or panels focussing on particular issues. The mechanics of setting up these groups needs careful consideration since their composition will impact on the whole exercise.

³ The decision making process – certainly if the project is managed centrally – requires definition e.g. decisions made by the project manager or the steering committee so that the terms of conduct can be clearly set out and adhered to etc. Responsibilities and tasks can then be allotted to the various groups appointed.

Tasks commonly associated with a Futures exercise for which resources need to be identified and responsibilities allocated are detailed below:

Typical Futures Tasks	
Nomination of group members	Implementing Futures tools and methods, e.g. scenarios
Managing the process	Organisation of specific issue conferences
Organisation of public debate on specific issues	Preparing synthesis papers and reports
Preparation of specific issue reports	Organisation of expert hearings
Identification of existing literature	Preparation of concluding report

3.2 Stakeholders, Actors & their Tasks

The identities, roles and responsibilities of stakeholders or 'actors' require early and precise definition. Such roles may include being on the steering committee, in the executive project management team, as stakeholders of user/target groups, or as sponsors of the futures exercise.

Alternatively actors can function as promoters, champions, political support, experts, process advisors or sit on a monitoring group.

Stakeholders and actors may themselves play an active role in the materials and implementation of futures tools. In these roles they will usually work alongside expert resources that have been identified in order to implement the exercise.

There are various advantages and disadvantages evident in identifying and sourcing expert input depending on the focus - narrow or broad focus - of the scope decided for the futures exercise (see Section 2):

	Broad consultation	Narrow consultation
Advantages	<ul style="list-style-type: none"> ■ Great number of experts involved ■ Transparent procedure 	<ul style="list-style-type: none"> ■ Quick ■ Relatively inexpensive
Disadvantages	<ul style="list-style-type: none"> ■ Costly and lengthy procedure 	<ul style="list-style-type: none"> ■ Small group of experts may have specific interests ■ Danger of dominating opinion makers

In addition the stakeholder or actor's involvement and roles will differ between *autonomous projects* and *embedded Futures* (see Section 3.1 above). In an embedded Futures exercise that is using international resources and inputs, the actors involved will inevitably be linked closely to the project's management and the participating organisation(s) and probably core staff of the institution. Conversely, in autonomous projects wider involvement is more likely, linked to the scale of the exercise.

	<i>Embedded Futures activities</i>	<i>Autonomous projects</i>
Key Actors	Promoters Stakeholders	Promoters Stakeholders Steering Committee Project Team
Actors usually involved	Futures activities coordinator Experts	Champions Experts
Actors involved in large scale projects only	Does not apply	Citizens Politicians Monitoring group Process experts

3.3 Project Management

Classical but flexible project management structures and conventions are crucial to success of the exercise. Since Futures exercises should be flexible and, at times, iterative management and monitoring tools should consist of indicators providing the relevant actors with relevant data.

Setting up a simple PERT table similar to that illustrated below will be invaluable:

PROJECT MAIN MILESTONES	Expected deadline	Target date	Corrective actions		Budget share	Budget actual	Corrective actions	
			What	Who & When			What	Who & When
Engage stakeholders								
Set-up the infrastructure								
Choose focus and methods								
Gather existing inputs								
Produce new knowledge								
Develop a shared vision								
Produce final deliverables								
Disseminate results								
Monitor the activities								
Incorporate the outputs in stakeholders decision processes								

3.4 Allocating the necessary inputs

Providing the necessary inputs for a futures exercise is both a question of resourcing (people; expertise; funding etc) and of information gathering and assimilation. On the question of resources, the issues and questions raised in Section 2 are highly relevant. If the scope of the exercise is balanced by the competency and legitimacy of the leading stakeholders as well as by an effective engagement of key stakeholders and actors... then the allocation of the resources

necessary for delivery of the futures exercise should be assured. However, the exercise may struggle for resources if the key stakeholders have not been engaged effectively or if the scope of the exercise is not balanced by the legitimate role of the key instigators of the exercise.

On the question of specific information gathering and assimilation, it may be useful to regard the information as falling within two categories: gathering of existing information (passive) and production of new material and information (active).

If these resources are limited or expensive, it may also be sensible to take into account the minimum competencies required to commence. You may have to reassess the scope of your exercise if limitations have been identified, as noted in Section 2.

However, it may be necessary to consider accessing external human/network resources that have an affinity or synergy with the main focus or scope of the futures exercise (e.g. Sustainable Development or Information Society networks).

- **Passive sources of information** include any type of information or data regarding the current status of the organisation or region and any data that will allow you to construct a retrospective analysis of the main trends (i.e. economic, social and demographic trends), both quantitative and qualitative.
- **Active sources of information** largely include 'resources' usable during the course of the exercise e.g. experts and networks engaged in the futures exercise.

3.5 Applying the Futures Toolkit

The Futures Toolkit consists, initially, of 5 formal Futures methods with their appropriateness dependent upon the context and scope of the exercise you envisage. Section 5 of the Futures Toolkit provides a detailed presentation of the 5 methods used in Futurreg and will help you in determining the most appropriate for the type of exercise you envisage. The case studies included in Section 9 provide a wide perspective on the preparation and launch of different types of Futures methods used in specific contexts both single and in combination.

You should now:

- **Understand** the main steps required in order to launch a futures exercise
- **Understand** the impact on organisation, engagement and resource requirements that different types of futures exercise may have
- **Be ready to consider** which futures tools to use in your exercise and how to go about selecting the most appropriate tool.

4 SELECTION OF TOOLS

In this section you will:

- **Learn** about the main considerations that will be involved in helping you to choose the most appropriate futures tool for your exercise
- **Use a diagnostic tool** related to the motivations and scope for your futures exercise to aid you in your selection

The selection of futures tools and methods appropriate for the context, objectives and resources of the futures exercise (see previous sections) is a crucial stage of a futures exercise. Designing and launching a futures exercise without careful selection of the appropriate futures tool and method will almost inevitably lead to a failure to achieve the required results, remove the appetite to use futures approaches on subsequent occasions and could even undermine the credibility of the lead bodies and committed stakeholders. There are therefore considerable risks and rewards at stake at this stage of the futures exercise.

This section therefore facilitates the identification of tools appropriate to the objectives and circumstances of the regional actors' project. The approach includes a diagnostic element although the underpinning principle is facilitative and not prescriptive.

Most futures exercises use a mixture of methods to achieve their aims. In the FUTURREG toolkit approach, this mixed approach is advocated and the tools should be considered both individually and in parallel to ensure that they address the project aims from a number of different angles.

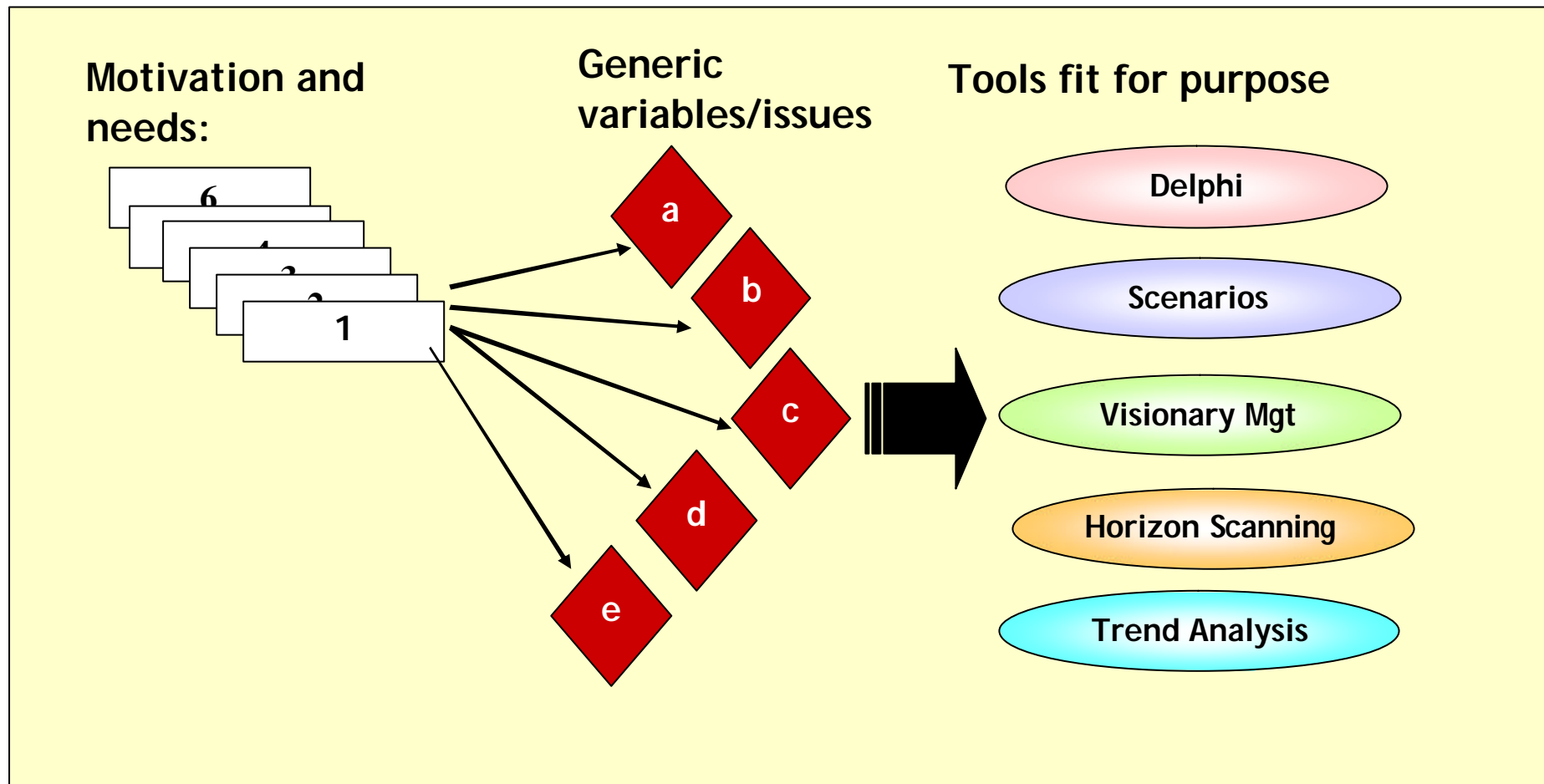
Although it is possible for regional development actors to use the toolkit independently, the use of experts is beneficial to ensure that the general principles contained within the toolkit are adapted to an optimum level for the local context and objectives of the specific exercise.

Structure of the approach

The facilitative approach consists of three levels:

1. **Typical motivations** - 'classic' examples based on the typical motivations underpinning the decision to use a futures approach. A cross-section of these is presented to represent the typical situations where futures tools can add value. (This list presented is not exhaustive, although regional actors should be able to identify examples that are comparable or equivalent to their own.)
2. **Generic variables** related to classic examples: this level will extract the variables that are relevant to the motivation and classic examples
3. **Outline of tools fit for purpose**: this level will identify tools that address the issues outlined under variables

STRUCTURE OF THE SELECTION APPROACH



'DIAGNOSTIC' MATRIX OF MOTIVATIONS, VARIABLES AND TOOLS

		Variables/ Issues				
		Engaging stakeholders	Assessing key external influences/drivers for the organisation/region	Understanding current position and likely future path	Soliciting expert views	Networking and communication of key issues
Motivations	Developing a new strategy in the region	Scenario building Visionary management Futures workshop	Scenario building Trends analysis	Trends analysis	Delphi	Futures workshop
	Understand the impact of external influences on the organisation	Delphi Futures workshop	Scenario building Futures workshop		Delphi Horizon scanning	Horizon scanning
	Help the region through a period of economic restructuring	Visionary management Scenario building	Scenario building	Trends analysis	Delphi Expert panel	
	Decide in which science and technology areas/sectors to invest	Scenario building Trends analysis	Scenario building	Trends analysis	Delphi Multi Sector Qualitative Analysis	Scenario building
	Generate widespread dialogue about the future of the region	Visionary management Scenario building		Trends analysis	Delphi	Scenario building Visionary management
	Build organisational and regional capacity to deal with the future	Scenario building	Horizon scanning Scenario building		Horizon scanning Delphi	
	Provide anticipatory intelligence for actors in the region	Scenario building	Horizon scanning	Trends analysis	Horizon scanning Trends analysis Delphi	
	Challenge mindsets, shake off complacency	Scenario building Futures workshop	Trends analysis Futures workshop			Scenario building Futures workshop

Users of the toolkit may 'navigate' their way through the Diagnostic Matrix of Motivations, Variables and Tools to identify tools that are appropriate for their particular needs and exercise.

For example, for those actors interested in developing a new strategy for the region using a futures-based approach, engaging stakeholders might be undertaken through scenario building, visionary management and/or futures workshops. Assessing key external influences and drivers for the region could be achieved through scenario building and/or trend analysis.

The Diagnostic Matrix is designed to facilitate users in identifying tools that are appropriate for the objectives and purpose of their exercise. This should constitute a first step in establishing the detailed requirements of the exercise in terms of methodology, approaches and resources. The complexity and diversity of each exercises necessitates a second step - of more detailed analysis. Users will often be supported by experienced external agencies (e.g. consultants) in this process although the more detailed information on tools and case studies contained within this toolkit (and in the accompanying documentation) provides a basis for users to conduct their own analysis and research. Most regional development users are assumed to have multiple tasks to oversee simultaneously and may feel that, in the scope of the exercise, an expert intervention is more (cost) effective.

You should now:

- Understand the main motivations and issues involved in using futures tools
- Understand which tools are generally used for specific purposes (through a diagnostic process)
- Be ready to do more detailed analysis of individual futures tools.

5 INDIVIDUAL TOOLS: DESCRIPTIONS, USES & IMPLEMENTATION

In this section you will:

- Learn about key tools used in futures-based approaches

This section provides an overview of the principal tools used within FUTURREG. More detailed reports are available on the project website www.futurreg.net. The descriptions illustrate how the tools can address the motivations/needs and issues/variables of the regional actors and their projects. Where relevant they are cross-referenced to case studies of FUTURREG regional sub-project futures exercises in Section 9.B of this Toolkit, in which the tools were employed singly or in combination.

5.1 Scenario Building

What are Scenarios?

Scenarios are special stories that portray plausible futures. One expert describes scenario building as 'a tool for ordering one's perceptions about alternative futures environments in which one's decisions might be played out' (Schwartz, 1996: 4). Scenarios can be very powerful tools to contemplate the range of possible futures that could develop from the influence of key drivers, events and issues. Although scenarios can take advantage of quantitative forecasts and projections, scenarios are not designed primarily to predict the future per se, but rather to develop capacity to consider a range of possible futures, developed from the interactions between important variables.

Scenario Building is different to other analytical methods in its focus on plausible futures. Methodologically, it digresses from some of the quantitative methods of analysis that seek to understand the future. Information on trends is a very important input in developing scenarios. However, scenarios are not merely extrapolations of current trends. To understand how the future might develop, it is important to note that 'most if not all trends eventually change direction and speed as time passes' (Cornish, 2004: 99). Inherent within scenario building is an acceptance of complexity and non-linear thinking. Scenarios can use the same essential set of variables or issues but construct different futures based on how they might interact differently.

Usually, a number of scenarios are developed in parallel. The typical number of scenarios developed to address a particular issue is three to four. The scenarios are researched to provide a sufficient level of plausibility, detail and scope for real decision-making.

Objectives and Main Uses

Scenario Building has been used both in companies and in public organisation to address a number of objectives. Within public organisations, the main uses made of scenarios are the following:

- ⇒ Development of strategy and policy: this is a typical use of scenarios in public sector organisations. Scenarios can be used as a key tool in the development of a variety of strategies and policies (thematic, spatial and organisational), e.g. a new innovation strategy, a corporate plan, a territorial or spatial plan;
- ⇒ Stimulate critical thinking, challenge assumptions - within organisations, the general population. All sorts of issues can be addressed using scenarios, and on different scales, e.g. regions might a scenario building approach to challenge stakeholders to think about scenarios that deal with globalisation and climate change. This approach can be used equally for the internal processes and culture of the organisation.

Why use Scenarios?

The Scenario Building approach has several advantages:

- ⇒ Offers a non-linear and dynamic way of thinking
- ⇒ Ability to deal with complexity, to consider multiple variables simultaneously, and with 'different interpretation' over time
- ⇒ Counteracts the historical bias of quantitative forecasting approaches
- ⇒ Challenge assumptions
- ⇒ Thinking "outside in" - big, external forces
- ⇒ Creating common language and understanding - working across disciplines, departments etc
- ⇒ Organisational alignment to vision
- ⇒ Develop group of people with ability to think strategically

The main benefits of scenarios outlined by Shell (cited in Ringland, 2002: 4) are:

Scenarios help us to understand today better by imagining tomorrow, increasing the breadth of vision and enabling us to spot change earlier.

Effective future thinking brings a reduction in the level of "crisis management" and improves management capability, particularly change management.

Scenarios provide an effective mechanism for assessing existing strategies and plans and developing and assessing options.

Timescale

There is no prescribed timescale for scenarios. It varies according to organisational needs, question addressed and themes covered. Generally scenarios cover periods of 3-5, 10, 20, or even 50 years. Examples of medium to longer term timescales include

- ⇒ CIA, Global Trends (2015)
- ⇒ Shell, Energy needs, choices and possibilities (2050)

Outline of Implementation Steps

The following implementation outline is a common approach, developed by Schwartz (1996) - steps 1 to 8 - and extended by Ringland (2002) - steps 9 to 12.

Step 1: Identify the focal issue or decision

Step 2: Key forces in the local environment (microenvironment)

Step 3: Driving forces (macro environment)

Step 4: Rank by importance and uncertainty

Step 6: Fleshing out the scenarios

Step 7: Implications

Step 8: Selection of leading indicators and signposts

Step 9: Feed the scenarios back to those consulted

Step 10: Discuss the strategic options

Step 11: Agree the implementation plan

Step 12: Publicise the scenarios

5.2 DELPHI

What is Delphi?

Delphi is a tool for generating a series of expert opinions on a given subject. Usually, experts give their judgement - on an individual basis - on the specific questions posed. The Delphi Method is based on a "structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback" (Adler and Ziglio, 1996). According to Helmer (1977) "Delphi represents a useful communication device among a group of experts and thus facilitates the formation of a group judgement".

Objectives and main uses

The objective of most Delphi applications is the reliable and creative exploration of ideas or the production of suitable information for decision-making.

While many people label Delphi a forecasting procedure because of its significant use in that area, there is a surprising variety of other application areas.

Among those already developed we find:

- ⇒ Gathering current and historical data not accurately known or available
- ⇒ Examining the significance of historical events
- ⇒ Evaluating possible budget allocations
- ⇒ Exploring urban and regional planning options
- ⇒ Planning university campus and curriculum development

- ⇒ Putting together the structure of a model
- ⇒ Delineating the pros and cons associated with potential policy options
- ⇒ Developing causal relationships in complex economic or social Phenomena
- ⇒ Distinguishing and clarifying real and perceived human motivations
- ⇒ Exposing priorities of personal values, social goal

Timescale

The time horizon of Delphi is the long run (more than 20 years), when it proves to be a really useful method. In the late 50's, 'long range' was defined as the span often to fifty years. There are also cases, where the method was used for short range forecasting (2-3 years).

