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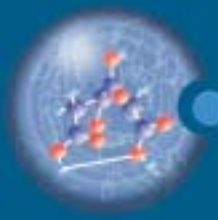
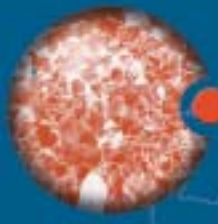
FOR-RIS

UPGRADE



TECHTRANS



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AGRIBLUE

Foresight and the Transition to Regional Knowledge-based Economies

Synthesis report

BLUEPRINTS FOR FORESIGHT ACTIONS IN THE REGIONS

FINAL REPORT

OCTOBER 2004

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Foresight and the Transition to Regional Knowledge-based Economies

Synthesis report of the expert group

"Blueprints for Foresight Actions in the Regions"

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October 2004

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Luxembourg: Office for Official Publications of the European Communities, 2004

ISBN 92-894-8274-5

Printed in Belgium

PRINTED ON WHITE CHLORINE-FREE PAPER

Blueprints for Foresight Actions in the Regions expert group

To develop their potential, and find their new role in the emerging EU25+ knowledge-based economy, regions need to widen their focus and go beyond their own innovation landscape to explore the European and trans-regional dimension to the full. Foresight is a key element in the creation of future oriented and outward looking visions and strategies. Many regions considering implementing foresight exercises need help to overcome initial barriers, such as doubts about the usefulness and usability of foresight, problems linking foresight to existing regional mechanisms, as well as simply lack of knowledge on how to set up and undertake foresight activities. Easy to understand practical blueprints on how to set up a foresight activities to suit specific regional circumstances could be instrumental in supporting regions to implement regional foresight.

The "Blueprint for Foresight Actions in the Regions" expert group was set up to stimulate the use of foresight in the regions, The expert group was built around a core group of experts on foresight processes, who steered five working groups with regional partners, chosen because of their capacity to initiate actions and influence policymaking. The resulting blueprints have been designed so as to provide useful tools for regions not actively participating in the expert group, but facing the same challenges:

FOR-RIS:	Experiences and ideas for developing regional foresight in a RIS/RITTS project context;
UPGRADE:	Foresight strategy and actions to assist regions of traditional industry towards a more knowledge based community;
TECHTRANS:	Trans-regional integration and harmonisation of technology support mechanisms;
TRANSVISION:	Bridging historically and culturally close neighbouring regions separated by national borders;
AGRIBLUE:	Sustainable Territorial Development of the Rural Areas of Europe.

The present report provides the background and main conclusions of the work of the expert group. It also provides information directly relevant to the regions on recent EU policy developments, external trends influencing their future strategic options, and the need to engage in foresight.

Contents

Executive summary

This synthesis report presents an overview of the conceptual context of the "Blueprints for Foresight Actions in the Regions" expert group, the rapidly changing environment in which regions are operating and the benefits that a foresight initiative can bring to regions, in helping them to meet emerging challenges and make the transition to more competitive and innovative knowledge based economies.

As further detailed in chapter 1 of the report, foresight is a very powerful process in getting regions to address those challenges. Chapters 2 & 3 respectively, outline the main external drivers of change in particular Global Issues and EU Policy Developments that are increasingly impacting on regions. An overview on how regional foresight exercises should be planned for and conducted and their usefulness is given in chapter 4. The need for different foresight approaches, designed to meet the specific needs of regions facing markedly different circumstances, is outlined in chapter 5, as well as the lessons learned in undertaking the Blueprints expert group.

1. Scope and Focus of the Blueprints

With the objective of ensuring the long-term competitiveness of Europe's diverse regions, by building more knowledge based regional economies and innovative regions, a complementary set of five Regional Foresight Blueprints has been produced, documenting the sequence of practical steps on how to set-up and undertake foresight initiatives, in each of the following regional circumstances:

1.1 Regions that have already formulated, or are in the process of formulating a regional innovation strategy, i.e., RIS/RITTS[1] projects (the FOR-RIS blueprint).

1.2 Regions formerly dominated by traditional heavy industries and that need to and often have begun to re-position their economies (the UPGRADE blueprint).

1.3 Regions with well developed economies and support structures that could become global players by developing trans-regional innovation support systems (the TECHTRANS blueprint).

1.4 Historically and culturally close neighbouring regions Separated by national borders (the TRANSVISION blueprint).

1.5 Rural regions in transition from economies largely based on agriculture, fishery and forestry and associated traditional low value added processing industries (the AGRILUE blueprint).

2. Conclusions and Outcomes of the Blueprints

2.1 The Blueprint expert group has demonstrated conclusively how foresight processes can establish Mutual Learning Platforms. The two key ingredients are enthusiastic practitioners with diverse backgrounds and the urgent need to engage in joint action. How powerful this combination is could be observed on two levels:

- Working Groups Level: Participants who at the outset were uncertain about the conceptual basis of the project and the role of regions in developing longer-term strategic horizons, by the final meetings of working groups were deliberating seminal questions in relation to the importance of regional innovation systems, in building long-term competitiveness

- Regional Level: In many regions (particularly but not only the reference regions), foresight processes have been initiated. The foresight

1. RIS (Regional Innovation Strategies) and RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructure) projects aim at supporting regions in developing their innovation strategies.
See http://www.innovating-regions.org/network/presentation/regional.cfm for more information

approach helped to bring together stakeholders from different fields and disciplines to overcome conflicting issues. The foundation for a European Mutual Learning Platform has been established that will grow far beyond the end of this project and needs to be built upon.

2.2 Arising from the Mutual Learning impact of the process, the expert group has been instrumental in bringing about the following three outcomes, which have important benefits at regional, national and EU levels:

- Establishing new pan-European networks of knowledgeable and influential stakeholders and decision-makers;
- Developing Foresight Champions throughout the diverse regions of EU-25;
- Bringing about greater appreciation of the importance of Foresight in upgrading traditional economies and industrial sectors by harnessing the benefits of both bottom-up and top-down planning.

2.3 The **FOR-RIS** Blueprint outlines how to combine the more short term regional innovation strategies (RIS/RITTS[2]) initiatives with the more long-term time perspective of foresight initiatives. It formulates new alternatives of regional development and also the development of regional innovation systems. Key questions are considered in relation to the planning, operations and implementation of a foresight exercise, in the context of the development of regional innovation systems.

Lower Austria and the South West Region of Bulgaria functioned as reference regions. Practical activities which combine RIS and foresight have been started in these regions

2.4 The **UPGRADE** blueprint concerns regions formerly dominated by traditional heavy industries that need - and often have begun - to re-position their economies. It provides the essential elements that need to be addressed in the planning, management and implementation of a foresight exercise designed to create a learning region. It is a compendium of advice, examples of good practice and hands on tips from practitioners.

The State of Mecklenburg-Western Pomerania has served as reference region. A foresight process on preventive medicine has been started as a result of the blueprints projects.

2.5 The **TECHTRANS** blueprint is focussed on improving technology transfer in general and on methodologies how to raise awareness for intensified trans-regional technology transfer in particular, and is directed at regions characterised by strong science and technology bases as well as professional regional innovation systems. The group has developed tools and a concrete plan for a foresight-process dealing with trans-regional technology-transfer.

Due to the trans-regional network focus, no specific reference region was chosen. However, in the Valencia Region, a large Foresight exercise has been conducted on the occasion of the mid-term review of the multi-annual Regional Plan for RTD & Innovation (2002-2006). The region would like this foresight action to also identify trans-regional opportunities.

2.6 The **TRANSVISION** blueprint provides a practical framework designed to build cross-regional strategic visions and guide decision making in neighbouring regions separated by national borders. It comprises two main elements: firstly, the rational for a transborder foresight initiative and secondly, the methodology framework for conducting such an exercise. Key questions in relation to both of these dimensions are considered and the ten important lessons learned in the elaboration of the Blueprint are detailed..

The TRANSVISION Working Group was comprised of two reference sub-groups, the so-called "Large Region" comprising Luxembourg, Saarland, Rheinland-Pfalz, Lorraine and Wallonia, and the so-called South East Europe Foresight Triangle (SEEForesighT) comprising the South Great Plain of Hungary, Vojvodina of Serbia and the West Region of Romania.

2. RIS (Regional Innovation Strategies) and RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructure) projects aim at supporting regions in developing their innovation strategies.
See http://www.innovating-regions.org/network/presentation/regional.cfm for more information

2.7 The rural regions of Europe will undergo radical change over the next two decades. Successful rural areas will achieve a sustainable balance between economic, social and environmental aspects of development on the basis of a fully diversified knowledge based rural economy that includes knowledge intensive multi-functional agricultural production. The **AGRIBLUE** blueprint considers the role of regional foresight in addressing the governance challenge that arises in reaching this goal. In particular it considers kind of innovation infrastructure is required to support the sustainable development of fully diversified knowledge based rural economies.

The conclusions of Agriblue are supported by expert input, anecdotes and data from the BMW Regional Assembly of Ireland, from Wales and Scotland in the UK, the region of Weser Ems in Germany, South Savo in Finland, Brittany in France, the Lubelski and Malopoloskie regions of Poland as well as the experiences from the Hungarian National Foresight initiative.

3. Recommendations from the Blueprints Expert Group

3.1 To consolidate the networks developed during the Blueprint project, consideration should be given to different approaches to strengthening - or where necessary creating - knowledge sharing platforms for the continuous exchange of information and experiences between foresight initiatives and practitioners throughout the enlarged EU. Possible actions comprise the further development of the Mutual Learning Platform and the initiation (and possibly fostering) of an association of foresight regions respectively Foresight Laboratories.