Implementation

The Delphi applications are practical when accurate information is unavailable or expensive to obtain, or evaluation models require subjective inputs to the point where they become the dominating parameters. Thus, the method is quite time consuming. "A single round of a simple application requires three weeks; a three-round Delphi is at least a three to four months affair, including preparation and analysis time" (Gordon, 1994).

Technology example

The Delphi method is constructed along a hierarchical model.

Level One includes the monitoring and evaluation committee that decides on the main technology fields that the exercise will cover, and the main concepts for the evaluation of the technology fields (i.e. role within the industry, social implications, national and international leadership etc.). This usually leads to a dozen fields, more or less common in all national technology foresight exercises. A sub-committee is then set up for each technology field.

Level Two concerns the work of sub-committees deciding on the further division of each field into more detailed technology topics. Once the topics are defined, each sub-committee discusses and selects the technology related questions and indicators for the specific technology field. The sub-committee discusses and selects the technology related questions and indicators for the specific technology field. The sub-committees also select the experts who will be asked to answer the questionnaire concerning each technology topic.

Level Three is the work done by the experts in each technology field and topic. The experts are asked to fill in the questionnaires in successive rounds, and each round they are informed of the answers given by the other experts. The main advantage of the method is that the experts can shift position, and this is a normal effect of communication and interaction between them. The rounds end when there is a stabilisation of answers. In the end the result may exhibit bipolar views, since the method does not force consensus. In a famous Delphi (RAND 1964) the first round began with a blank sheet, and the panellists provided the first issues, (Linstone and Turoff, 2002).

5.3 Visionary Management

What is Visionary Management?

A **vision** is a shared picture of the desired future. The vision is made up of the ultimate aims and of the optimal goals which could show the long-term direction that should guide the common strategy of the decision makers, the stakeholders and the citizens⁴.

Visionary Management consists of bringing a group of players - involved in a territory (defined or to be defined), a business or an organisation, etc. to form a common vision of their future on behalf of the general interest (e.g. a region, an organisation, or a company). The collective formulation of a future desired for a territory will guide the collective strategy of political decision-makers, stakeholders (businesses, administrations, associations, etc.) and the citizens in order to provide a concrete response to identified issues.

Main objectives and uses

Vision elaboration can be applied in all areas of economic and social life, and is relevant for all levels of territorial governance.

Visionary management is actually part of a **strategic foresight process structured in several main phases**: identification and diagnosis (1), shared elaboration of long-term issues at stake (2), building the ultimate aims and the common vision (3), bridging the present with the vision by elaborating a strategic programme (4), identification and launching of strategic actions (5). The first three phases are in the realm of foresight - our ability to project ourselves into the future. These phases formulate the vision, followed by the two final phases of the strategy.

Timescale

As shown in the diagram below, the vision is the far horizon, and from this starting point the strategy is introduced at short-, medium- and long-term. From an operational point of view, the vision must be situated at a temporal reference point that is far enough in the future to enable a long-term reflection, yet close enough to have a mobilising and participative potential. Experience with various foresight exercises has shown that a time horizon of **15-20 years** is the most practical.

Implementation

The formulation of the territory's⁵ vision is structure in **three steps** mentioned above. For each step we shall identify their subject, the objectives pursued to formulate the vision progressively, and the methods of reference.

Step 1: Identification and diagnosis

Concretely, the diagnosis phase aims at:

- Providing a knowledge base;
- Identifying the common ground;

⁴ Blueprints for Foresight Actions in the Regions, Transvision Bridging historically and culturally close neighbouring regions separated by national borders, October 2004

⁵ A similar approach could be applied for the development of a company or any organization.

- Expressing the mental representations;
- Confronting with the realities;
- Sharing of the diagnosis.

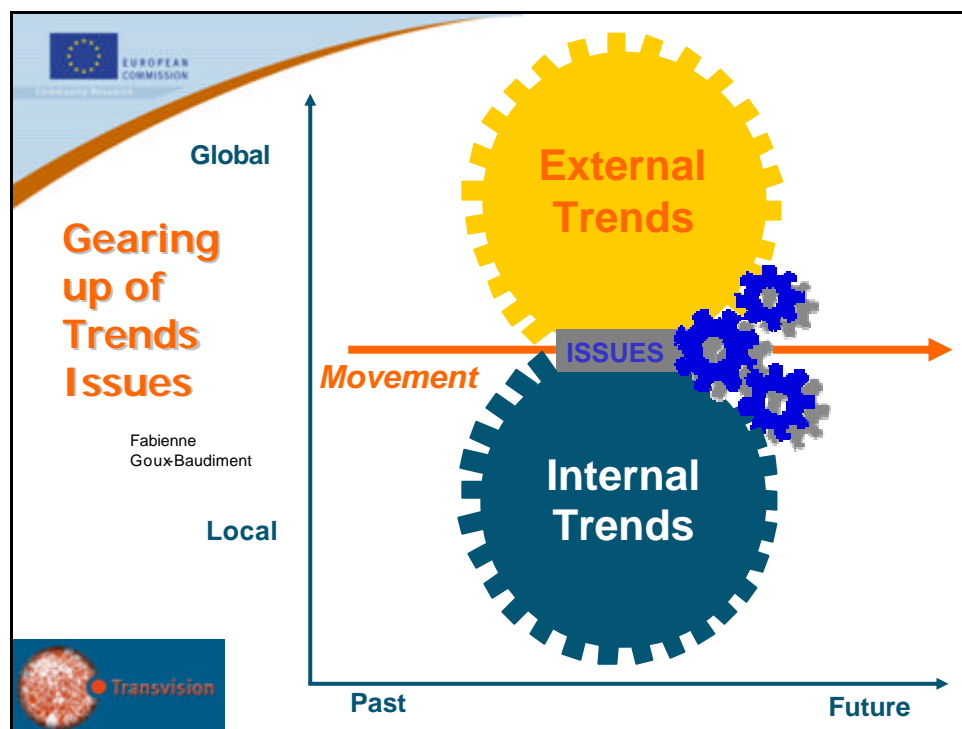
It is important to stress that this diagnosis must not only be a preliminary to the later phases - identifying long-term issues and formulating a vision - but it can also form the groundwork for a knowledge base on developments in the territory which may take shape in various ways depending on the situation.

Step 2: Shared formulation of the long-term issues at stake

The vision definition relies on a previous analysis of the potential paths over the long term and requires attention to be paid to many sources of change, interaction and complexity. This key step focuses more specifically on identifying internal and external trends in the territory's evolution, as well as any possible discontinuities (possibles) in order to deduce their impact in terms of issues for the territory.

Concretely, this step aims at:

- Identification of the global driving forces and their impact on the territory;
- Selection of the main issues for building a common vision for the territory;
- Identification of the role and the power of actors against these issues.



Futures workshops and computer-based tools as MICMAC can be used to **classify the key issues**. Developed by the LIPSOR⁶, MICMAC is a method by which the interrelationships between the issues can be highlighted and the complex multiple interactions between them assessed in a systematic way.⁷

The process of organizing the issues raised can be useful to **determine the ability of the actors to deal with change**. To ascribe a hierarchy to the challenges, it is possible for example to use an importance vs. control matrix. The actors can be

⁶ Conservatoire national des Arts et Métiers, Paris

⁷ See <http://www.3ie.org/lipsor/logiciels.htm> (free software).

asked to identify the critical changes and the inertias and assess how to reduce or increase their impact. By positioning the issues in the four zones, it is possible to determine the importance of the issues and their current degree of control. This kind of matrix can open the discussion about the involvement of actors in change management, about their control of the issues and about their ability to reduce the impact of the changes out of their control.

Step 3: Building the ultimate aims and the common vision

The exploratory phase of determining the future issues is followed by the **normative phase** of defining a future vision aimed at directing the action. In a future with multiple possibilities there may be many responses to the issues identified.

The vision will therefore constitute the **desirable future by responding to challenges identified** over time and of mobilising all stakeholders, decision makers, actors and citizens to achieve this objective.

Concretely, this third step aims at:

- Formulating the desirable futures and the ultimate aims
- Sharing of the vision

The vision must be global, voluntary, workable and have a long-term perspective so as to give direction to the actions and act as a support for the strategy to achieve it.

Many methods may be used to construct this vision, ranging from simple to more elaborate techniques using for example **complex matrices comparing possible futures and desirable futures**.

5.4 Horizon Scanning

What is Horizon Scanning?

Horizon scanning⁸, often also referred to as environmental⁹ or technology scanning or just scanning, is a futures tool¹⁰ which supports policy design work and strategy development in the public and private sectors in terms of medium to long-term futures. According to the UK-based Defra (Department of Environment, Food and Rural Activities), horizon scanning may be defined as *"the systematic examination of potential threats, opportunities and likely future developments which are at the margins of current thinking and planning. Horizon scanning may explore novel and unexpected issues, as well as persistent problems or trends. Overall, horizon scanning is intended to improve the robustness of Defra's policies and evidence base"*.

⁸ Brown and Weiner (1985) define scanning as "a kind of radar to scan the world systematically and signal the new, the unexpected, the major and the minor" (p. ix). Aguilar (1967), in his study of the information gathering practices of managers, defined scanning as the systematic collection of external information in order to (1) lessen the randomness of information flowing into the organization and (2) provide early warnings for managers of changing external conditions.

<http://horizon.unc.edu/courses/papers/enviroscan/>

⁹ See Annex 2 for more specific information on environmental scanning

¹⁰ According to the FOREN Guide, scanning "is not a Foresight method as such, more a necessary background to the topic of Foresight."

Main objectives and uses

Coates (1985) identifies the following objectives for horizon/environmental scanning:

- detecting scientific, technical, economic, social, and political trends and events important to the institution,
- defining the potential threats, opportunities, or changes for the institution implied by those trends and events,
- promoting a future orientation in the thinking of management and staff, and alerting management and staff to trends that are converging, diverging, speeding up, slowing down, or interacting.

More broadly, horizon scanning is currently being recognised as a high impact futures tool which through its application provides policy intelligence, reflected in insights (trends and drivers) and implications (policy challenges and actions).

Some of the main practical uses of horizon scanning are:

- *Horizon Scanning as intelligence-gathering activity*
- Horizon scanning for priority setting for S&T research and innovation investments.
- Horizon scanning for benchmarking
- Horizon scanning for organisational learning¹¹

Horizon scanning may be used to address a range of national and regional policy challenges:

(i) Broad Policy Challenges

- systematic and evidence-based approaches to improve current and future policy design
- to improve the robustness of policy approaches
- to challenge existing policy approaches and underlying assumptions on which they are based
- to explore alternative policy options based on radical, disruptive or out-of-the-box thinking /tools
- to identify and provide an early warning on new threats and risks as well as new opportunities

In practice, horizon scanning is used by governments to address a mix of policy objectives and challenges, ranging from a move towards more evidence-based policy design and formulation to more long-term strategic outlooks in decision-making.

(ii) Sectoral Policy Challenges

(iii) Societal challenges

(iv) Technological challenges

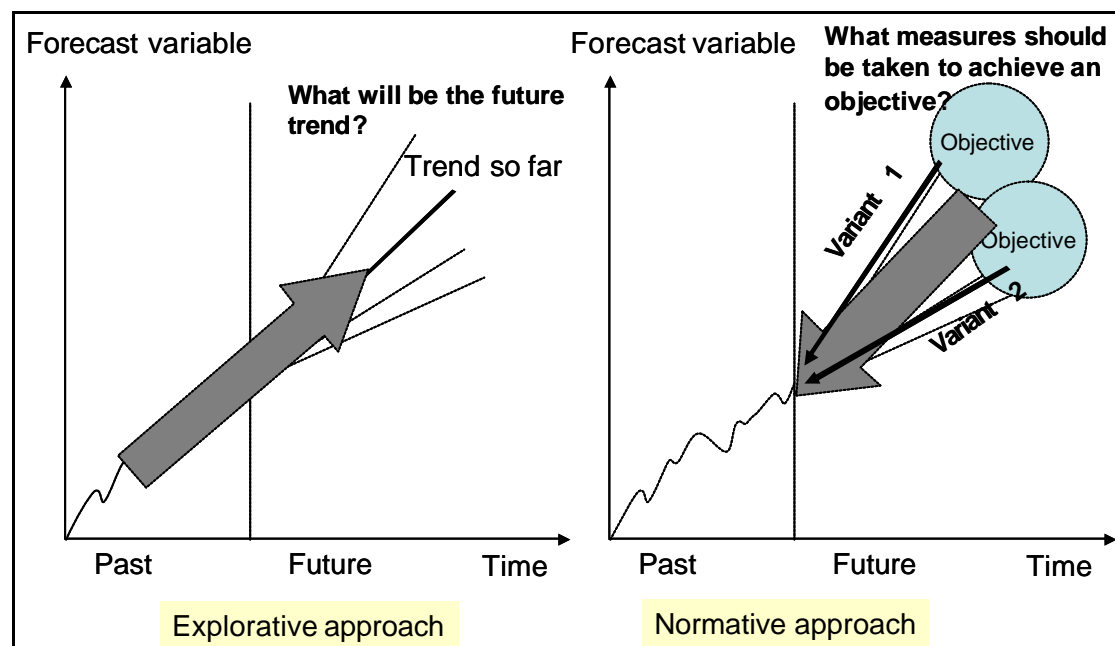
Timescale

The tool is generally used to address 10+ time horizons, however time horizons may vary in accordance with context and the preferences of the sponsor and/or implementing agency. For example, the UK Horizon Scanning Centre is to identify future issues (and future aspects of current issues) of **potentially significant impact or opportunity**, over 10, 25, and 50-year timescales.

¹¹ <http://www.tukkk.fi/tutu/vanhat/scanning2003/papers/jkaivooja.pdf>

necessary to reach the required outcome. The number of foreseeable paths of development from the present position to the objective could range from 'none', implying for examples a completely new technology, innovation or law, to 'several'. Each feasible path to reach the objective is analysed for its relevance and difficulty. Examples of relevant normative techniques are: relevance trees, morphological analysis, technology watch and technology monitoring, Delphi analysis and Trend Impact Analysis (TIA).

Information needed for normative techniques is more qualitative than that needed for exploratory techniques (Figure 1).



Main objectives and uses

Trend analysis is a methodology of value to both futures researchers and policy evaluators; its data can be used to extrapolate previous trends term concerning both future goal achievements and future policies. Time series can also be used to relate policies to goals provided that the reciprocal effect of goal achievement on policy adoption and vice versa is taken into consideration (Case study 1 is one example of this).

Trend analysis can be applied in various planning and decision-making situations. It is well suited for policy and strategy level planning and monitoring. Policy level includes the formulation and impact assessment of policy options (mainly aims, objectives and resource allocation). At strategic level the main instruments are plans and programmes. They are more detailed in content, and their objectives and impacts are easier to put into context and to locate.

The results of trend extrapolations can either be used directly in order to establish an idea of the future evolution of an indicator (e.g. demographic change: either they are used as input to other methods like scenario analysis or modelling. Trend analysis refers to the study of general development trends needed as an information basis when carrying out various planning and decision-making tasks.

One of the hallmarks of trends analysis is the understanding that regional development paths can only be fully understood if the influencing factors (their frequency and distribution) are examined in terms of region, scope, and time. Trend analysis is used for regional development surveillance and monitoring, for forecasting, for program evaluation, for policy analysis, and for risk analysis (investigation of potentially causal relationships between risk factors and outcomes). Rosenberg (1998, 195) lists several issues a trend analysis may focus on:

- ⇒ The overall pattern of change in an indicator over time
- ⇒ Comparing one time period to another time period
- ⇒ Comparing one geographic area to another
- ⇒ Comparing one industrial sector, line of business, population group, consumption patterns etc. to another
- ⇒ Making future projections

Implementation steps

The type of implementation depends on the variant of trend analysis undertaken. Trend extrapolation and trend impact analysis are two common approaches in Foresight exercises. Further guidance on these approaches is contained within the accompanying report on trend analysis.

5.6 Futures Workshop

What is a Futures Workshop?

A futures workshop is a method for creating ideas for a preferable future and the means to reach it in collaboration with the others involved. The work in futures workshops is based on the analysis of a present situation with its problems and possibly also its strengths.

The basic ideas of the method are

- ⇒ empowerment and active futures work in cooperation with other people in the workshop;
- ⇒ work based on the analysis of the present circumstances of a topic;
- ⇒ the open and rich creation of different ideas concerning the possible futures of the topic within a selected time horizon;
- ⇒ the evaluation of the created ideas e.g. to select a desired future and suggest other possible futures in cooperation with the workshop;
- ⇒ the formulation of concrete action plans, with which it is possible to reach the desired future from the topic's present situation.

Timescale

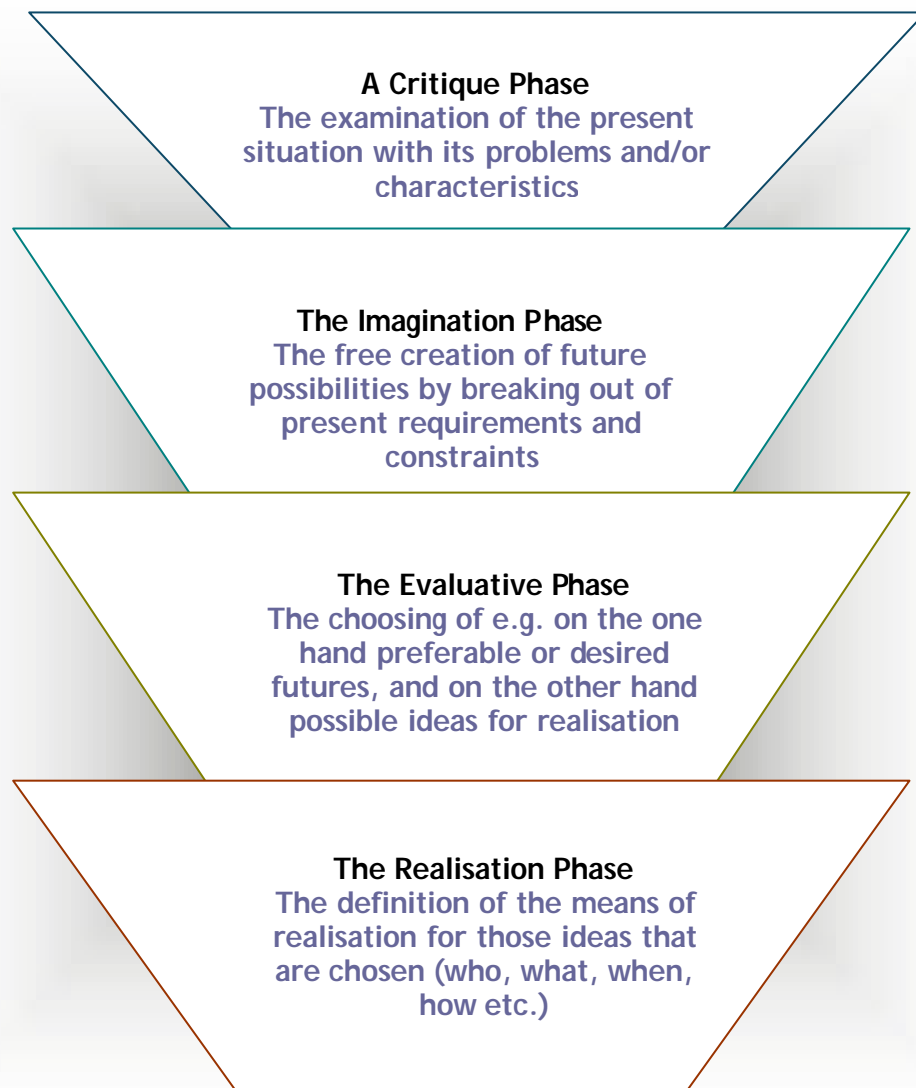
A futures workshop is suitable for a study that has a 5-25 years time horizon. If the workshop's target is to make only a vision, an even longer time horizon is possible. But for the planning of concrete activities too long a time horizon is worthless. If an extremely long-term vision is needed, it is possible to arrange futures workshops with some year's intervals for its implementation. At the same time it is also useful to revise the vision.

Implementation steps

The essential principles of futures workshops are that all participants are equal in the workshop and the whole working process should be transparent. Every

workshop should have a trained leader, who has the task of guaranteeing the equality and transparency of the process.

The main phases of a futures workshop are the following:



Number of workshops

Future workshops can vary in number: from one single workshop to a series of (usually) 2-4 workshops. One single workshop is a compact working session. It is easy to commit oneself to the work in this workshop, when the demand made of one's time is limited. This kind of workshop can take a half or a whole day. At a minimum 3-4 hours are required.

In a series of workshops the issues to be discussed can be incubated between different workshops. Participants have the opportunity to work with the subject between the workshops and thereby support the whole working process. Workshop leaders can guide all participants in this kind of work or provide them with an occasion to do it. Also workshop leaders have the possibility to analyse intermediate results between different workshops and lead the workshop process further based on them. It is easier to insert time-consuming

complementary methods into a series of workshops than into just a single workshop, simply due to the length of the disposable time available. A series of workshops can be arranged during a weekend or with several intervals. An interval should not be too long; otherwise participants will lose touch with the dynamic ideas and thoughts of the productive process. If all workshops are arranged in one weekend, neither leaders nor participants have the opportunity to work on ideas between workshops. When this kind of work is important, workshops should have some time - even weeks - between them.

You should now:

- **Understand the main objectives and uses** of Scenario building, Delphi, Visionary Management, Horizon Scanning, Trend Analysis and Futures Workshops
- **Be ready to access and analyse** more comprehensive tools information in taking forward your own exercise/project.

6 FREQUENTLY ASKED QUESTIONS

6.1 Why use Futures at all?

We all would like greater certainty about our futures. We feel this as individuals, as citizens, managers or policy makers. The future, however, is uncertain and if we are going to either prepare ourselves or plan our preferred futures we need to organise our thinking effectively. Futures tools can help us to do this.

In facing the challenges and opportunities posed by the effects of globalisation, technological change, demographic changes and environmental pollution businesses, organisations and public authorities often have to react to external events, with ad hoc policies based on imperfect knowledge and severe constraints.

Futures tools and approaches provide new approaches that are creative and anticipatory are needed that will equip them to deliver benefits for their people and businesses. The key element in futures work is the use of these tools to stimulate engagement across society in understanding and debating a future that is characterised by uncertainty but where present day policy choices will influence the achievement of the “desired” future.

Futures techniques frequently are used to complement other tools such as planning, strategy and networking. Futures tools are used to deal with the greatest uncertainty and provide scope for choices to be made. Through the use of futures tools businesses, organisations and public authorities can deal with important challenges and trends in an intelligent and strategic way.

6.2 What are some typical reasons for carrying out a Futures exercise ?

There are many reasons why the use of Futures tools may be appropriate. The most common motivations are described in Section 1 of the toolkit although there are likely to be as many reasons as there are exercises.

Typically, the initiation of futures exercise will be stimulated by the need to take decisions with long term implications possibly arising either from the emergence of new opportunities or the negative impact of economic or social ‘shocks’ and the recognition that before decisions can be taken it is necessary to generate a widespread dialogue about future choices and preferences.

The long term implications may arise because of the need to formulate longer term national and regional programmes, planning the future direction of an organisation or sector of industry or the need to plan major public spending with long-term implications, for example, infrastructure investments or research priorities for science and technology funding.

Other motivations could simply be to refresh the thinking, mindsets or assumptions that have underpinned policy or strategic thinking for a number of years and thereby stimulate new thinking in a region, organisation or business and establish a new trajectory of development based on an inclusive and fresh set of perspectives.

6.3. What results can we expect from carrying out a Futures exercise ?

Foresight exercises can produce both formal and informal results.

For example, each exercise will produce a body of evidence, opinion and reports that can be widely disseminated and whose reading is in itself an important element in contributing to the opening of minds and fresh thinking in the region business or organisation.

Similarly, the events associated with futures exercise such as workshops, conferences and focus groups are potentially an important result in themselves placing, as they do, people from different areas of society or the business alongside each other in order to think in fresh ways on challenging topics.

Informal results are of course more difficult to describe but will include a new shared experience; a consensus view of futures trends, challenges and opportunities and a strong 'learning' effect gained from participation in the futures exercise itself. New networks may emerge; modifications to the decision making processes in an organisation or region to take into account futures thinking and futures based trajectories leading to a systematic effort to understand the global environment are all feasible expectations.

6.4. Who should lead the Futures exercise ?

As described in Section 2, the lead organisation may be any organisation with the necessary competency and legitimacy. Generally this legitimacy or competence is expressed in terms of the governance to effectively deliver the exercise. The leaders of the exercise should be sure that they will be able to deliver not only the futures exercise but the implementation of the results or risk wasting a great deal of effort; resource and goodwill.

Further leadership may be vested in stakeholders who provide the resources necessary to deliver the futures exercise; these may be from the public or private and can sometimes be from both.

The most common **public sector leaders** are national, regional and local authorities and agencies or from organisations and institutes whose mission is to analyse and study the development of socio-economic scenarios. (Further important contributions may come from national and European Community public programmes set up to finance studies and analyses.)

Private leadership and sponsors may typically include large enterprises, banks and other financial institutions.

6.5 Who should be invited to participate in a Futures exercise ?

As noted in Section 2, stakeholder engagement and participation is at the heart of most futures exercises. Consideration needs to be given to the list of stakeholders needed; the timing and depth of their involvement and the gaps in stakeholder support that may be apparent at the outset. The scope of the planned exercise and the comparative competency of the lead organisations will influence the engagement needed as will the ability and willingness of stakeholders to satisfy the information needs of the exercise

A broad range of regional actors, including regional governments, universities, businesses, chambers of commerce, local media, industry associations, other NGOs, and a wide range of citizens, can all potentially be included in futures activities. The scope of the futures exercise will clearly have a significant bearing on the range of stakeholders involved from business interests involved in sector futures exercise to the wider public being likely to become engaged in social or spatial futures.

Futures exercises may involve hundreds or even thousands of participants from a wide variety of interests and backgrounds although inevitably the degree and depth of engagement will vary from exercise to exercise.

Although experts are necessary to provide the input to a futures exercise, the majority of futures exercises should avoid over-reliance on the engagement only with 'experts', particularly where socio-cultural issues are concerned.

Similarly, the extent of political involvement in a futures exercise needs to be carefully thought through in order to avoid political bias in discussions; conversely however, the involvement of politicians in understanding and debating the future with citizens and stakeholders is to be encouraged in most futures exercises.

As noted in Section 3, wide engagement is often expensive and difficult to co-ordinate, which means that many exercises prefer to rely on stakeholder or expert working groups to ensure that the focus on the agreed scope of the futures exercise is maintained. In some cases, citizen or stakeholders panels and expert working groups are often run in parallel to a wide consultation process.

6.6. How can we best prepare for using a Futures exercise ?

Four key issues need to be fully discussed and agreed upon before a futures exercise can get underway or be launched effectively. These issues are inter-related and operate in an iterative non-linear way - the issues, reflections on them and the decisions taken on them are dynamic and may not be concluded before setting out on the futures exercise.

- Determining the scope of the exercise:
- Competency & legitimacy
- Information & data
- Level & type of engagement

Readers are referred to Section 2 of the Futurreg Toolkit

6.7 What criteria or considerations should we have in deciding which tools to use ?

The motivations, the scope of the exercise, the resources available and the political context all have to be taken into account in defining the tools and methods to be used in a futures exercise.

Readers are referred to Section 4 of the Futurreg Toolkit

6.8 What information sources or data analysis capacity do we need to have access to ?

The information and data inputs and capacity required will vary depending on the specific futures tool being used. Information is the foundation of a futures exercise and its availability is critical, however, the needs of the futures exercise will be determined by the scope of the exercise and the availability of information will be strongly influenced by resources but also by the type and depth of stakeholder engagement (as suppliers or sources of information) and by the competency of the lead organisation to request the necessary information from other tiers of government; academia or industry group

Readers are referred to Sections 4& 5 of the Futurreg Toolkit

6.9 Is there a 'best practice' Futures tool that we can use 'off-the-shelf' ?

Readers are referred to Sections 4 & 5 of the Futurreg Toolkit

6.10 Where can we make best use of external expertise within a Futures exercise ?

The choice of the Futures tool and method exercise will partly dictate the type of external expertise required and the extent of expert involvement that will be appropriate.

Experts may be used to assist in the management of the futures exercise or to the delivery of the futures tools themselves. In other cases, external experts may usefully provide an independent view of the emerging outcomes and conclusions from the futures exercise.

Regional expertise may exist in some cases, although a typical secondary motivation for many futures exercises is to mobilise expertise and interest in futures tools and methods.

In summary, external experts can provide benefits in a number of ways:

- Achieving economies of scale by reducing the learning curve (and costs) by drawing on their past experience and links to international good practice and key players and sponsors overseas
- Providing momentum of the exercise by working closely in support of the futures exercise leader (project manager)
- Providing an external and independent view on the outcomes of the futures exercise by questioning entrenched assumptions and taking a role in synthesising results and reporting to stakeholders so helping to build consensus

6.11 How can we monitor or assess the impact of our Futures exercise ?

Monitoring and evaluation assesses how an activity is or has met its expectations in terms of activity and the objectives that were initially set. Evaluation can also assess the impact of the exercise and whether any additional benefits and lessons can be learnt from the exercise.

Evaluation and monitoring are closely related and may use the same data but they are different tasks. The **monitoring** of an activity is a management task that seeks to ensure that the necessary tasks are being performed on time, to budget and progress is being maintained as planned. **Evaluation**, on the other hand, examines whether such tasks are accomplishing their objectives.

The evaluation of a Futures exercise requires careful planning and design if the underlying motivations for the use of the futures approach in the first place are not to be undermined. An independent evaluation that provides a credible and legitimate review of the exercise, its objectives, delivery and outcomes is desirable.

Evaluation can take place as in “real-time”, while the activity is underway, or “post hoc”, when it is completed.

Real-time evaluation can provide feedback to those responsible for an activity, so that they are able to identify shortcomings more rapidly and address problems. For a futures exercise, the accuracy of the futures thinking cannot be tested and in any case, in most exercises are not the sole motivation of the exercise. Therefore for a futures exercise, a real-time evaluation will be aimed at identifying the extent to which the futures exercise has achieved its ‘process’ objectives such as engaging new stakeholders or opening mind-sets to futures or long term thinking and perspectives.

Most evaluations are **post hoc**, i.e. working with the benefit of hindsight. These are often conducted to close the exercise. An evaluation of this sort, if left for a few years following the closure of the exercise can usefully examine issues such as the extent of networking or networks, the embeddedness of futures approaches and futures thinking etc.

In any case it is best if the basis and method of evaluation is set out at the beginning of a futures exercise.

6.12 What is the typical cost of implementing a Futures exercise or tool ?

There is unfortunately no easy answer to this question, partly because there is no reliable data available from other futures exercise (the same problem arises for foresight exercises) and partly because the question of costs depends on so many variables - scope; information availability; the type of futures tool selected; the level of engagement etc etc.

The financial burden of futures exercise is typically borne by a wide range of stakeholders and in most cases not all costs are financial costs. Participants typically provide a considerable amount of resource as 'contribution-in-kind' through the provision of data and information or through participation on panels and working groups etc.

Core financial costs are likely to be incurred from:

- The costs of a project management team
- Meetings and events costs
- Publicity material,
- Consultation exercises
- Engagement of experts

The project plan prepared at the initial stage of the futures exercise will need to identify the likely costs and the sources of funding for the exercise. However, stakeholders should bear in mind that these are estimates and ideally, some flexibility is desirable as the futures exercise unfolds.

6.13 How much time will we need to implement the Futures exercise ?

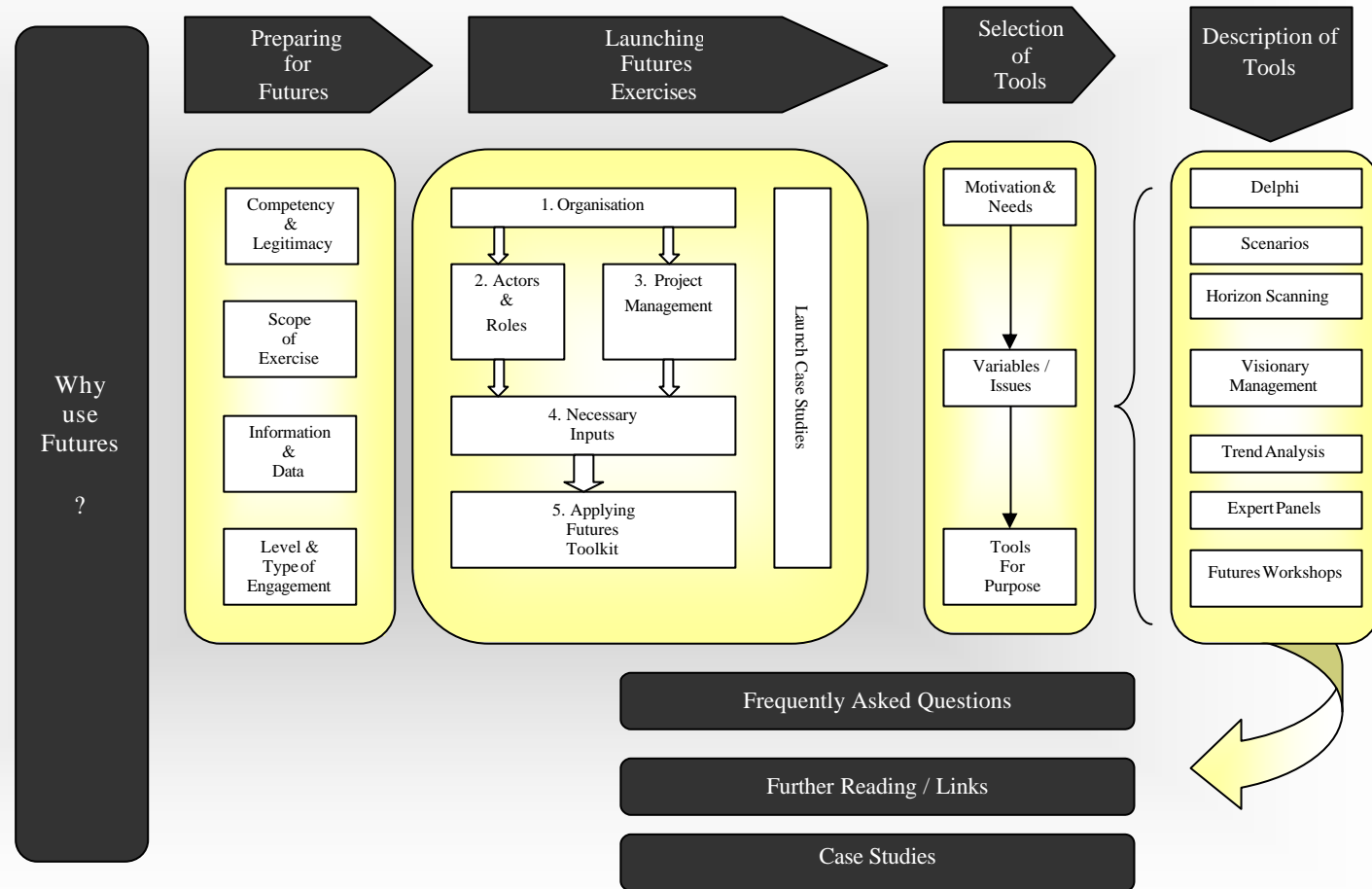
As with Question 13, there is no easy or clear answer to this question and the scope, foresight tools and expected outcomes of the futures exercise will all influence the time schedule for the exercise. However, most exercises last anything between 6 months and 3 years.

6.14 Over what time-span should we project our Futures exercise?

Setting a time horizon for your project will depend on its context, objectives and users. Strategic or territorial visions for regions often have a time horizon of 20 years. Sector-based initiatives often opt for a shorter time horizon (e.g. 5-10 years).

Generally speaking, regional futures projects should have a time horizon which is beyond that of normal planning horizons.

7 FLOW CHART



8 FURTHER READING/LINKS

General Guides & Resources

http://les.man.ac.uk/eurofore/	The Euforia web site is a continually updated resource base for Foresight.
Eurofore Database	The most comprehensive collection of foresight activities, data and competencies in Europe.
http://forlearn.jrc.es	The FOR-LEARN Online Foresight Guide - A-Z of Foresight with case studies.
www.efmn.info/	The European Foresight Monitoring Network - general resource for briefings, blueprints etc.
http://ag.arizona.edu/futures/fut/semttech	Notes and glossary of Futures Techniques.
www.forumforthefuture.org.uk	Sustainable development research charity
www.banxia.com/demain.html	Software tool - Decision Explorer™ : Banxia Software.
www.banxia.com/famain.html	Software tool - Frontier Analyst® for Data Envelopment Analysis: Banxia Software.
http://www.banxia.com/impact/index.html	Software tool - Impact Explorer™ : Banxia Software.
www.sustainable.doe.gov/toolkit/toolkit.shtml	Sustainable development decision support tools.