3.2 Regions willing and capable to perform a foresight exercise, prepared to invest their own financial means and open to trans-regional cooperation should be financially supported. As with the RITTS/RIS projects, a first round of pilot projects could be run with the reference regions of the blueprint project. Such a programme would be beneficial in integrating foresight studies into policies and strategy planning. The participative process involved would provide regional decision-makers and stakeholders with the opportunity to contribute more effectively to the development of regional research and innovation systems and would also help to harness attainable economic goals. Regional foresight studies would be especially beneficial to the new EU countries, in developing demand-driven knowledge-based regional initiatives.

3.3 Successful foresight initiatives require good preparation. Programmes that provide support for foresight initiatives or accommodate foresight initiatives as part of a larger action should provide adequate support for preparatory phase work. Such work includes rigorous stakeholder analysis as well as activities intended to establish a region-specific evidence base for dialogue and policy oriented recommendations

3.4 To optimise the contribution to the long term competitiveness of the EU by developing sustainable knowledge based regional economies, Foresight must become an integral part of the support actions of the different EU General Directorates (as well as the different ministries on national and regional level) concerned with policy formation and the development of regional innovation systems.

3.5 It is particularly important that the systems devised by the EU for the next phase of Structural Funds operations (2007-2013) allows for the use of foresight by regions wishing to design and implement innovation strategies on the basis of wide participative processes. It is worth mentioning that in the Commission's proposals for the new Structural Funds regulations it is foreseen that operational programmes under the 'convergence' and 'regional competitiveness and employment' objectives shall contain actions

for adapting the regional economies, in a preventive manner, to the changes of the European and international economic environment. It is also foreseen that at the initiative of the Member State, for each operational programme, the Funds may finance preparatory, management, monitoring, evaluation, information and control activities and activities to reinforce the administrative capacity for implementing the Funds. In the 'Community strategic guidelines on cohesion' and the new strategic national reference frameworks, provision should therefore be made explicitly for foresight and other capacity building activities.

3.6 In relation to EU Framework Programmes and also national and regional programmes aimed at preparing regions to enter the knowledge-based economy, the concept of including an obligatory foresight element in major funding instruments should be considered. It would be beneficial in contributing to the competitiveness and social cohesion of European regions.

3.7 To harness the power of foresight in building long-term strategic capabilities, priority needs to be given to embedding foresight into all levels of education, starting with university post-graduate programmes. At secondary school level opportunities exist for the introduction of foresight activities for example as a part of the 'gap year' activities common in Ireland and the UK.

3.8 It is necessary to define and implement measures aimed at stimulating a good governance culture. Foresight is a means of improving regional governance but which demands a certain openness which some administrations – particularly in the New Member States formerly used to central planning – are missing.

3.9 Foresight methodologies in general and the techniques for evaluating the impact of foresight in particular have to be further refined.

3.10 To capitalise on the contribution of foresight to longer-term strategic planning including policy formation and the development of new forms of governance, Foresight needs to be a continuous process. Depending on the regional/national situation this would be best achieved by either establishing a Foresight Centre or a Foresight Consortium of competent agencies.

1. The regional context – why the need for foresight

As noted by the sociologist Daniel Bell, "the nation state is becoming too small for the big problems of life, and too big for the small problems of life" hence, a fortiori, the slogan "think globally, act locally". But with the mounting importance of the regional level in economic, social and cultural life, the phrase can be turned around to become "think locally, act globally".

1.1 The increasing role of the region

We are witnessing the simultaneous phenomena of globalisation and revival of local focus, with the economy organising itself within a planetary network logic, which is increasingly disconnected from the territorial logic of the national framework. Once this network logic establishes itself, tight-knit networks (clusters) establish themselves. Scientific and technical centres of excellence are set up at infra-national level; in regions, districts and metropolitan areas. These operate as drivers in the development of the knowledge economy.

Inequalities between territories are increasing throughout the world, including Europe. Unemployment rates in some regions are three times that of others, and performances vary considerably from one territory to another.

The natural propensity of territories in decline is to attribute their problems to the external context. They look for scapegoats like oil prices, globalisation and fierce competition from the rapidly developing countries to which their businesses are relocating, and they often come to expect a divine solution from outside, such as the return of a more favourable economic situation, national and European aid grants, the installation of a high-speed train station, etc. Unfortunately it has to be recognised that high-speed train stations have been built in open country without resulting instantly in the birth of a cluster.

Conversely, within the same economic situation – other territories are experiencing impressive development. Those territories have taken their future in hand. They have succeeded in uniting the stakeholders and decision makers in the region around a shared vision and project.

According to Bodin, the human resource is the only true resource. This is especially true where, as part of the knowledge economy, the real challenge is the mobilisation of the intelligence (in the widest sense of the term) of all the players in the territory.