Specific Tools

Horizon Scanning	Visionary Management
www.foresight.gov.uk/HORIZON_SCANNING_CENTRE/	http://info.tse.fi/julkaisut/liite/Ae8_2004.pdf

Scenario Building	Trends Analysis
www.gbn.org	www.apa.state.ny.us/Documents/Reports/trendsdoc.pdf
www.simul8.com/	www.scotland.gov.uk/Resource/Doc/923/0029756.pdf
www.well.com/~mb/scenario	Delphi
www.wired.com/wired/scenarios/build.html	http://ec.europa.eu/regional_policy/sources/docgener/evaluation/evalsed/downloads/sb2_delphi_survey.doc
www.vensim.com/	

Case Studies

Extensive collections of briefings, blueprints and illustrative case studies can found on the following resource websites (also see above):

<http://forlearn.jrc.es>

<http://www.efmn.info/>

Foresight Case Study. A project undertaken by the Luxembourg *Fonds national de la recherche* (FNR) aiming to identify research domains/priority axes for the public sector with short-term and/or long-term socio-economic interest for Luxembourg -

www.fnrforesight.lu/

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CASE STUDIES

	CASE STUDIES	FUTURES TOOLS USED
	A. Launching a Futures Exercise	
1 2	Milanese SME Internationalisation 2012 Lombardia, Italy Technology Delphi Austria	Scenario Building Delphi
3	The Polish Foresight Pilot - Health & Living 2012 Poland	Scenario Building
4	Foresight for Mobile Radio Spectrum 2020 EU-Wide	Scenario Building
	B. Regional Sub-Projects	
1	Strategic Futures - Futures Techniques for Medium-Term Business Planning CCW, Wales, UK	Scenario Building Delphi
2	Digital Thermi - Networks & Digital Applications for Citizens Central Macedonia, Greece	Scenario Building
3	Molinay 2017 - Futures in an Urban Context Wallonia, Belgium	Visionary Management Futures Workshops
4	Trends in the Regional Agri-Food Industry and Development of a Strategic Plan for the <i>Centre for Food Innovation & Technology</i> La Rioja, Spain	Trends Analysis
5	Technological Trends - Futures and the Region's Footwear Sector La Rioja, Spain	Trends Analysis
6	Futures for Higher & Further Education Malta	Horizon Scanning
7	The Loimaa Futures Club South West Finland	Scenario Building Delphi Futures Workshop
8	A New Strategic Plan for the Sligo Institute of Technology Borders, Midland & Western Region, Ireland	Scenario Building

A. Launching a Futures Exercise

Case Study 1: Milanese SME Internationalisation 2012

Sponsors: Provincia di Milano and the MIUR (Ministry of Instruction, University, Research)

Type: A regional foresight exercise focused on the socio-economic system of the Province of Milan and covering all local industrial systems

Organiser: Fondazione Rosselli

Duration: Sep 2002 to April 2004

Budget: Approximately €150,000

Time Horizon: 10 Years

No. of Participants: N/A

Diversity of Participants: Wide

Futures Tool: Scenario Building

Place of Formal Techniques: Founding basis of the Exercise

Direct Action-Orientation: Input to Strategic Planning

Purpose: The purpose of the initiative was to develop a vision and to achieve consensus among local stakeholders on the internationalisation processes acting upon the socio-economic systems of the province of Milan to understand how Milanese SMEs were coping with the challenges of internationalization and EU enlargement and to assist local government bodies with their policy related priority-setting.

The Context of the Exercise: This foresight exercise was initiated by the head of the Department of European and International Co-operation of the Provincia di Milano, who recognized the need for a regional strategy and a common vision in order to harness the internationalization processes at work in the local economy. The motivation for this came from the observation that local industry in general and SMEs in particular, did not fully exploit the opportunities offered by the process of globalisation and more specifically by EU enlargement.

The Main Objectives: The exercise was intended to make regional stakeholders aware of the consequences of globalisation and enlargement for Milan's economy. The intention was to point out and raise awareness of the need for further internationalization of local industry and to prompt decision makers to take action.

Methodological Approach: A task-force composed of researchers from the Fondazione Rosselli was responsible for carrying out the project. A steering group known as the 'Comitato di Riferimento' was set up in order to establish and maintain contact with important local stakeholders. Twelve members represented the main sectors of the local socio-economic system. A panel composed of 19 experts representing the main areas of the socioeconomic and industrial system of Milan came together in three workshops in order to elaborate on the scenarios. The themes that were analyzed involved many interrelated processes with many variables and a high degree of uncertainty.

Due to this complexity it was envisaged to carry out the foresight exercise in a step-by-step sequence, involving experts and stakeholders in order to identify relevant processes and critical drivers, allow the building of scenarios and provide the Provincia di Milano with guidelines for policies suitable at implementing measures that would favour the emergence of the most attractive and feasible scenarios for the region.

The following five **project-phases** can be identified:

1. Description of the area's economic system focusing on the role of manufacturing and SMEs.
2. Definition of a conceptual model that links the evaluation of the Milan area's industrial system with critical factors concerning the structure and organisation of the manufacturing industry, the governance system at different territorial levels, and the behaviour of individuals and society.
3. Analysis of possible evolution paths of four important sectors in the Milan area's manufacturing industry:
 - Software
 - Machine tools
 - Furniture
 - Clothes
4. Design of possible scenarios of the development of industry in the Milan Area.
5. Elaboration of policy guidelines for the Milan Province based on specific preferred scenarios.

The **scenario-workshop method** was chosen because it supported wide participation of, and the development of a shared vision with, the main regional stakeholders. The project was supported at the highest political level. This made it easier to identify to involve the most influential people in the region and to convince them to take part.

Case Study 2: Technology Delphi Austria

Sponsors: Austrian Federal Ministry for Science and Transport.

Type: Foresight exercise to determine Austria's potential in selected future-oriented technology fields as well as to identify the most important measures to realise this potential

Organiser: Institute of Technology Assessment, Austrian Academy of Sciences.

Duration: May 1996 – January 1998

Budget: €700,000 in total for both Technology Delphi and Society and Culture Delphi, including dissemination of results

Time Horizon: 10-15 Years

Futures Tool: Delphi

No. of Participants: 1,600

Direct Action-Orientation: Input to Strategic Planning

Diversity of Participants: Wide

The exercise focussed on seven thematic fields:

1. Environmentally Sound Construction and New Forms of Housing
2. Lifelong Learning
3. Medical Technologies and Supportive Tech. for the Elderly
4. Cleaner Production and Sustainable Development
5. Organic Food
6. Mobility and Transport
7. Tailor Made New Materials

Formal Objectives: Inform a more long-term oriented technology policy with Foresight tailored to the specific needs of Austria

Rationales

- to use Foresight as a modern 'search tool' to identify future-oriented, success-promising target areas and required measures for technology- and innovation policy;
- to take a demand- and problem-oriented approach, i.e. start with what are societal problems that could be solved with innovative technology;
- to couple a Technology Delphi with a Society and Culture Delphi;
- to combine economy- and society-oriented objectives;
- to identify innovation potentials and niches within world-wide technology trends where Austria might have opportunities to achieve leadership;
- to concentrate on a selection of instead of a comprehensive exercise

Organisation: A small steering committee led by Science Ministry. Expert panels for each foresight field established. Pre-foresight phase for exploratory research and selection of priority subject fields for main foresight phase.

Links with other Foresight related activities: Analysis of existing major Technology Foresight reports. Combination with parallel Society and Culture Delphi by another institute (ITK). Background information from Technology Assessment as core activity of ITA (focused on ICT, biotechnology, medical technology/health technology assessment, environmental technology)

Knowledge Management: Managing organisation organised expert panels and provided information to explain goals of foresight exercise. Panels developed content for large Delphi survey among wider group of experts. Survey results were analysed by managing organisation and fed back to panels for discussion of draft report. Their comments flowed into the final report with policy recommendations written by the managing organisation ITA.

Case Study 3: The Polish Foresight Pilot – Health & Living 2013

Sponsors:	Ministry of Science and Information Society Technologies	
Type:	A National foresight on health and life-science research	
Organizer:	Ministry of Science and Information Society Technologies	
Duration:	2004-2005	Diversity of Participants: Wide
Budget:	€190,000	Futures Tool: Scenarios
Time Horizon:	2013	Direct Action-Orientation: Input to Strategic Planning
No. of Participants:	N/A	

Purpose: this pilot Foresight project in the area of Health and Living was aimed at speeding up the process of predicting development paths that would lead to improvement in the health and quality of life of Polish citizens. This activity provides a basis for determining the paths of science and technology policies that support economic priorities and for building broad consensus on complex social issues. The 'Health and Living' area was selected for analysis due to the widespread perception that the biological and medical sciences develop

very fast nowadays and this pace of change poses new challenges for policy makers across a range of domains.

Methodology: The Foresight Programme was developed on the basis of discussions with various actors who provided advice on issues such as the time, extent and methodology to be adopted. The field of 'Health and Living' was chosen as the topic for the pilot phase.

Due to time and cost restrictions the methodology of the Pilot Foresight Project was based on the following foresight tools and techniques:

- **A Steering Committee** nominated by the Minister of Science was set up in order to coordinate all activities. Subsequently this committee appointed the **Main Topic Panel** to coordinate the Pilot Foresight Project. A group of four experts was chosen from the scientific groups of The State Committee for Scientific Research. This committee was a central administrative body whose members were representatives of scientific circles and government officials. The task of the four experts was to nominate experts to the Pilot Foresight Project.
- Eleven **thematic panels** in the health area were selected based on nominations of institutions and organisations authorised to name the candidates. This stage of the work involved the completion of a questionnaire by nominees and a process of co-nomination. Each panel was composed of a group of 10 to 18 experts coming from science, industry and public policy.
- **Identification of Key Technologies** using specifically selected criteria and developed by the **Main Topic Panel** experts. This work makes it possible to determine priorities for a country's science, technology and innovation policies on the basis of future needs of the economy and society.
- **SWOT Analysis** was applied to each segment of 'Health and Life Science'.
- **Expert Panel Discussions** involving groups of 10 to 15 experts were very effective in providing measurable results in relatively short time and made it possible to increase the number of actors involved representing various interests and social groups.
- **Social Consultation** was employed not only to optimise and substantially motivate the choice of priorities but to enable a broader group of stakeholders to express their views on priorities to ensure the country's development. The aim was to involve a cross section of society to help achieve buy-in to the results eventually obtained.

The following project-phases of the project can be identified:

- All thematic panels gathered the data and prepared SWOT analyses.
- A set of criteria to select priority research areas was established.
- First lists of priorities were prepared by panels.
- Members of thematic panels described weaknesses and strengths of represented area and after the discussion critical areas were identified and final reports based on these activities were prepared. The 'social consultation' was carried out by an organisation which specializes in public opinion surveys. With their help four Focus-group interviews were conducted, 20 in-depth interviews were undertaken and a survey with 120 experts was carried out. The final report was based on the findings of the surveys as well as reports from each of the thematic panels.

Case Study 4: Foresight for Mobile Radio Spectrum 2020

Sponsors IPTS (Institute for Prospective Studies) in Seville

The European Commission Directorate General for the Information Society

International single issue foresight exercise on European spectrum demand up to 2020

Organiser: SCF Associates Ltd **Duration:** 2004 to 2005 **Budget** €100,000 **Time Horizon** 2020

Futures Tool: Scenarios **Direct Action-Orientation:** Input to Strategic Planning

Purpose

- To provide a robust and realistic understanding of future demand for radio spectrum for mobile services up to 2020.
- The first challenge was to formulate a new method to assess demand within the framework of the current ITU methodology that is based on socio-economics. Traditionally this field had been dominated (perhaps wrongly so) by the technology driven visions of operators and suppliers rather than by the reality of affordability and the motivation provided by utility to consumers and business users.
- A further challenge was to provide a realistic conceptualisation of new types of services through an examination of the business model for innovative mobile services termed 4G or fourth generation mobile. The final major challenge was verification to be carried out through an industry survey on prognostications as well as workshops.

Methodology

First the project needed to research and develop a robust methodology, which could start with scenarios of possible alternative trajectories of economic development and go to types of users. It would then continue right down to minutes of usage of specific services, at specific points in the future.

Also it had to give the characteristics of services and traffic in ITU parameter terms. This required the project team to concentrate on a logical series of delivery goals:

- Scenario creation in a formalised and repeatable way
- Comparison of scenarios
- Characterisation of users and their uses
- Identification of future mobile services and their characteristics for spectrum usage (over 130 were specified)
- Projections for the adoption of services
- Projection over time of traffic volumes
- Projections of behaviour based on motivation and need
- Verification of early findings and scenarios with a structured questionnaire and form of Delphi analysis, a major survey exercise of industry experts
- Analysis of findings of the industry survey
- Business models for a new type of network architecture envisioned (4G)

The next step was to evangelise the methodology through:

- Identification of key stakeholders and decision points
- Presentation to key groups such as the European CEPT
- Public workshops with a large, diverse audience with invitations going out worldwide and invited speakers from Europe and the USA
- Companion EC projects with a technical focus such as 'Winner' including visits to their workshops.
- Questionnaires on spectrum demands and mobile markets were sent to its member country delegations provided the basic information on demands, services, spectrum requirements and traffic volumes by service. The overall approach exploited scenario forecasting to show needs and motivations.
- From these data types of demand against disposable income under the impacts of the various economic scenarios could be identified. This whole methodology was aimed at producing a socio-economic approach to demand forecasting.

B. Regional Sub-Projects

Case Study 1: Strategic Futures – Futures Techniques for Medium-Term Business Planning

The Countryside Council for Wales, UK

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Regional Actors / Organisation: Martin Parkinson M.Parkinson@ccw.gov.uk, The Countryside Council for Wales www.ccw.gov.uk

Futurreg Partner: The Observatory of Innovation, Cardiff University Business School

Type: A strategic futures exercise designed to help produce a new strategic plan for the Countryside Council for Wales

Duration: 18 months 2006-2007

Budget: N/A

Time Horizon: 2012

PURPOSE

The Countryside Council for Wales (CCW) is the Welsh Assembly Government's (WAG) statutory advisor on sustaining natural beauty, wildlife and the opportunity for outdoor enjoyment in Wales and its inshore waters. In order to improve the quality and breadth of the preparations for its Corporate Plan for the period 2008 - 2012, CCW decided to innovate and undertake a futures exercise introducing the concepts of futures and scenario planning to the organisation.

CONTEXT & CHALLENGES

Hitherto there had been little history of futures or Foresight practice at CCW, apart from a pilot exercise in 2005 to identify key policy drivers. CCW was required to submit a Corporate Plan to the Assembly during the autumn of 2007, the previous Plan having been submitted in July 2004 for the period 2005-08. On that occasion CCW was required to submit a Plan annually for a period of 3 years. Reporting requirements had since changed with CCW having to submit a Plan every four years broadly in line with the National Assembly of Wales' election cycle. The Plan would essentially be CCW's response to the new Assembly Government's strategic agenda.

OBJECTIVES & METHODOLOGY

In early 2006, the consultancy Bute Communications completed a futures exercise for CCW that introduced the concept of futures and scenario planning to the organisation. The aim of the work was to help the organisation to develop informed long-term objectives, based on an understanding of issues that may arise. The research tested the usefulness of using the futures approach in CCW's Corporate Planning and Budgeting processes and sought to increase awareness of events on the horizon that could affect CCW's work, making CCW more aware of the need to ensure that appropriate mechanisms are put in place to deal with the impact. Whilst the work was considered a useful exercise, it was suggested that the findings were biased towards 'policy' developments, resulting in an incomplete coverage of CCW's remit. It was felt, however, that the approach could be used to support the development of the next Corporate Plan.

The subsequent fuller futures exercise in question was therefore focused on the Plan period, building on what was achieved previously, but developing scenarios and identifying

key drivers relevant to CCW's whole remit to help develop a thorough understanding of how the environment in which it operates might change over the Corporate Plan period.

To this end a **panel of experts** was selected from CCW staff and its external stakeholders and took part in a Delphi process over two rounds of future scenario development. The second round enabled identification of the forthcoming issues and events of most interest or concern to the panel. A Futures Seminar was held to consider and to test the draft scenarios developed following the second round survey and to begin consideration of their impact on CCW's planning. The Seminar also stimulated work on identifying the key external drivers on which the development of the Corporate Plan should focus.

The individual steps or phases of this futures exercise were sequenced thus:

- Step 1: **The Expert Panel** - The panel was selected by the CCW project steering group. The panel was designed to include a cross-section of people from different parts of CCW as well as some its key external stakeholders. The selection was completed in November 2006.
- Step 2: **The Emerging Drivers** - These were proposed by the consultants, considered jointly with and approved by the CCW Senior Management Team and "framed" the Delphi exercise.
- Step 3: **The First Round Questionnaire** - This was developed and based upon the agreed drivers and trends. The questionnaire was designed to be open-ended and to gain as much information and opinion as possible from participants. It included a series of structured questions and statements developed by the researchers. Participants ranked items in three ways - by priority, impact and likelihood. Each participant was also invited to comment on his/her rationale for the rating and to add additional items.
- Step 4: **Analysis of the First Round** - This was completed immediately upon receipt of all panel members' responses and sought to identify the key issues and views emerging from the panel.
- Step 5: **Second Round Questionnaire** - This was developed using information collected during the first round and was sent out in early February 2007. It followed the same structure as the first round questionnaire, but presented a narrower range of scenarios for consideration.
- Step 6: **Analysis of the Second Round** - This analysis sought to identify the panel's 'independently collective' view of the most likely scenarios facing CCW, as well as the most important and those with biggest potential impact upon the organisation.
- Step 7: **Futures Seminar** - This was held on 28 February 2007. The seminar comprised members of the expert panel, CCW Directors Team and other key staff with the opportunity to discuss the proposed scenarios identified by the panel and to begin consideration of their impact on planning. Discussion also took place on key drivers for the Corporate Plan period.
- Step 8: **Key Drivers** - following the seminar, internal specialists were asked to carry out a detailed analysis of their area of expertise, looking forward to 2012 and beyond. This knowledge base was then pulled together and the

information formulated into a series of high level drivers - on which the development of the Corporate Plan would subsequently focus.

Step 9: **Presenting the findings** - This Futures report, and the work on high level drivers, was submitted the CCW Council in April 2007. This was the final output of the research project and described the scenarios and the information gained through the Delphi process and the analysis of high level drivers.

Within each phase or step different processes and analytical tasks were accomplished:

- **Analysis of Drivers**

The first task in this project was to update an earlier analysis of CCW's drivers for change. The update also captured drivers emerging from the CCW's wider operating environment - an important expansion of focus given the new aim of informing the organisation's forthcoming 2008-12 corporate plan.