Contrary to a very widespread notion, flexibility and adaptability are not enough. The performance of territories, like that of businesses, depends essentially on their capacity to mobilise all their energies around a long-term project which gives meaning and coherence to short-term action and mobilises the players around a common vision.

Visionary leaders who can impose a mobilising project from above - often at the price of a questionable authoritarianism - are rare and may be potentially dangerous. It is more desirable to have a process of collective reflection and consultation, a process which, because it involves a participatory dimension, makes it possible not only to develop a strategy, but also to ensure the indispensable ownership of the project by the undertaking concerned.

The true *raison d'être* of regional (or territorial) foresight is **to make the inhabitants of a territory the architects of their chosen collective future rather than the passive victims of an imposed future.**

The Competitiveness of European regions

The competitiveness of European regions is dependent on the professionalism of its innovation systems. Effective and efficient regional innovation systems are characterised by:

- Need-orientation (addressing companies' demands and latent needs),
- Sustainability (strategic adequacy over a time-period of ca 20 years),
- Transparency (knowledge of system participants and system-external players about the strategy, the resources, the competences, the needs of the system),
- System approach (connectivity of players, exploitation of synergy potentials, achieving high integral quality, cross-disciplinary and cross-sectoral work),
- Critical mass (dedication of sufficient resources to strategic issues).

A substantial amount of programmes have been run in order to support the further development of regional innovation systems to fulfil the criteria cited above. However, many of these approaches have only had limited success, mainly because:

- the time horizon for regional development strategies is often too short, typically the next structural funds period;
- the regional innovation strategy is not fully implemented due to lack of commitment from key players. As regional development cannot be hierarchically ordered and implemented, it is of crucial importance that the key organisations agree on the main development lines and co-ordinate their actions.

Foresight is an approach which addresses all five success determinants discussed above: integrates key players from the three triple helix dimensions (policy/administration, research/education and business/industry) and thus helps to assure that the regional key players take an active part in developing a regional strategy and act as champions for specific themes (e.g. specific materials, technologies, value chains or sub regions) that they are particularly interested in and that are complementary to the overall approach).

1.2 Why foresight In the region

"When it is urgent, it is already too late"
[Talleyrand].

As the pace of change increases, decision-makers wade through files marked 'for immediate action', classified by the degree of urgency involved. Consequently, only when a problem becomes urgent does it receive attention. As a result, most decision-makers have little room for manoeuvre.

Executives often justify their decisions by saying that they had **no** choice but to act. The truth is that they **no longer** had a choice because they allowed the situation to get out of hand. Necessity is nothing more than a lack of foresight. To avoid this bind is to become aware of situations as they are taking shape and may still be moulded, rather than after they have already become a limitation. Without anticipation there can be no freedom in making a decision.

Fast, and increasingly unpredictable, change has led to the rise of theories like **reactivity**, in other words, 'if we cannot see ahead very well, let's be adaptable'. Although attractive, instant adaptability is an enormous illusion for regions which are in charge of roads, schools, hospitals… The long-term is the only horizon line possible for real in-depth action to take place that involves new infrastructures, training or different ways of thinking and behaving. In practical terms, a horizon line of a few months, or even three to five years, leaves very little room for manoeuvre.

A navigator:

- strives to gauge the wind, the reefs, the course of other nearby ships so as to anticipate his strategic environment; we may, in this instance, talk about **monitoring** instruments, **anticipation and exploratory scenarios.**
- acts appropriately, given the strengths and weaknesses of crew and craft, so that the vessel arrives safely to shore. Reaching port is the navigator's **project**. As such, it is a project that requires **planning**, or even **programming** and a **strategy** to be implemented using instruments for **steering**.

Anticipation and action imply a permanent dialectic that relies upon two different, yet complementary, kinds of logic that can be summed up as two questions: **What can happen? What can I do?**

The future of a region depends on:
- its national, European and global environment, as much as the external drivers (major trends and uncertainties), which have a particular impact on the region;
- its own dynamic resulting from internal drivers, shaping actors and factors;
- the conflicting strategies of the different actors having an impact on the region.

One cannot achieve a foresight on a region as if it evolutes in a vacuum ("in vitro") and without taking into account its long term specific dynamic. A foresight exercise should serve to identify the major external, or global, trends and uncertainties which may have an impact on the region. As the region has little power, to influence these trends and uncertainties, it must try to anticipate them and explore their local impacts.

In relation to the specific dynamic of the region, the **foresight exercise**:
- should serve to identify the long term spontaneous dynamic of the region (diagnostic) and its possible futures (anticipation);
- should serve also to promote a debate among the stake holders as to gradually elaborate a shared vision of a desirable future and create a consensus on how to achieve it, who should do what, when and how.

In other words, within a **regional foresight exercise**, we are attempting to:
- anticipate what may happen within a specific region according to long term external and internal factors;
- launch a process whereby the actors of the region may share, not only a common representation of the territory, its possible futures and the challenges which are ahead, but are also able to share also a common vision of a desirable future for the region (project) and hence may adopt – instead of conflicting strategies – a common strategy to achieve it.

Kieran Moylan of the BMW Regional Assembly in Ireland says that although Ireland is often seen as an economic success story, development in some rural regions of Ireland has lagged that of cities such as Dublin, Cork and Limerick. Bringing together all our stakeholders for a regional foresight exercise has helped us to realize for the first time our shared interest in shaping an agreed prioritized programme for strategic investment in the region.

Source: AGRIBLUE working group

Foresight contributes to improving the quality of governance by activating the stakeholders and citizens of a region. Experience shows that in many regions, the potential partners are either sleeping or wasting most of their energy on short term conflicts, in many cases on issues which are of little importance to the future of the region. Regional authorities have a key role to play in communicating policy related inputs to central government ministries and their agencies in the region. These inputs have greater credibility when they arise from an open process of deliberation involving regionally based stakeholders. Foresight favours interactions between decision makers, companies and civil society in order to build open futures and to share common visions. By widening the debate, foresight creates a renewed freedom of action and reinforces the confidence of the stakeholders. In public life, this range of possible futures gives meaning to democracy. In this way foresight can play an important role in addressing governance problems as they are experienced at regional level.

The South East Foresight Triangle (SeeForesightT) is located in one of the most promising future integration areas of the territory of the future Europe Union and comprises the three regions South Great Plain Region (Hungary), RDA West (Romania) and Vojvodina (Serbia). The key drivers for building a common vision in this hybrid area are the sharing of joint challenges (peace, sustainable development, economic exchanges, water, etc.), the common approach to specific threats and opportunities, and the ripeness and multiplication of links between the regions.

Source: TRANSVISION working group

1.3 Global drivers of change

The future of the region depends on:

- its own dynamic and the influence of key internal drivers (shaping factors and actors);
- its strategic environment (international, European, national) which itself has its own dynamic and will be influenced by some shaping factors and actors.

We should be careful not to assume that the future on a region depends only on its external environment. This is mainly the same for all regions in Europe, although the performance differs greatly from one region to another. However we should not underestimate the impact of external drivers on a region.

In following sections we will look at the major external drivers that may impact on the regions. It should be pointed out that this list is not exhaustive, and that the relevance of these drivers is not the same for all the regions and that their local impacts may differ from one region to another.

The impact of external drivers varies from a region to another

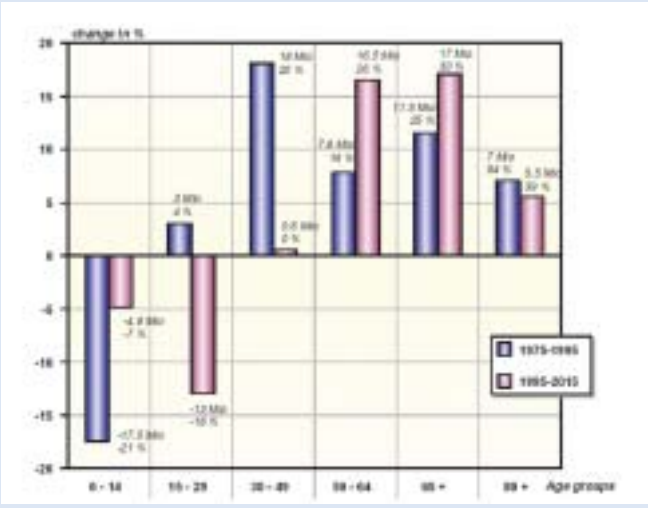
The future of Catalonia will be strongly impacted by the establishment of an Euro-Med cooperation whereas the future of the Liège Province will be less concerned; the future of le Havre — a major port especially for oil imports — will be strongly impacted by the future of the oil market and possibly the development of new energy sources whereas the future of Toulon — also a port — will depend more on the development of an European defence policy.

Ageing: social, economic and political impact

There were 62 millions people aged 65 and over in 2001 in the EU compared to only 34 million in 1960. Their share of the population has risen from 11% to 16%. The population aged 55-64 will grow substantially (around 20%) over the next fifteen years, with a rise of more than 40% in France, Ireland, Luxembourg and the Netherlands. Over the next fifteen years, the number of people aged 80 and over will also rise by almost 50% to over 20 million people EU-wide, of which 13 million will be women.

Whilst the population of working age (15 to 64) in the EU will fall in the next fifty years by some 40 million people, the number of elderly people aged 65 and over will increase by about the same number. As a result, the old-age dependency ratio will double from 24% in 2000 to 49% in 2050.

Demographic changes in the main age groups



Source: Eurostat

The EU is projected to move from having 4 to only 2 persons of working age (15-64) for every person 65 and above. An increasingly older population will create considerable pressures on pensions, health care, dampen economic growth, etc.