- **Developing the Drivers for the Delphi Exercise**

A range of drivers was identified to frame the scope of the research exercise and presented to a CCW Senior Management Team (SMT) meeting at the end of November 2006. Members of SMT made some additional suggestions and proposed some additional drivers. These were, by category:

Policy and Governance

- The potential impact of the Government of Wales legislation
- WAG's "Making the Connections" > an increased localisation of service delivery
- The WAG Spatial Plan
- Major reform of funding programmes at a Welsh, UK and European level

Economic

- Escalating energy prices and overall economic impact of higher prices
- Changes in agricultural markets > a greater emphasis on organic production, food self-sufficiency and a reduction in "food miles"

Social and Public

- Greater public awareness of environmental issues
- Socio economic factors e.g ageing population, economic inactivity and the different demands of a changing population
- Public behaviour change as a result of policy imperatives (especially in health and well-being, and education)

Environmental

- WAG environmental strategy
- The Stern Report re climate change
- Development of a climate change adaptation strategy specific to Wales

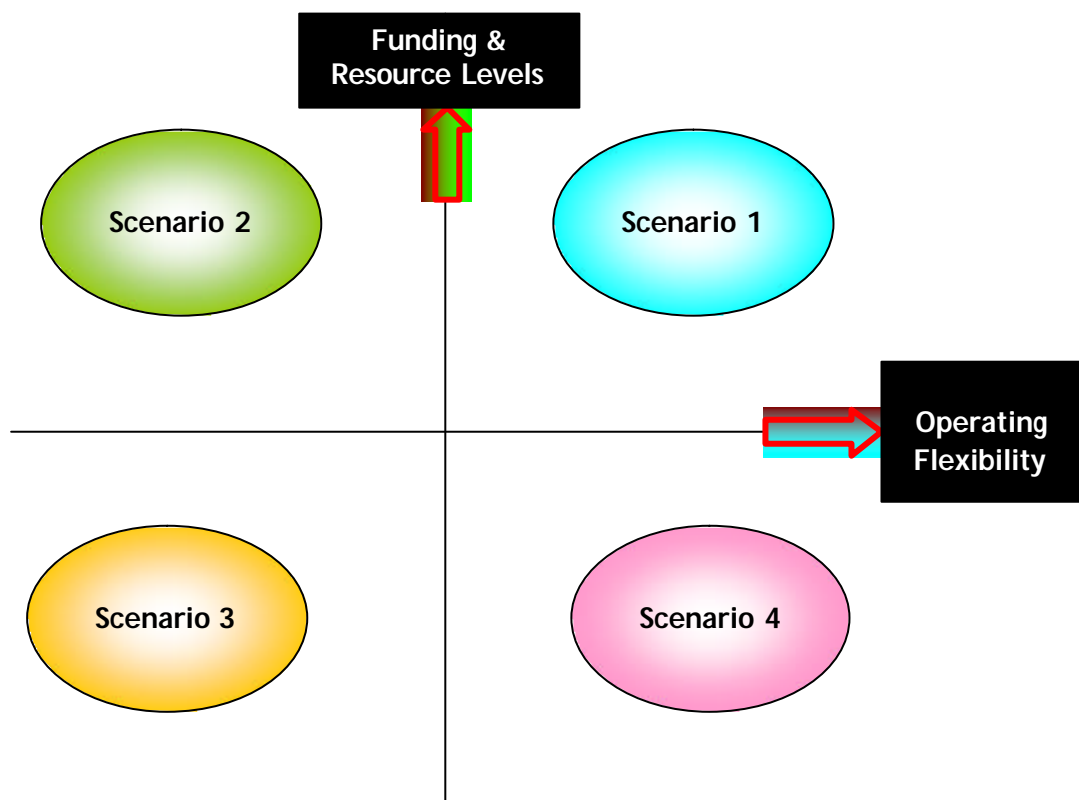
- **Analysis of the Delphi Questionnaires**

The expert panel provided detailed responses to two rounds of questionnaires on future scenarios. The analysis of both rounds then informed the development of the final scenarios presented in the next chapter. Analysis of the second round questionnaire responses in particular revealed several developments on the themes identified in the first round of the process. In this round the panel was asked to score and list their priorities. The panel was asked to score the statements on the basis of their priority, impact upon CCW and probability. At the same time as scoring for priority, panel members were asked to allocate scores for probability and impact. The mean scores of the panel's weighted

priorities were calculated by multiplying the means of probability by impact by priority. The weighted priorities showed little change in the panel's emphasis and indeed revealed the same top five scenarios as the analysis of priorities alone. The fourth and fifth scenarios swapped position but otherwise the Panel selected the same priorities as the most important. Lower down the list of priorities, greater differences emerged. "Other" issues were also analysed in the same fashion, with a probability x impact score for each proposition. The second round broadly confirmed the findings of the first. The Futures Seminar held on 28 February identified the need for thorough and systematic analysis of all external drivers, with a costed assessment of CCW's likely response, as necessary preparation for the development of the Corporate Plan. This work was beyond the remit of the Futures research contracted to the consultants, which meant that it was carried out by internal CCW specialists simultaneously with finalising of the futures report. The complete package was then presented to CCW's Council in April 2007.

CONTENT AND FINDINGS

Scenarios to inform CCW corporate planning emerged from analysis of the two rounds of questionnaires and the information gathered during the process. The two determining axial factors in CCW's future planning were those of **funding/resources** and **operating flexibility**. These themes emerged from the research and underpinned aspects of the decision-making and context for CCW's work in the next planning period.



The 4 resulting scenarios all paid particular attention to the nature of the relationships between CCW and its partner organisations, including other environmental organisations. The scenarios produced focused on the environment within which CCW must operate, whatever its priorities for work. They set the context for CCW's work and can be used to test and rehearse CCW's response to changes in the environment within which it operates, to ensure that the organisation has considered how best to achieve its objectives in each of these circumstances.

THE SCENARIOS

SCENARIO 1 - this operating environment would mean that CCW is well funded and has a high degree of autonomy in setting its own priorities

SCENARIO 2 - this represents a situation whereby CCW is well resourced, but is seen by central government as a tool to deliver its remit.

SCENARIO 3 - this represents a situation where CCW's budget is under pressure, but it still possesses a degree of autonomy.

SCENARIO 4 - this is a challenging operating environment for CCW, in that there are pressures on its budget and it has little autonomy. It is in the position of having to make hard choices on which priority areas of work to resource.

Each scenario was tested against four pen picture case studies, representing elements of work from across the breadth of CCW's remit. These case studies illustrated in more practical terms the issues facing CCW in each scenario. The case studies were:

- Dealing with development pressure
- Meeting our obligations under EU legislation
- Rural land-use and ecological connectivity
- Connecting the public with the natural environment

THE DRIVERS

This work also produced a set of high level key drivers. It was agreed that CCW's direction, and the process of identifying priorities for the Corporate Plan period, should focus predominantly on its response to these seven key drivers in tandem with known commitments such as meeting environment strategy targets. The drivers are:

- Preparing for and responding to **climate change**, on the land, the coast and in the sea, through habitat improvement.
- Preparing for and coping with radical changes in **rural land-use/ sea-use** such as CAP reforms and a new era of forest harvesting.
- **Social and economic changes** (including globalisation, demographic changes in Wales)
- Increasing emphasis on **spatialised policy** and planning on land and at sea
- Continued growth and diversification of **recreational use** of the environment and its importance to the economy.
- Responding to the drive for inclusion, participation, engagement and the **emphasis on citizenship** - both from a political and social perspective
- **Public sector reform** - the challenges and opportunities generated

In Summary

This work proved useful in challenging CCW to take a longer-term view and was successful in pulling together a repository of valuable information that was used in the construction of the Corporate Plan. The project also became a catalyst for other work within the

organisation and the techniques used in this project will be used in future policy work and it is intended that key policy staff will be trained in these techniques to ensure that these skills are available within the organisation.

This work provided CCW with information about how its future is perceived by a number of internal and external stakeholders. The four scenarios attempt to synthesise these different views into a coherent and understandable form, whilst at the same time creating a context for debate on these futures.

The exercise and research contributed towards the development of the corporate plan and the information gathered can be used as the basis for further consideration of the evolving changes to CCW's operating environment. Put succinctly - the scenarios will describe possible operating environments for CCW, whilst the key drivers will determine the priorities that the organisation needs to focus on.

SOURCES AND REFERENCES

- The Countryside Council for Wales www.ccw.gov.uk
- The Welsh Assembly Government
<http://wales.gov.uk/topics/environmentcountryside/?lang=en>

Case Study 2: Digital Thermi – Networks & Digital Applications for Citizens

Central Macedonia , Greece

Author: Panagiotis Tsarchopoulos, patsar@auth.gr

Regional Actor/Organisation: Municipality of Thermi

FUTURREG Partner: URENIO Research Unit, <http://www.urenio.org>

Type: Futures in Places - Scenario Building application

Duration Period: July 2006 - Nov 2007

Budget: Not available

Time Horizon: 2010 - 2012

PURPOSE

The purpose of the sub-project was to support the Municipality of Thermi during the design of its "Digital City". Digital Thermi was conceived as a combination of a broadband Wide Area Network (WAN) with a web-based application platform. This combination of network and services was planned to assist the operation of the municipality of Thermi, established enterprises, the citizens and visitors. The scenario building technique was used in order to help the authorities of the municipality of Thermi to choose between an infinite number of options and possible configurations in: 1) Communication infrastructures, 2) Computing infrastructures and 3) Web applications.

CONTEXT & CHALLENGES

The Municipality of Thermi is located in the eastern region of Thessaloniki, 15 km distance from the centre of Thessaloniki. It covers an area of 100,200 acres. The total population of municipality, according to the 2001 census, is estimated as 16,546 inhabitants. In relation to the previous census (1991) it has grown by 76. 2%.

Thermi has been transformed into the managerial, cultural and athletic centre of the eastern region and a recreational magnet for the whole Thessaloniki area. This is largely

characterised by the new and more prominent role of the tertiary sector and new kinds of internationalised services. The National Centre of Agricultural Development, faculties of the Aristotle University of Thessaloniki, the Thessaloniki Technological Park, the Thessaloniki-Macedonia Airport and an important amount of private schools are also situated there. Moreover, as result of the rapid development of the region an increasing number of bank branches, private investments, departments of public organizations, etc. have been located there. To better serve its citizens, businesses and government, the Municipality of Thermi is endeavouring to design and develop the “Digital City of Thermi” - a “connected” city that combines a broadband communications infrastructure, a flexible and service-oriented computing infrastructure combined with innovative services. The creation of the Digital City will benefit the region greatly:

- Government agencies will improve the efficiency of their services while decreasing costs
- Democracy will be enhanced
- Citizens will be more satisfied with government services as well as with their community life
- Businesses can be more competitive and profitable
- Working models can be more flexible
- The “image” of the municipality and the region will be improved

OBJECTIVES

The objective of the current sub-project was to justify any further actions regarding the transformation of the Municipality of Thermi into a Digital City. This justification has been achieved by applying the “scenario building” technique in order to choose between an infinite number of options and possible configurations for:

- Communication infrastructures (wire or wireless network, private or public network, etc.)
- Computing infrastructures (security system, format of spatial data, web services, RFID, sensors, smart objects, etc.)
- Web applications (e-Government, e-Procurement, e-Commerce, e-business, e-Health, e-Learning, traffic management, e-ticketing, public safety, video surveillance, and management, asset management, promotion & culture, etc.)

METHODOLOGY/APPROACH

The Scenario Building Technique was used for the evaluation of the selected scenarios. According to the FUTURREG toolkit this technique can be implemented in 12 steps: 1: Identify the focal issue or decision, 2: Key forces in the local environment (microenvironment), 3: Driving forces (macro environment), 4: Rank by importance and uncertainty, 6: Fleshing out the scenarios, 7: Implications, 8: Selection of leading indicators and signposts, 9: Feed the scenarios back to those consulted, 10: Discuss the strategic options, 11: Agree the implementation plan, and 12: Publicise the scenarios. These steps were adapted to the project’s particularities.

For the creation of the scenarios the following core components were taken into account:

- Socio-economic parameters (Citizens, Government, Business, Environment)

- Networking technologies - computing infrastructures
- Web application development parameters (Open Source, Propriety)
- Services

The mixture of these components is illustrated in the following table:

Networking	Target group	Services
DSL	Core of the Municipality of Thermi	Set of Services (?) e-Government and information dissemination module
WiFi		
WIMAX		
Fiber Optics	The whole of the Municipality of Thermi	Set of Services (?) Enterprises
3G / UMTS		Set of Services (C) Special services

The implementation process consisted of the following phases:

- Global Best Practice on “Digital Cities” identification and evaluation (>100)
- Detail mapping of the current situation in the Municipality of Thermi
- Identification of requirements (10 interviews based on a structured questionnaire)
- Analysis of networking technologies
- Scenarios for networking
- Scenarios for the services in the following fields: E-government, E-services, E-markets and City’s e-promotion
- Evaluation of the different scenario matrices

The scenarios have been evaluating using the following criteria:

- The Municipality’s needs and future directions
- Technical feasibility
- Commercial viability
- Existing circumstances (infrastructures, human resources, etc)
- Total cost and financing opportunities
- Medium and long term community effects

The time period was defined as 3 years, due the technological characteristics of the project.

PARTICIPANTS/STAKEHOLDERS

The major stakeholder for the application is the Municipality of Thermi.

CONTENT AND FINDINGS

The outcome of the sub-project was a study/report. This study focused on the main components for the implementation of Digital Thermi. It includes an estimation of the implementation and operational cost for the proposed solution as well as the conditions for the financial and operational viability of Digital Thermi. The proposed solution has three main sections: (a) The telecommunications network i.e. fibre optic, wired and wireless WAN, (b) the applications and services that can be provided to the citizens of Municipality of Thermi and (c) a description of the Operational Centre of Digital Thermi.

The proposed scenarios finally were organized according to three pillars:

a. Network

The backbone network as well as the user access network is based on Wi-Fi protocol. Total estimated implementation cost €68,430.

The backbone network is implemented using fibre optics, while the end user accesses network through Wi-Fi protocol. Total estimated implementation cost €18,176,580.

b. Target Groups

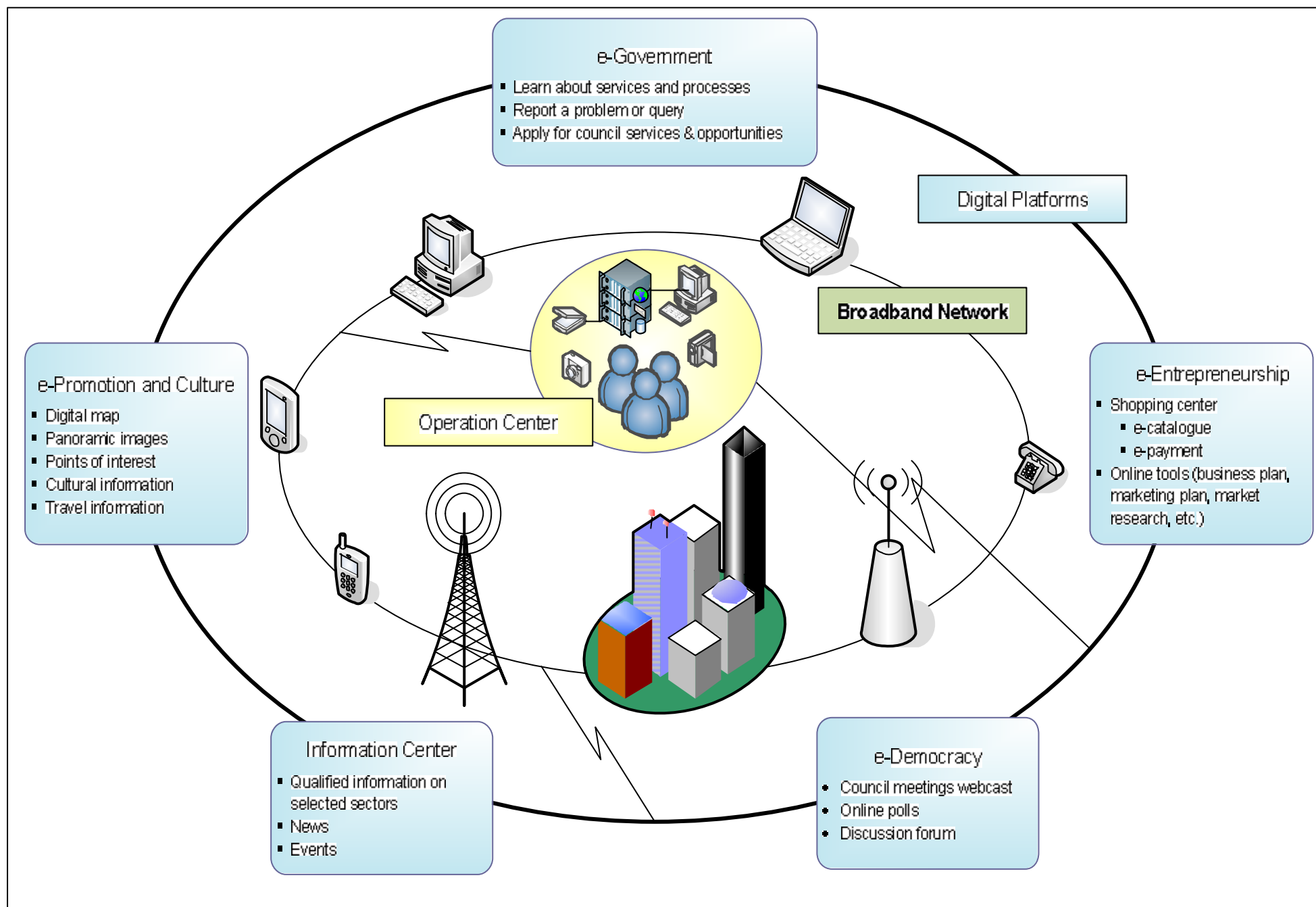
The whole area that the municipality covers which is wired by the proposed network. Central area points in the different settlements covered by Wi-Fi networks, while all the citizens have access to the applications via their domestic Internet connections.

c. Services

Implementation of all the rest proposed applications. Total estimated cost €1,866,039.

Initial development of five core applications each of them covering a basic component of the municipality, such as democracy, governance, business operations, information and tourist promotion. Total estimated cost €609,400.

The following diagram illustrates the proposed solution.



The following application modules will be implemented:

e-Democracy The module provides information regarding the activities of Local Government or Municipal Authorities and allows the on-line attendance at the Municipal Council's or committees' meetings (webcasts). The citizens' participation in the decision-making process is achieved through their contribution to an on-line discussion forum and to public opinion polls.

e-Governance The module provides information regarding the services and processes of the City. Citizens can report a problem or query and apply for council services & opportunities (i.e. marriage certificate, birth certificate, etc).

e-Entrepreneurship The module provides companies with on-line tools (such as a business planning tool, a marketing plan tool and a market research tool) aiming to enhance their efficiency. Furthermore, the module supports e-commerce services by permitting the promotion of their products through the City's electronic marketplace.

Information This module provides updated information about the developments in selected sectors of interest, depending on the particularities of each city. The information applies to the residents as well as to the entrepreneurs that are activated in the city. It also covers the city's events.