The world economy

Between 1950 and 1973, the world economic growth rate was close to 5 % by year (the so called «Glorious Thirties»). Since 1973, the growth rate has fluctuated, with slowdowns and recoveries of two or three years duration.

These global numbers hide huge disparities between areas of the world and countries: while growth in Europe is still under 2%, China is experiencing a 8%-9% growth.

World economic growth is now driven by Asia, which represents 38% of the world GDP (compared to 18% in 1950).

Economical growth forecasts are often short term and heavily influenced by the current economic situation. Forecast produced in 2000 (before the dot-coms bubble crash) were very optimistic.

Structural evolutions in modern economies

Long-term evolution of the production system is marked by a general phenomenon of tertiarisation, or dematerialization.

The first half of the 20th century was marked by a relative decline of the primary sector and a rise of the secondary (industry). We now observe a relative decline of the industrial sector while the tertiary sector continues to grow. There are two important indicators of this transformation, namely:

- distribution of employment between the three sectors,
- respective weight of each one of these sectors in gross domestic product.

This phenomena is mirrored by the rising role of intangible factors in the value of goods, and we can expect an irreversible process of tertiarisation for all production activities.

In the agro-food sector, intangible factors cover activities like research and development on the seeds, genetic progress on the plants and the animals, feeds, distribution, advertising, marketing, etc.

Similarly, the price of a car depends less on the raw material prices and the wages of people working this materials directly, but increasingly on the expenditure made by the manufacturer in research and development, engineering-design, logistics, advertisement, marketing, accounting, etc.

The same trend exists in traditional industries. For example, Saint-Gobain formerly sold unspecified glass, now this firm produces «smart» materials which incorporate distinct particular properties depending on whether the material is intended to make glazing of building, a safe windshield for a vehicle or to bottle drinks.

The more we evolve toward high technology industries, the more the share of intangibles increases. The price of a microprocessor is estimated to include as much as 95 % of intangible value.

Simultaneously, we witness a trend in industrialisation of commercial and non-commercial service activities. The consequence of these trends is that the principal sources of added value are moving from the ownership of raw materials or manufactured goods towards the capacity to produce ideas and concepts inherent in the goods.

The dematerialisation of production

The dematerialisation of production activities is accompanied by a shift from the industrial to the new economy.

Over the past twenty-five years, the production process and the monetary and financial process have been disconnected. The financial sector has become totally disconnected from the production field. In the early 1970s the global **daily** turnaround in foreign exchange markets amounted to $18 billion. Currently, the average daily movement of currency exchanges is $1.3 trillion, while the **annual** global trade in goods and services is a mere 4.3 trillion, according to the Bank for International Settlements.

We now have to cope now with a true planetary village of finance whose rules are radically different from those of "real" economy. The phenomenon is so striking that, while many firms still are classified manufacturing industry, they make the main part of their profits through financial management.

We are entering an economy that flows more efficiently, is much more volatile and which is now performing according to logic of networks at an international level. This international network logic is increasingly disconnected from territorial logic that remains the fundamental principle of national sovereignty (or European co-sovereignty). Thus, the phenomenon of globalisation is not an ideological choice but result from structural transformation of our economies. It gives rise to a considerable increase in trade, and the development of worldwide oligopolies and severe competition

The challenge of competitivity

This new paradigm and globalization are changing the rules of the economy. Firms are more and more international and competitiveness is a prerequisite for survival.

We are moving from a mass production to a production of «customised » goods, often with a high service content.

In the race to reach global competitiveness, activities with stagnant or declining productivity will tend to be abandoned, by private and public sector and increasingly passed on to the consumer, as seen in the decline of manpower in the banking and retail sectors.

The challenge of innovation

In the context of competition and knowledge-based economy, innovation has become more and more mandatory. Scientific and technological innovation is accelerating with the developments of information and communication technologies (ICTs), biotechnology and new materials.

These technologies are radically different from technologies of previous generations, in particular they are both generic and combinative. They enter our offices and factories, public spaces and our homes. It is important to stress that new technologies are spreading at the speed that human society embraces them. It should also be noted that innovation is a complex process involving a technological as well as a socio-cultural dimension. The dynamics of a firm or a territory can only be changed at the speed at which behaviour, organisations and management evolve.

Climate change

The earth surface temperature recorded in the 20th century is the highest of the past tenth centuries. During the last century a 0.6 °C earth warming was measured. Ocean levels increased by 10 to 25 cm and during the last 30 years the fastest temperature incresase was observed. The nineties have been the warmest decade of the century.

A considerable increase in greenhouse gas concentration in the atmosphere was measured in the 1970s, mainly attributed to fossil fuel-based carbon dioxide emissions since the 19th century. A growing awareness of a link between greenhouse gas emissions and warming led the international community to set a target for reducing greenhouse gas emissions, (the Kyoto Protocol).

Today, only the United States and Australia have clearly disregarded the agreement, its future is now bound to Russia's signature.

Experts forecast an increase of the average world temperature ranging from 1.4 to 5.8° C between now and 2100. The temperature increase in the 21st century would be 2 to 10 times higher than in the previous century, and the average sea level could rise by 9 to 90 cm between 1990 and 2100. According to the IPCC (Intergovernmental Panel on Climate Change), it is very likely (90 to 99% probabilities) that the global warming will cause extreme weather phenomenon involving longer and more intense heat waves, heavier and more variable precipitation over a year in medium latitudes. The magnitude and frequency of storms, cyclones and floods are expected to increase.

Climate change and water resource

Today 1.3 billion humans do not get enough drinking water. By 2025 this number could double because of the world demography growth if nothing is done. The climate change could amplify this phenomenon in areas like Central Asia, the Middle East, the Mediterranean surrounding and Australia. There is a risk of temporary or permanent floods or droughts. The salinity of estuaries will increase while the volume of ground water will decrease. Loss of land can be expected in coastal areas (The Netherlands: -6%, Bangladesh: -17%). The vulnerability of the coastal zones is especially important as they host 50 to 70% of the world population.

Climate change and agriculture

Agriculture would be most adversely affected by climate change, with lack of water threatening farming and parasite proliferation. The risks are very different from one region in the world to another. While increasing carbon dioxide concentration would favour agriculture yields, this advantage might be off-set by the disastrous influence of dryness. In average latitudes, one might expect positive effects of a moderate temperature warming. But in tropical areas the agriculture yield would decrease, even with moderate warming.

Water

Fresh water is a major challenge for food production. The removal of the salt from seawater is possible but requires energy. Water spoiled by pollution is a disease transmitter. The world water consumption doubled over the last 50 years. Today 1.3 billion people do not get enough drinking water, 2 other billions are deprived of sanitary equipment. Water consumption is unevenly distributed. On average, 1440 water litres par day are used by Australians, 617 by Americans, 210 by Europeans and 48 by Africans. Some countries rely heavily on foreign supply of water (Egypt, Netherlands, Cambodia, Syria...) and water might easily become a source of conflict.

Energy

Fossil fuels (coal, oil and natural gas) account for 80% of the world energy consumption and their use is the main cause of global warming. World primary energy consumption grew on average 2.1% per year over the last 30 years. Over 10 billion-tons oil equivalents of primary energy are consumed each year, 53% of these are consumed in the OCDE countries and 25% in the United States.

1.6 billion people, a quarter of the world population, has no access to electricity and 2.4 billion people rely on biofuels (wood, farm waste including crop and animal waste) to heat and cook. The use of wood (also intensive grazing) in already barren areas of poor countries, especially in Africa, increases ground dryness, desertification and decrease of agricultural yields. It leads to a vicious circle where ground sterility induces new deforestation to produce new fields. Each year a ground surface equivalent to the Belgium territory becomes a desert.

A growth of energy demand, especially in developing countries, seems unavoidable in the next 20 years. However, to constrain the greenhouse effect at a "reasonable" level (450 ppm), fossil fuel consumption must decrease as early as 2020.

All energy forecasts agree on the following three points:

- Conventional oil reserves will inexorably concentrate in the Middle East which holds 65% of the world proved reserves;
- The price of oil and natural gas will tend to increase in the next 20 years;
- Coal is the most abundant fossil energy for the next century.

In a 20 years time frame, the main uncertainties concern oil reserves and the world's willingness to use other energies than fossil fuels.

There is a variety of alternative energy sources (nuclear, biofuels, solar, wind, hydro or geothermal energy, coal associated with carbon dioxide capture and sequestration in empty oil and gas fields or in deep seawaters, etc) that may produce energy with almost no carbon dioxide emission. However, the potential contribution of most renewable energies for the next 20 years is limited due to the huge necessary investments and to the fact that the nat-

ural potential varies markedly from one region in the world to another.

Peace and conflicts issues

The world is characterised by the rise of multi-polar risks due to various factors and causes (ethnic, economic, religious). We are witnessing a simultaneous process of universalisation and fragmentation at global scale with:

- interdependencies generating a form of cultural homogeneity;
- the rise of local identity claims.

9/11 changed the social perception of terrorism, as is evident from the level of concern for an attack using mass destruction weapons in the United States. More and more conflicts take place in residential areas, and there is a growing interdependency between defence and homeland security issues, with:

- Growing needs for control and monitoring systems and technologies: biometry, scanning, sensors, and the whole "C4I": Command, Control, Communications, Computing and Intelligence. Capacity to control "flows" (human, data, finance,…) tends to be a central element of power;
- More and more involvement of private sector in security questions: Private Military Corporations or traditional defence contractors acting as Security and systems integration provider (and not only equipment);
- More and more security requirements in public equipment and buildings.