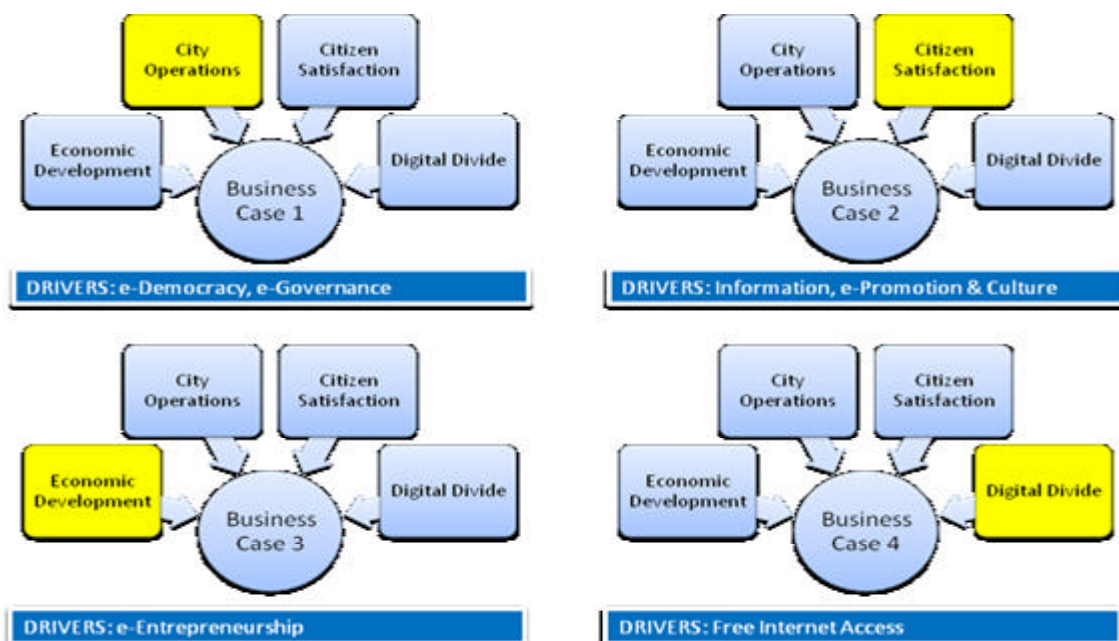
e-Promotion and Culture This module provides a virtual tour to the city, with the use of digital maps and panoramic images. Furthermore, contains information about the city's culture (e.g. monuments, places of interest, events etc.) that help residents or visitors organise their spare time according to their special interests.

CONCLUSION & POLICY IMPLICATIONS/IMPACT

The solution is considered to be a viable plan as it consists of a number of drivers that:

- Enhance the municipality's operations
- Improve citizens' satisfaction
- Boost economic development
- Bridge the digital divide

The Municipality of Thermi has started to implement the proposed solution. The following diagram illustrates the way that each driver affects the solution's viability.



Case Study 3: Molinay 2017– Futures in an Urban Context

Wallonia, Belgium

Author: Cécile Parthoens

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FUTURREG Partner: The Destrée Institute www.institut-destree.eu

Type: *Futures in Places* – a futures exercise undertaken with a territorial/spatial focus

Duration: March- December 2007 **Budget:** 40,000 Euros **Time Horizon:** 2017

PURPOSE

The Molinay district is part of Seraing, a city of 61,000 inhabitants near Liège, in the Wallonia region of Belgium. It is heavily marked by industrial history (steel industry) and has not yet recovered from an industrial crisis. Poverty, insecurity, empty shops, black spots and other glaring signs of decline are common sights. The primary purpose of the project was therefore to develop a mobilising project for the area, for and with its inhabitants and local actors (a bottom-up approach) in order to support a regeneration process. A second ancillary purpose was to convince the city regarding such urgent and long term actions that thus need to be taken.

CONTEXT & CHALLENGES

Some 600,000 people live in the Liège area, often presented as the economic heart of Wallonia. The Molinay district within this has been declining for 30 years. It is heavily affected by its industrial history (largely steel industry, which is currently owned by Arcelor-Mittal) and has yet to recover from industrial crisis. The social deprivation, high crime levels, lack of small scale retail and general urban blight are commonly depicted in award-winning feature films of the Dardenne brothers.

Two parallel and major issues affect the future of the Molinay district:

1. The City Master Plan

Since 2001, the local authorities have been at work on a Master Plan for the whole industrial valley. The aim is to transform the city's image and to improve living conditions through various means: redevelopment of land, green investments, attracting investors, developing PPP etc. The Molinay district will be marginally - possibly negatively - affected by this plan.

2. Re-opening of the local steel foundry

In 2007, the economic recovery is spluttering and the demand for steel is increasing. Arcelor-Mittal has decided to reopen the Seraing Blast Furnace n°6 in November 2007. This industrial unit is located very near the Molinay district and various sources of disturbance can be felt directly in the streets.

Prospects are not bright for the area: investments occur outside its limits, pollution and noise have returned, there is a declining commercial environment, an impoverishment of the population. There is thus a need to transform this undesired scenario of the future. The purpose of the project was therefore to develop a mobilising project for the area, for

and with its inhabitants and local actors (a bottom -up approach) in order to support a regeneration process.

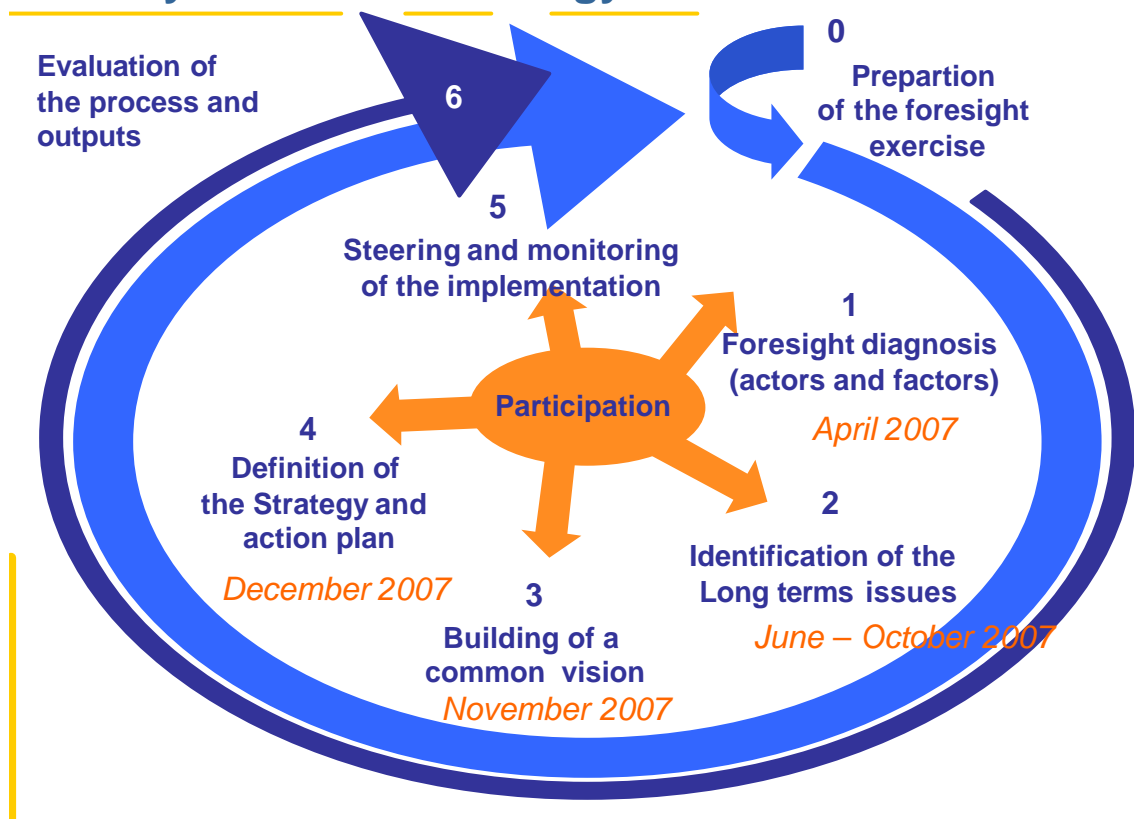
OBJECTIVES

The objectives of the project were therefore:

- to propose a mobilising project for the area, for and with its inhabitants and local actors (a bottom-up approach) in order to support a regeneration process.
- to mobilise local actors and citizens around a territorial project based on the participation of all the citizens to the management of the city
- to promote democracy, freedom of thought, multiculturalism and tolerance as essential values of local communitarian development

METHODOLOGY

Moliny 2017 : Methodology



The project was mainly based on qualitative inputs such as expert panels and focus groups. A SWOT analysis was realised in the diagnosis phase.

A specific feature of the methodology was its participatory character, supported by the *World Café* method - the *World Café* is a creative process for facilitating collaborative dialogue and the sharing of knowledge and ideas to create a living network of conversation and action. In this process a café ambiance is created, in which participants discuss a

question or issue in small groups around tables. At regular intervals the participants move to a new table. One table manager stays and summarises the previous conversation to the new table guests. Thus the proceeding conversations are cross-fertilised with the ideas generated in former conversations with other participants. At the end of the process the main ideas are summarised in a plenary session and follow-up possibilities are discussed.

(*Participatory Methods Toolkit. A practitioners manual. New edition, 2005, Baudouin foundation - www.kbs-frb.be*)

The exercise involved the following types of participants/stakeholders:

- Local associations, NGO's
- Citizens
- Local authorities (civil servants, the police officer, the childcare service)
- The urban planning agency (ERIGES)
- Local enterprises
- University and field experts.

In total, more than 50 actors and 100 citizens (inhabitants from the area) were mobilised in the process.

CONTENT & FINDINGS

1. Identified socio-economic or cultural trends/trend breaks

The Molinay area : SWOT (snapshot)

Strengths

- Compact urbanism
- Strong cultural diversity
- Will of the actors
- historical patrimony
- The geographic situation
- ...

Opportunities

- The city project for redevelopment
- A new mayor
- The trend towards sustainable development
- A regional will to develop the Liege region
- A stronger media interest for local issues
- ...

Weaknesses

- The industrial pollution
- The negative image of the area
- Insecurity problems and feelings
- The commercial decline of the area
- Difficulties with the teenagers
- A nostalgia of the past
- A weak accessibility
- ...

Threats

- The housing policy / Risks of ghettoisation
- The economic context
- The Move of the public services (city hall) to the area
- ...

2. The set of technological and sectoral trends/trend breaks that are anticipated in the exercise

- Environmental / public health constraints attached to socio-economic development
- Renewal of the housing stock
- New mobility strategies
- Renewal of practices of local governance
- Crisis in local participation together with a call for social reliance from the inhabitants
- Migration and communitarian attitudes

3. Opportunities and Challenges that might arise from the trends/trend breaks

i.e. The need for investing local people in their future. A festive meeting was organised on Sunday 9 September 2007 inside the cultural centre of Seraing, which is located in the Molinay, with the following factors considered:

- Objective : contact 100 persons from the area
- Outputs : a desired future for the area
- 5 Spaces:
 - **Imaginative** with the help of pictures of the Molinay, symbols (street furniture, greener etc), scissors and glue, how can one imagine the future area...?
 - **Memory** - the work of the CAL during 10 years is presented.
 - **Discovery** - examples of other urban declining areas that have been transformed
 - **Reflection** - a futures workshop (with translation and recording): "In 2017, you go out from your home, could you describe what you see, what you hear ?"
 - **Practical** - a crèche and a convivial buffet dinner.

CONCLUSION & POLICY IMPLICATIONS/IMPACT

1. Key issues raised with particular relevance for policy-making

This first attempt at practicing Futures at a very local level has delivered some interesting lessons on governance, participation and local democracy. One can thus emphasise that:

- Small territorial size does not mean less complexity: the deeper you dig in reality, the more complex and multidimensional the situation becomes.
- Small territorial size allows the mobilisation of almost all relevant stakeholders (and might impact on their work): this exhaustive approach increases the involvement of people but local competition must also be managed.
- This small scale approach (and possibly concrete solutions) gives another viewpoint to large scale problems: the fact of having Arcelor Mittal in its back yard and suffering from polluted air or noise is a strong incentive to invest the actor in the problem and in possible routes to solving it.
- The approach is a nice way to speak about Europe with Mr and Ms Smith, in layman's terms given the capacity of the local populations to understand and integrate the multiple dimensions of the issue affecting them. The same goes for the local authorities, far away from Brussels or other decision-making places.

- Local futures exercises or Foresight challenge the “defensive” attitude of public authorities who instinctively tend to preserve immediate interests and are forced, in this case, to adopt a long-term perspective that goes beyond the electoral mandate.
- A bottom-up process must not forget to integrate top down aspects and must attain political legitimacy: the voice of the citizens and/or local association is not everything and if decision is needed at the end of the day, local authorities must, at some stage, be involved in the process. At this level, something must happen! One must not disappoint the expectations of the citizens. It’s not just a question of means, but also of results.

2. The solutions and/or adaptations that will be required to tackle challenges and benefit from opportunities

- There is a need for renewed strategy in the field of urban planning in densely populated areas, of access to culture for underdeveloped areas and for reinvestment of these areas by local service facilities.

3. Identified priorities and focus for action

- Urban planning
- Local coordination of action from the viewpoint of associations and NOGs
- Housing policy
- Education and culture

4. Identified critical factors and key players in shaping the future

- Remittance of the past: the backward looking reopening of the blast furnace is somehow delaying a new approach to the city’s development
- Emergence of environmental and public health constraints can counterweight this difficulty of looking forward

Key Players:

- Local authorities
- Local associations
- Private sector priorities

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Case Study 4: Trends in the Regional Agri-Food Industry and Development of a Strategic Plan for the Centre for Food Innovation & Technology

La Rioja, Spain

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Type: Sectoral Futures/ Innovation Futures - a futures exercise addressing specific regional sectoral strengths or weaknesses, and the use of futures in developing innovation strategies

Duration: December 2006- October 2007 **Budget:** Euros N/A **Time Horizon:** 2020

PURPOSE

The study aims to serve as a stimulus for the different parties involved in the sector, from public authorities to companies, by informing professionals of the technological and organisational trends that will form part of the everyday scenario of their business field in the near future. The objective is to project the position of the Range 4 and 5 food sub-sectors in relation to future national and international trends in technology, the economy and industry over a timescale of ten to fifteen years. This information will also be very useful when it comes to defining the strategy for the Centre for Food Innovation and Technology of La Rioja and the development of new RDI projects.

CONTEXT & CHALLENGES

The tinned and bottled fruit and vegetable sector in La Rioja has an annual turnover of over 375 million euros, which makes it the second agri-food industry of the region, second only to the main industry of La Rioja, wine. It also makes an important contribution in terms of the employment it creates and the way it maintains the economic activity and prosperity of many towns and villages. These positive factors cannot and indeed must not be used to hide the difficulties faced by the sector at the present time which pose a real threat for the future of part of the sector. The Rioja tinned and bottled food sector shows great diversity in terms of the size of its industries, diversity expressed not only in terms of turnover, but also in terms of their capacity for innovation and the launching of new products. We find therefore that there are large companies in the top positions in the national ratings which have managed to diversify their product portfolio and have made progress in Range 4 and 5 products, which respond to current social demands. At the same time however La Rioja also has a multitude of small companies working in traditional tinned and bottled vegetables and fruit (Range 2) and in frozen foods (Range 3).

Range 4 products such as salads and sautés of fresh vegetables in bags and Range 5 products which are short-life, pre-cooked products ready to eat, have become increasingly popular among consumers making them a clear opportunity for many companies. The constant challenge of commercialization and the appearance of aggressive overseas competitors make innovation more necessary than ever.

In view of this situation, the Centre for Food Innovation and Technology of La Rioja (CITA La Rioja), situated in Calahorra, is being set up with the aim of becoming a technological complex that will provide a national reference for research into Range 4 and 5 products. The aim of the CITA is to promote and encourage research within companies, so as to increase the competitiveness of their products and facilitate their adaptation to new market demands. In this context the CITA has signed an agreement with AINIA (Association for Research in the Agri-Food Industry) to get the Centre underway. The main objective of the collaboration between the Centre for Food Innovation and Technology of La Rioja (CITA) and AINIA is to produce a prospective study aimed at getting the sector involved, identifying future trends and laying down the bases on which to develop a strategy for the CITA.

METHODOLOGY

The methodology used was to hold a series of events and workshops on technology and prospects for the agri-food industry, and Range 4 and 5 products. All the companies from the sector and the scientific world of La Rioja were invited to present and debate the critical technological trends on which the companies from La Rioja must focus their efforts. The conclusions obtained and the information as to the situation of the companies in the sector will serve as support for the CITA strategy.

The other aim of these events was to get the companies involved in the activities of the Centre. In 2007, Futures Workshops were held on 26 June and 20 and 27 September respectively to discuss the following subjects:

Development of Range 4 and 5 products

The knowledge of the current situation as regards trends in the development of Range 4 and 5 vegetable and fruit products is a very useful tool when it comes to deciding where to make the technical and commercial efforts that will allow the companies to offer a wide range of high quality products.

This question was discussed during the Open Doors Event with the following important aspects being analysed:

Development of Range 4 products

- Strengths and weaknesses of Range 4 products
- Profile of the consumer of Range 4 products
- Current situation of Range 4 products
- Progress in consumption of Range 4 products
- Current situation of the world market for Range 4 products
- Situation of the Spanish market for Range 4 products
- Innovation in Range 4 products
- Examples of Range 4 products recently launched on the world market
- General manufacturing process for Range 4 products
- Examples of industrial implementation and development of Range 4 products

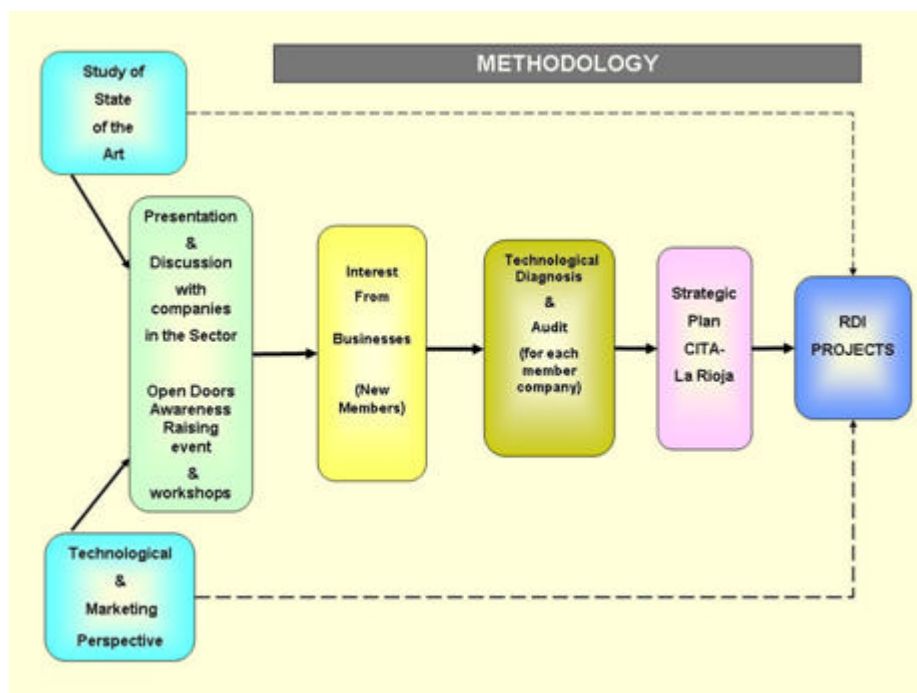
- General manufacturing process of Range 5 products
- Examples of industrial implementation and development of Range 5 products

Technological Self-diagnosis Workshop

The participants in this workshop carried out a collective exercise of technological self-diagnosis, in which each company was able to identify, through a common methodology, what their potential needs and capacities were and how to meet them or take advantage of them. The workshop was aimed at fruit and vegetable producers and the bottling/canning industry.

Audit of the Sector by Agri-Food Companies

Taking the results of this analysis as a reference, alternatives were proposed that would update the sector in a progressive, viable way, with new processes and/or technologies to adapt the production structures to the immediate or future needs of the legislation and the market.



CONTENT & ACHIEVEMENTS

Technological and Socioeconomic Trends Identified

In the tinned and bottled fruit and vegetable sector in La Rioja there are a lot of small companies which typically have:

- Outdated facilities
- Relatively uncompetitive products
- A lack of interest and enthusiasm for making the investments required to adapt the company to the new market situation (owners reaching retirement age).

In recent years there has been a decline in the volume of fruit and vegetables produced in our region which has had a negative effect especially on small companies that have found it more difficult to obtain supplies at good prices. In addition, the globalisation effect of the processed fruit and vegetable market has dealt a sharp blow to the tinned and bottled food sector, which has seen its products suffer from the competition from imports from China and Peru. This is because labour costs have a very strong impact on production costs and in these developing countries labour is still very cheap. A strongpoint which must however be emphasised is the image of the La Rioja agri-food sector, at both a national and international level, which is associated with high quality products, and the fact that there are gaps in the market which have yet to be filled such as the new demand for new Range 4 and 5 products which with a minimal transformation of the manufacturing processes may be met by established companies in the sector.

The small size of some companies may be an advantage because they have more flexibility when it comes to making the necessary changes to adapt to the new demands of the market.

The transformation required to make the sector more competitive will involve:

- The development of new products that meet the new needs of consumers.
- New ways of conserving the products.
- A move towards minimally processed fresh products, Range 4.
- A move towards pre-cooked dishes, Range 5.
- Modernization of production lines and manufacturing facilities.
- Technological development of the sector.

CONCLUSIONS & IMPACT/IMPLICATIONS.

The identification of these trends and the analysis of the companies are very important when it comes to deciding what actions should be taken by the Centre for Innovation and Technology of La Rioja (CITA-La Rioja) in its role as a technological complex providing a national reference point in research into Range 4 and 5 processed fruit and vegetables (fruit and vegetables packed in bags and short-life pre-cooked foods).

The specific purpose of this exercise was to serve as a guide for activities to be carried out aimed at:

- Promoting and publicising the research carried out in agri-food companies.
- Enhancing the competitiveness of the products offered by the sector and facilitating their adaptation to the new demands of the market.
- Offering highly specialised technological services, aimed at promoting research and development of different processing techniques and the way these affect food quality and safety, questions of vital importance for both businesses and society in general.
- Technical assistance and knowledge management which reveals the potential for development of different production lines that allow companies to access new markets and become more competitive.

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Case Study 5: Technological Trends - Futures and the Region's Footwear Sector

La Rioja, Spain

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FUTURREG Partner: Agencia de Desarrollo Económico de La Rioja (ADER)

Type: Sectoral Futures/ Innovation Futures - a futures exercise addressing specific regional sectoral strengths or weaknesses, and the use of futures in developing innovation strategies

Duration: June 2006- November 2007 **Budget:** 53,000 Euros **Time Horizon:** 2011-2020

PURPOSE

The prospective study being presented here entitled "The future of the footwear sector in La Rioja" aims to serve as a stimulus for the different parties involved in the sector, from public authorities to companies, by informing footwear professionals of the technological and organisational trends that will form part of the everyday scenario of their business field in the near future. The aim is to project the position of the footwear sector in La Rioja, in relation to future national and international trends in technology, the economy and industry over a timescale of ten to fifteen years.

CONTEXT & CHALLENGES

In recent years, technological development, the liberalisation of markets and the arrival on the stage of newly-industrialised countries have substantially changed the basic rules governing all business activities. The big challenge faced by businessmen in the first decade of the 21st Century is how to cope with the effects of globalisation, not only because of the need to carry out important organizational restructuring, but also because of the advantages that can be gained from a sufficiently in-depth knowledge of the business opportunities presented by this new economic model.

As is the case in other mass consumption sectors, the footwear sector in Spain is currently in a very delicate position because of competition from countries with significantly lower production costs, and high levels of uncertainty due to changes in the preferences of the final consumer in a market in which the fashion factor is becoming increasingly important. In a context like this, all companies must embark on complex organisational changes, such as restructuring and modernising their production processes, so as to be able to remain competitive at an international level. All of this will inevitably require increased levels of innovation, design and quality.

In view of this situation, our objective was to carry out a prospective study which would highlight the most important future trends to affect the footwear sector in the coming years. For this task, the Fundación OPTI (OPTI Foundation) received both the sponsorship and the collaboration of the La Rioja Economic Development Agency (ADER), and this study is the product of a collaboration agreement between the two organisations.

The work proposes to cover a 15-year timescale, and aims to provide food for thought for all those who in their different ways are involved or work in the field we are studying and especially the companies whose future is being discussed here.

OBJECTIVES

The study had the following specific objectives:

- Identify the future trends that will influence the technological and industrial development of the footwear sector in La Rioja in the coming years.
- Identify the needs for innovation and associated critical technologies.
- Define the future strategies and frameworks that are most relevant for the region and select those which appear most promising, so as to focus our efforts and investments on them.
- Offer a useful consultation tool for taking decisions regarding R&D policies.
- Serve as support for the business planning of the sector, providing help for the establishment of paths of action based on the scientific and technological documentation provided by the study.

METHODOLOGY

We used the following work methodology in the preparation of this study.

Work Phases

a) Documental synthesis

As a basis on which to prepare the study we analysed the recent trends and studies at a national, European and international level, identifying technologies currently in use, the main economic indicators for the sector, and the scientific/technological and management questions considered of key importance for the future of the footwear sector in La Rioja.

b) Panel of Experts

This prospective study has been carried out with the advice and guidance of a select Panel of Experts made up of professionals from the region. The role of the panel is both to lead and to validate the study. The functions of the panel are to propose the issues to be discussed in the survey and to draw up a list of the experts to be consulted.

The 8 members of the Panel of Experts who have taken part in this study come from industry, technological centres, the Public Authorities and the Universities. We have tried to make the panel as diverse as possible in terms of the professional background of its members, so as to ensure that it represents the opinions of the sector as broadly as possible and takes in all its various different aspects.

The Panel of Experts is one of the main keys to the success of this prospective exercise.

c) Questionnaire

The questionnaire contains the 25 hypotheses for the future identified by the Panel, which are drafted in a standard format. These hypotheses are crossed with a row of variables, about which the sample population was asked to give their opinion. For each hypothesis we assessed parameters such as the importance, the competitive position of La Rioja, the limitations and measures recommended for the development of the sector and the schedule for this to come into effect. The questionnaire was sent to all the experts (97 in total) proposed by the Panel. As with the Panel, the aim was for the sample group of experts to be as broad-based as possible taking in all possible profiles across the sector from researchers and manufacturers to end users. This means that the results obtained have greater validity at a territorial level as they include the opinions of different parts of society that **are often poorly linked (industrial sector, research, academic field, etc.)**.

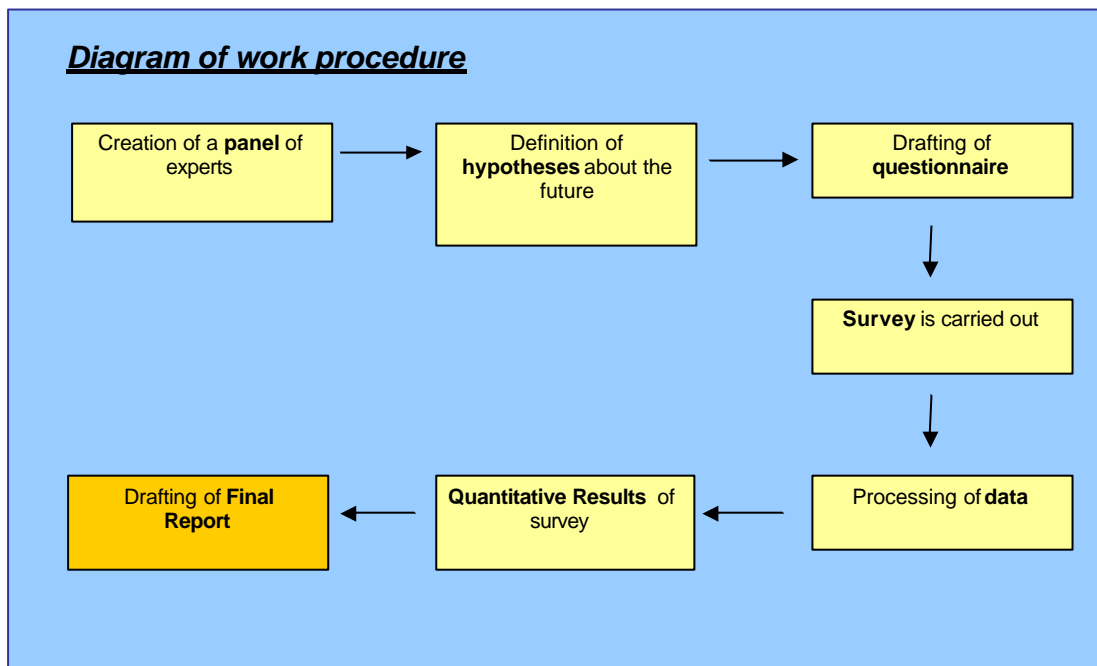
d) Analysis of the results of the survey

Once we had collected the results of the questionnaire, we then began to analyse the global statistical parameters and the parameters for each hypothesis. We obtained averages, modes and indices for the variables we defined, so as to be able to compare the results obtained for the different hypotheses and identify those that should be given highest priority.

e) Conclusions and drafting of the final report.

By sending out the questionnaire and later analysing the results our aim was to evaluate the degree of importance of the selected technologies and applications, estimate when they will come into use and determine the capacity of the region when compared with that of the rest of Spain and Europe.

The following figure shows the procedure we followed in this prospective study.



TRENDS & FINDINGS

Trends:

The force of the competition from Asian countries in terms of costs is causing a complete review of the sector.

Business Model:

The trend is for the parent company to carry out the conception and execution work (new activity of coordination-links between the parent company and relocated producers), while the manufacturing is done by subcontracted producers in countries with lower production costs.

Product Development

The macro-trend that will guide this activity will be an expansion in the variety and quality of the products.

Technology

The aim of new technology will be to meet the demands of the customer as efficiently as possible. Progressive implementation of rapid prototyping, 3D digitalisation or the obtaining of the morphological parameters of the foot will provide a means of achieving total personalization of comfort conditions. Technology will also seek to bridge the distances between the parent company and the manufacturer. Implementation of ICTs in the form of networks made up of companies involved in the same production process, and corporate networks that integrate all company information relevant for the process.

Recommendations

- Strengthening of integrated digital platforms
- Creation of a business portal for the sector
- Strategic alliances, networks of companies
- Provide advice and know-how to companies that wish to relocate part of their production.
- Alliance between footwear production companies and companies that supply technological solutions.
- Provide high level advice and consultancy services that help companies to switch to a knowledge-intensive business model.
- Permanent monitoring and information to companies as to new gaps in the market emerging at a global level.
- Promotion of research for the development of technical footwear.
- Train and inform people about the possibilities offered by ICTs.
- Reverse Engineering.
- Monitor developments in technology and inform all the companies.
- -Complete advice and information service regarding new developments in product design and processes (Rapid and virtual prototyping, simulation, 3D digitalisers...
- Penetration of technologies aimed at the personalization of the product and the development of ergonomic criteria.
- Advice for the installation and demonstration of electronic applications incorporated into the product and the process. Implementation of RFID technologies.

Key Technologies Identified.

For the ten hypotheses which the experts believe will be of most importance, we have highlighted the technologies that could be developed or implemented so as to help achieve the objectives set out in these hypotheses.

- Management and integration of information on a base provided by digital platforms.
- Implementation of digital tools - hardware for rapid prototyping.
- Development of sector-specific tools for technical design and simulation in products and processes.
- Development and implementation of methodologies for product design.
- Electronic applications built into the product and the process.
- Development of technologies for the personalisation of the product.
- Creation of systems that can reproduce the morphometric characteristics of the foot, using 3D vision techniques
- Development of specific systems to discover the needs of the final consumer.
- Reorientation of business processes in companies. Reverse Engineering.
- Creation of a business portal that enables fluid and flexible communication between internal and external parts of the company.
- Promote the creation of businesses based on networks of companies in the sector.
- Provide high level advice and consultancy services that help businesses through the transformation process.
- Promote contacts between companies in the sector, so as to create strategic alliances between them.
- Train and inform managers and directors as to the possibilities offered by ICTs.
- Make the production process more flexible and establish better links with market demands.
- Implement marketing tools aimed at specific customers or groups of customers with similar profiles.
- Advertise to customers the advantages of the high added value products manufactured in La Rioja.
- Emphasise the value of products manufactured in line with environmental legislation.

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Case Study 6: Futures for Higher & Further Education

Malta

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Futurreg Partner: Malta Council for Science and Technology - Jennifer Cassingena Harper Jennifer.harper@gov.mt

Type: Strategic Futures - a futures exercise undertaken to improve strategic and organisational development capacities in higher and further education in Malta.

Duration: Jan-Nov 2007

Budget: Euros N/A

Time Horizon: 2028

PURPOSE

The main aims of this initiative was to promote more long-term futures and evidence-based approaches to governance, strategies, and policy development in the higher and further education in Malta under the aegis of the INTERREG IIIC FUTURREG Project. The FUTURREG Project (2005 - 2007) was designed to ensure that regional policies and regional development organisations were informed by high-quality futures tools and participatory processes with significant long-term impacts. This particular FUTURREG sub-project/exercise focused on an urgent need to build up the strategic and organisational capacities of institutions in the higher and further education sector and to support them in using futures approaches and foresight tools in developing their strategies in Malta. The results of this work are being used by the Maltese National Commission for Higher Education to define a framework for future-oriented higher and further education strategies using futures approaches.

Reform of the Higher and Further Education Sector

The Higher and Further Education sector in Malta has in recent years been the focus of attention on the part of Government in Malta as part of a concerted effort to gear up the country for the knowledge-based society and the innovation-driven economy. This approach reflects Government's awareness of the importance of sound investments in higher education, research and lifelong human resources development as the drivers for sustaining wealth generation, competitiveness and quality of life.

There was also recognition that progress in this sector could only be achieved through institution-building and capacity-building efforts aimed at bringing about much-needed sector-wide reforms. These reforms are not unique to higher education since they go hand in hand with similar change processes underway in research and innovation.

In 2006 the Government set up the permanent National Commission for Higher Education (NCHE) in an effort to spearhead the reform process, especially to make recommendations regarding the required changes in the Education Act. The NCHE after consultations with all stakeholders has identified the following issues:

- i. Vision and strategic oversight
- ii. Expansion of higher education to meet future requirements
- iii. Funding and accountability
- iv. Quality assurance and accreditation
- v. Student choice and fair access

In this context, the NCHE identified a clear need to strengthen the strategic capacities of key organisations within the higher and further education sector to ensure an effective input on their part both to the national strategic plan for the sector and in developing their own long-term strategies. The NCHE was quick to recognise the importance and value of futures approaches in addressing this concern and in ensuring the development of a more coherent and robust national strategy. This led to the development of a strong collaboration in 2007 between NCHE and the Malta Council for Science and Technology (MCST) through the Interreg 3C Futurreg project to introduce the use of futures approaches in the sector.

OBJECTIVES

In July 2007, the NCHE through support provided through the MCST Futurreg project embarked on an exercise aimed at promoting more long-term futures and evidence-based approaches to policy and governance in the higher education sector in Malta.

The main objectives of the exercise were:

- To promote more long-term futures and evidence-based approaches to governance, strategies, and policy development in the higher and further education in Malta;
- To support institutions in the higher and further education sector in using futures approaches and foresight tools in developing their strategies;
- To encourage students to play a more proactive role in the higher and further education strategy process through enhanced awareness and use of futures approaches;
- To create a shared understanding of emerging trends and drivers of science-society and science popularisation futures;
- To share inter-regional experiences on futures methods and approaches for tackling future and emerging science-society challenges, namely gender, privatisation, lifelong learning;
- To define a framework for future-oriented higher and further education and science popularisation strategies using futures approaches.

To kick-start this initiative, a training event for the development of futures skills in policy was organized at the end of July for key stakeholders in the higher education sector. Those responsible for strategic policy development within higher and further education organizations were particularly targeted as it was expected that this training would benefit the development of the organisation's long-term strategic plan. As a result of the feedback from this event, three key groups of stakeholders were identified for follow-up action, namely educational institutions in Gozo (the sister island), the vocational college (Malta College for Arts, Science and Technology) and student bodies.

Adapting Futures approaches to the HE Sector

The futures approaches used in this exercise were adapted to the needs and understandings of the different stakeholder groups. Three one-day futures workshops were organised for each stakeholder group: Gozo, MCAST and students. All three workshops adopted a broadly similar approach of creating a shared awareness and understanding of emerging trends and drivers of change and their implications for the sector. The Gozo and MCAST workshops followed scenario-building approaches and produced superlative

sentences describing the organisation's achievements by 2028. The student workshop focused on the development of a mini-vision for the HE sector.

The following stepped approach was used in the three workshops organised:

Warm-up: a time-line for Gozo and GPSS 1977-2007	Goal: to heighten awareness of past change, and past watersheds / transformations
Reversing the Negative	Goal: to move from worries to transformative goals.
Emerging Issues of change	Goal: heightening awareness of oncoming change.
Briefing on emerging issues	Goal: increasing awareness of emerging changes and implications.
Stakeholder / potential partner Identification	Goal: identifying network of support for positive change.
Sentence Completion	Goal: creating concrete goals for transformative change.
Strategy Working Groups Reviewing Strategies	Goal: draft initial strategies for positive change. Goal: to share brainstormed strategies, add more concrete details, understand how the strategies might work in concert.
Creating Change	Goals: to add more concrete details, resources, and allies to each strategy; to create a list of possible next steps; to commit to creating change.
Debrief; next steps; close.	Goals: to identify biggest opportunities within grasp, hazards to avoid and desired next steps.

CONTENT AND FINDINGS

The main findings of each workshop are presented below and these take the form of success scenarios or visions for the organisation and sector:

1. Giovanni Curmi Higher Secondary School Gozo - Strategic Foresight Workshop **Exercise: 'Superlatives' Sentence Completion**

In 2028, GOZO POST-SECONDARY is a futuristic school because ... all the staff are intrinsically motivated and work together to provide a service of excellence and a climate of collegiality. Because of this, students are happy to be part of this Centre.

In 2028, GOZO POST-SECONDARY is historic among all other schools because ...

- We will be considered the major educational institution as regards proactive change in Malta.
- It will be a state-of-the-art institution.

In 2028, GOZO POST-SECONDARY was the first school to ... introduce entrepreneurship and collaborate with private entities offering employment and training using EU funds.

In 2028, GOZO POST-SECONDARY is unique among all other schools because ... of its high rate of success - students achieve good results for tertiary education.

In 2028, GOZO POST-SECONDARY is truly great among all other schools because ...

- It is a school that caters for various disciplines.
- It has a great past from which it has learned to project itself into the future.

In 2028, GOZO POST-SECONDARY is a leader among all other schools because ...

- All its teachers are themselves convinced learners.
- All its teachers are themselves catalysts of change.
- It will be the key institution leading to further education and life-long education.

In 2028, GOZO POST-SECONDARY is the first school to ... prepare students to adjust themselves to cultural changes.

2. MCAST - Strategic Foresight Workshop

Exercise: 'Superlatives' Sentence Completion

In 2028, MCAST produced a breakthrough when it ... inaugurated its state-of-the-art campus catering for new frontier areas of vocational expertise.

In 2028, MCAST is a futuristic school because ...

- It has several institutes abroad and an international student profile.

In 2028, MCAST is truly remarkable among all other schools because ... it is everywhere, anytime.

In 2028, MCAST is historic among all other schools because ...

- It will self-fund all its educational programs and related resources.
- It was the first school to offer a chance to students who were drop outs at secondary education and to offer courses that were totally new to Malta.

In 2028, MCAST is famous among all other schools because ... it will be leading in creating career opportunities rather than satisfying existing and emerging industry requirements.

In 2028, MCAST was the first school to ...

- Utilise nuclear energy to generate its own technological systems - next step, send a student to Mars!
- Perform the retraining of all workforce.

In 2028, MCAST is special among all other schools because ... it is the foremost, leading VET College in all Europe due to its responsiveness to many educational, social, and cultural changes, all of which make it a place which students - youngsters and adults - cannot do without.

People who in 2028 visit MCAST say "WOW!" because ...

- MCAST graduates are reaching excellence while keeping the social intelligence aspect as the core of the curriculum.
- It is providing to thousands of students the best standards of education and courses relevant to economic needs in a state-of-the-art campus

In 2028, MCAST is unique among all other schools because ... it is able to accommodate all students with learning difficulties and disabilities.

In 2028, MCAST is truly remarkable among all other schools because ... of the positive perception of the students, the public, and industry in Malta's goal of becoming a centre of excellence in the Mediterranean region.

In 2028, MCAST is truly great among all other schools because ... it endeavours to cater for the needs of industry and the economy.

In 2028, MCAST is special among all other schools because ... its programmes of study are a guarantee to the individual student's future.

3. Student Councils and Organisations - Strategic Foresight Workshop

The Mini-Vision developed by students identified the following significant changes required in the higher education sector in Malta:

Introduce more hands-on learning

- In 6th forms and Universities, students should be given more time to experience new things, such as hands-on experience, rather than studying and lectures only, because it's the practice and experience that count. More hands-on experience both for self-development, quality, and employability.
- A change in the syllabus, by a decrease in syllabus content, and an increase in voluntary and practical work of what one is studying.
- To bridge the gap between the school bench and future work through a revision of curriculum and on-site / specific training.
- To teach entrepreneurship in University courses, eg: Pharmacy, Law, BA, etc.
- Integrated work placements during university courses.

Introduce alternative education

- A change in the curriculum to include necessary skills that are conducive to character formation and development - so that students will not [merely] accept jobs but CREATE them.
- New courses for holistic education to learn skills such as reporting, analysing, and other soft skills
- Development and sustainability of VALUES in society for the grassroots of tomorrow's society.
- A more social conscience for developing the student as a fulfilled being / person
- Not only academic subjects are important. Post-secondary schools for arts such as dancing, singing, acting, etc. should be opened. Courses to prepare for change and advancements, for example cybernetics, and spread awareness for a better future - including performing arts.
- Additional extracurricular courses (not compulsory) to provide general knowledge, better preparation for future jobs and to make important lifetime decisions. (If already available, improving awareness of such courses should be considered.)

Communication platforms

- Need to improve use and availability of internet and e-learning in the curriculum.
- Students should have a platform for commenting without the fear of being penalised.

Revision and updating of curricula

- Revision of curriculum (recognition of informal education). A change in the syllabus to an up-to-date one. Removing invalid information from the syllabus to be studied, giving students more time to focus on important topics, e.g, physics or geography.
- The systems of knowledge course needs to be revised. It should be modular, with students choosing areas they want to study. Systems of knowledge should NOT be a compulsory subject; this is NOT a requirement for entry in university.

- Career and work possibilities that can be offered after post-secondary / university courses. Course options are often too stylized.
- Flexible and competence-based curriculum design.

More university course options and opportunities

- More variety of course options at university
- Specialisation in topics, for example specialisation in surgeries, cybernetics, etc.
- More gap year and overseas opportunities for higher education institute students, thus making it easier to travel and learn / experience new things.

Improving Quality Assurance

- QA and recognition structures that involve teachers, employers, students, and social partners should be improved. Internal efficiency, quality assurance, and revision of curriculum. Strengthening national quality assurance agencies through increased funding and legal authority.
- allowing stakeholders an opportunity to form or revise and voice openly their opinions;
- jointly reviewing current pathways emerging from past decisions and actions and ways of escaping future lock-ins;
- prioritising key challenges and next steps for joint action.

CONCLUSION & POLICY IMPLICATIONS/IMPACTS

The main conclusions to be drawn from the exercise is that in a fast-evolving sector of higher and further education, representing a range of diverse interests and needs, it is the stakeholders who are best placed to advise on and support the development of long-term strategies. The insights and lessons learnt from these workshops highlight the fact that foresight exercises are vital tools to support the strategy development process for the following reasons, by :

- allowing stakeholders an opportunity to form or revise and voice openly their opinions;
- jointly reviewing current pathways emerging from past decisions and actions and ways of escaping future lock-ins;
- prioritising key challenges and next steps for joint action.

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Case Study 7: The Loimaa Futures Club

South West Finland

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Regional Actor / Organisation: Loimaa Region Development Centre - Pauli Salminen pauli.salminen@loimaanseutu.fi

Futurreg Partner: Turku School of Economics/Finland Futures Research Centre

Type: Futures in Places – a futures exercise undertaken with a territorial/spatial focus

Duration: 1/2006 – 2/2007

Budget: €62,000

Time Horizon: 2017

PURPOSE

The Futures Club is an innovative futures tool especially designed for developing the economic life of the region. At the same time it is a practical Foresight process and a cooperative network of various regional actors. The purpose of the application was to define the central driving forces faced by the region, formulate the preferred future for the region and choose and define important issues and actions to be done in order to attain the desirable future actors want to happen and formulate draft ideas of future projects.

CONTEXT & CHALLENGES

There was a clear need for a futures approach and policy: a special situation in the region after the merger of two municipalities, inner tensions in the region (one sub-region heading for Turku area), the location of the region between two bigger cities (Turku and Tampere), the interface of urban and rural forms of living, the Finnish Agricultural Museum Sarka, a new centre of expertise started operating in the region.

OBJECTIVES

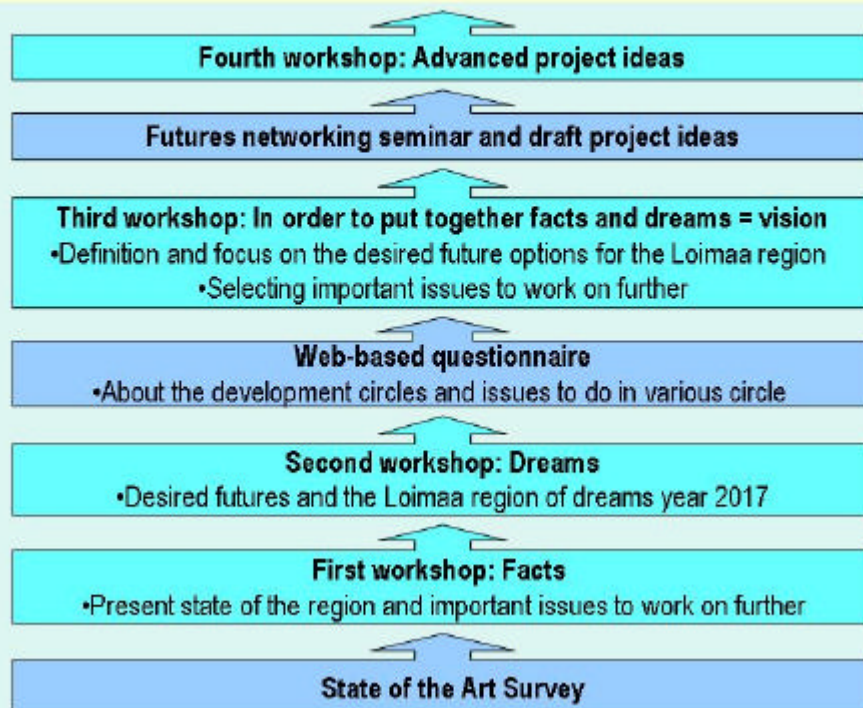
By applying a practical Foresight process together with a cooperative network of various regional actors, develop the economic life of Loimaa region to become economically strong, individual, internationally oriented and a forward looking region.

METHODOLOGY/APPROACH

The Futures Club creates visionary leadership and governance by exploiting multiple futures research methods and practices like Foresight (forecasting and backcasting), futures images, scenario building, futures workshops, seminars and questionnaires. The Futures Club was organized by the Finland Futures Research Centre together with Loimaa Regional Development Centre, the Finnish Agricultural Museum Sarka and Turku University of Applied Sciences (Loimaa office). Participants/stakeholders were:

- Universities and public research bodies
- Interface bodies (Regional developers)
- Technology centres
- Business (Entrepreneurs and Business people)
- Public Administration (Municipal officials and Representatives of educational institutes)
- Non-profit organization (Registered Associations)
- Congregation

The Loimaa Futures Club - Process Outline



CONTENT AND FINDINGS

Identified socio-economic or cultural trends/trend breaks:

- Aging population in the region - Loimaa region is becoming a reservation of old people. The workforce is also retiring. The question follows: How can the region maintain welfare services?
- An Urbanising World - Well educated young people move out to towns and city areas. Another crucial question is how to attract a highly educated workforce and their families to move into the Loimaa region.
- Lifelong and lifewide learning - A challenge for the educational system in the Loimaa region.

The set of technological and sectoral trends/trend breaks that are anticipated in the exercise:

- *The Service sector is growing in the region (welfare, leisure and freetime, KIBS)
- *Sustainability in energy production -biofuel plants and other renewable local energy (peat, straw, industrial and farm waste) is now an acute question for the region.
- *An "Antitrend" of trendTechnology diffusion - the basic and wide spread metal industry in Loimaa region is getting old (entrepreneurs and technology). There is an acute need for renewal of the whole industry.

Opportunities and challenges that might arise from the trends/trend breaks:

- Keeping rural areas alive – the Loimaa region has the potential to develop entrepreneurship in the region (new forms of rural entrepreneurship assisted of the know-how of traditional and developing new farming, the Finnish Agricultural Museum Sarka, a vital local business life and regional developers).
- Low investment rate in R&D at the moment
- Natural environment and housing provides potential for activating the region (tourism, nurturing business, peaceful housing etc.).

CONCLUSION & POLICY IMPLICATIONS/IMPACT

1. Key issues raised with particular relevance for policy-making were:

- a) Exploitation of the regional location
- b) Regional working life based education, training and development
- c) Regional attraction power
- d) Quality of habitation, services and environment
- e) Cultural supply and events in region
- f) Regional atmosphere and spirit related to development actions
- g) Financing and funding research and development in region
- h) Producing bioenergy in region
- i) Durable development in agriculture and farming – new farming

2. The solutions and/or adaptations that will be required to tackle challenges and benefit from opportunities:

- Keep up constant and open dialogue with public and private sector.
- Networking actors to work with and spread common understanding of vital questions.
- More specialisation in every field (get rid off overlap and bureaucracy)
- Do something (even small things, projects) together

3. Identified priorities and focus for action

- All items in question 1. (this section), especially b, c, e and g.
- Identified critical factors and key players in shaping the future are
- Universities and public research bodies
- Interface bodies (Regional developers)
- Business (Entrepreneurs and Business people)
- Public Administration (Municipal officials and Representatives of educational institutes)

SOURCES & REFERENCES

Finland Futures Research Centre - www.tukkk.fi/tutu/

Loimaa Futures Club <http://www.tulevaisuuskubi.fi/?id=928E1AB1-709F4EA7A8F3-42A1825F1F8B>

Case Study 8: A New Strategic Plan for the Sligo Institute of Technology

Borders, Midland & Western Region, Ireland

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Futurreg Partner: Border, Midlands and Western Regional Assembly

Type: A strategic futures exercise designed to help produce a new strategic plan for the Institute of Technology in Sligo.

Duration: 18 months 2005-2006 **Budget:** c. €25,000 **Time Horizon:** 2016

PURPOSE

Given uncertainties in the funding mechanisms, changing demographics, and concerns with traditional rational planning approaches *inter alia*, any HEI must give careful consideration to the process adopted in the preparation of a new strategic plan. In preparation for the discussion on the approach to be adopted in IT Sligo, three options were prepared for consideration including a traditional, rational approach, an approach that envisaged full use of Foresight methodologies and a modified Foresight approach. The Governing Body of the Institute, following consultation with staff, trades unions and Academic Council and on the formal advice of the Academic Council, agreed to a modified Foresight approach in which future possible scenarios (based on a fifteen to twenty year time horizon) would be developed, a decision taken as to the most likely scenario and then a traditional plan (specific objectives with targets, etc) built to meet the scenario. It was felt that this approach would more easily 'engage the academic heartland' and get institutional 'buy in' to the process.

CONTEXT & CHALLENGES

Central to the Foresight exercise was establishing a Steering Committee that was representative of the stakeholders across the institute. Each of the following groupings was asked to nominate representatives to sit on the steering group:

- Partnership Committee (Trade Unions)
- Senior Management Team
- Executive Committee
- Academic Council
- Student Union
- Local Employers (External Stakeholders)

This consisted of twelve members and was chaired by a member of the Executive Committee but deliberately not by the Institute's Director. It was of vital importance that the meetings were facilitated, and every meeting of the steering committee (and later meetings of sub-committees) used a skilled facilitator. This was essential to ensure that innovation and creativity were maximised; an absolutely essential aspect of the Foresight approach. The first meeting was used as a briefing session. A member of the

executive of a Government agency, the Border, Midlands and West (BMW) Regional Assembly, was invited to outline the process and experience of taking part in Foresight planning; the strategic vision for the BMW Region (2005) had recently been published and the methods used demonstrated good practice of Foresight planning.

THEMES

A key element of Foresight planning is to identify themes that are core components of influence on the Institute. The process of theme development, through the facilitator, used various well known techniques (brainstorming, etc.) to identify five key themes. These were:

- Scholarship
- External Environment
- Internal Organisation
- The Student
- Institute Identity

The second aspect of this stage of the planning process was to identify named individuals who would chair each of the subgroups. These individuals were approached and asked to form a sub-group that, over the course of three or four facilitated meetings would report back in writing to the steering committee. The terms of reference for each sub group included a specific requirement to take a long term perspective, to use creative thinking techniques and, finally, to propose a limited number of specific objectives for inclusion in a final plan. The last theme on Institute identity was retained by the steering group but for the other themes the chair was invited to sit on the steering group and was thus able to give interim oral updates on progress. The remaining meetings of the steering group became dual purpose; firstly facilitating sub-group feedback and secondly dealing with the issue of Institute identity. This eventually filtered into the final plan as objectives relating to marketing, identity and branding.

SCENARIO BUILDING

In order to work within the extended timeframe of Foresight planning it was necessary to build future scenarios. The external environment sub group undertook the role of scenario building. The process was driven by trying to answer the question 'who will be the users of IT Sligo in 2016?'. There were considered to be two overarching factors, the Irish (and by implication the World) economy and the level of independence and autonomy given to IT Sligo during the restructuring of Irish Higher Education noted above. This gave four possible scenarios. The scenarios were written as drama pieces and acted by members of the faculty. The four characters, typifying the scenarios, ('Sad Paddy', 'Independent Ingrid', 'Mick-Hail 24/7', 'Disillusioned Deirdre') were developed by four breakout teams from the external environmental group. These characters were presented back to the full group in the form of a story board depicting each of the characters. The facilitator took these and worked them up into the written versions of the scenarios that were intended to reflect a perspective of the life and times of each character. Although there were no specific forecasts developed for each of these characters, the description of the 'students' and the written scenarios were useful in helping to envision the future. Each of the groups was heavily facilitated and all the groups used a wide range of facilitation techniques designed to allow creative thinking including, brain storming, brain writing, mind mapping, use of 'what if?', 'if only' and 'why not?' sessions and mood mapping.

CONTENT & FINDINGS

The main 'product' of the exercise was a new strategic plan that incorporated a revised mission and a new vision and set of values for the Institute.

CONCLUSION & POLICY IMPLICATIONS/IMPACT

In order to obtain feedback on the experience of those who took part in the process and, thus to gain organisational learning, a survey was undertaken of the people involved in the project. The survey included both a 'tick box' element, and the opportunity to comment textually on the questions asked. Of the c.100 people who took part in the various groups 50 responded to the survey.

In relation to usefulness and appropriateness of the approach the responses to questions on these aspects show that 76% of the respondents thought the approach was satisfactory or very satisfactory and 96% of respondents thought the approach was appropriate, very appropriate or essential for the Institute. The ability to participate was also high (59%) noting they were able to participate fully compared to 41% who felt they were not. In terms of the final report 86% of the respondents felt that the report reflected moderately or well their input.

Whilst these results are encouraging the textual responses provided additional information and, in particular highlighted, *inter alia*, the need for better preparation for participants before embarking on this approach to strategic planning, a longer time frame to allow the process to take place and a more formalised approach to translating the results into the final plan.

Anecdotally, the development of the characters appears to have enabled better visualisation of the potential life of a student and thus a more 'human' envisioning of the future through the character. It was also apparent that this approach was more enjoyable than SWOT analysis.

Whilst this evaluation has provided some evidence that the approach was a positive and inclusive way to develop a strategic plan the results cannot be benchmarked against other processes for developing a strategic plan. In this regard, one of the authors (Thorn) as part of a larger team, has received funding to undertake a study of the effectiveness of different strategic planning approaches and the results of this study will be included in the larger investigation.

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10. LIST OF FUTURREG PARTNERS & CONTRIBUTORS

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