International institutions and procedures of regulation and control at world level are at best embryonic. We are witnessing the rise of the interdependencies without the means to manage them globally.

In this regard the position of China on regional and world scenes is a major influencing factor, as are its internal evolution and the sustainability of its economic growth in the medium/long term. The structuring of the Asian area depends largely on the capacity of China to regulate regional conflicts peacefully. The Sino-American relationship, which is becoming more and more structuring for the foreign policies of the two countries, can oscillate from trade partnership to open competition.

2. Main thrusts of EU policy developments – opportunities for Europe's regions

2.1 An overview of EU policy objectives

The European Commission has defined three key priorities for the enlarged European Union:

Sustainable development which is to be achieved by

- transforming the European Union into a dynamic knowledge-based economy geared towards growth;
- pursuing greater cohesion in the context of an enlarged Union;
- strengthening rural development and ensuring the competitiveness of the agri-food sector and the quality of the environment.

European Citizenship which is to be strengthened by

- ensuring that fundamental rights (freedom, security and justice) are actively promoted throughout the European Union (Constitutional Treaty);
- ensuring that European citizens live in adequate living conditions;
- fostering European culture and diversity as well as promoting intercultural dialogue.

Strengthening and positioning the *EU as a global player by*

- contributing to sustainability and stability at the world scale through global governance and bilateral relations;
- taking actions to ensure strategic and civilian security on a global level;
- increased co-operation with its neighbours.

Although all three priorities of EU policy are of high importance, the emphasis on sustainable development has the highest impact on Europe's regions and regional foresight processes. The two other objectives are more relevant on a national level and EU level. Therefore, this chapter is limited to presenting EU policies primarily aimed at fostering sustainable development. Particular emphasis is paid to EU research and innovation policy, EU rural development policy and EU regional policy. Other relevant policies which have less impact on regional foresight processes include transport policy and energy policy.

The Lisbon Agenda launched in 2000 and further developed in annual European Spring Councils outlines sustainable development as the transformation of the European Union into a dynamic knowledge-based economy which is characterised by entrepreneurship and competitiveness with continued commitment to sustainable use and management of resources and environment protection.

In order to achieve sustainable development throughout Europe, Europe's regions must be globally competitive. They must offer high quality of life and powerful framework conditions for growth in order to attract individuals as well as businesses and competence providers (e.g. Higher Educational Institutions). Also, they must be competitive in exploiting the potential of their region in terms of economic growth and creating more and better jobs.

There is lack of empirical evidence on which are the most important determinants of a region's competitiveness. However, there appears to be some consensus on a number of possible determinants.[3] These include:

- Motivation to compete
  In order to become competitive a region should dedicate its resources to competitiveness and not trust that subsidies (from the national level

3. There are several approaches which aim at modelling a.o. (inter-) dependences between investments and economic impact. The NEMESIS (New Econometric Model for Environment and Sustainable development Implementation Strategies) model is one such example. Drawing upon about 70.000 equations, NEMESIS is one of the most complex econometric models for EU-15 (plus Norway).

or the EU level) will continuously compensate for lacking competitiveness. In particular, a region must develop a strategy that aims at sustainable development: it must prioritise fields of high return on investments and stimulate growth rather than prolonging the dying process of uncompetitive industries. Increased profits lead to increased taxes and better investment opportunities for the public authority.

The European Commission fosters competitiveness by making the regions compete for financial means and prestige (e.g. excellence labels as awarded in the PAXIS framework). Whereas the European Commission was amongst the first to pursue this approach, today, many Member States have the policy: "In order to make regions competitive, one must make them compete."

- Capacity Building
  A region's competitiveness is substantially determined by its **competences and resources**. Obviously, some regions possess a higher richness of natural resources than others. However, as European regions mostly base their competitive edge on competence and less on natural advantages, it is crucial that regions possess a critical mass of competences and financial resources.[4] The European Commission fosters the building of critical mass by a variety of means:
  - fostering processes of defining larger regions provision by providing financial support to stimulate closer collaboration between neighbouring regions where this is particularly challenging (e.g. in border regions) or by defining a minimum size of regions for support eligibility;
  - fostering processes that aim at defining a sharply focused regional strategy, strengthening the regional profile and identity and communicating the profile;
  - supporting investments in key priority areas.
- Good Neighbourhood
  To be competitive regions must access complementary resources outside the region. Through a wide variety of different programmes, the European Commission stimulates the collaboration between different regions and between key players from different regions. Examples include:
  - measures aimed at increasing transparency of available competencies in Europe (e.g. mapping exercises, collection and analysis of data; dissemination of user friendly directorates), thus contributing to decreased transaction costs and increased networking;
  - the creation of arenas for the exchange of experiences on different topics;
  - programmes supporting joint implementation measures in different regions as well as mobility and staff exchange programmes.

Some key EU policies with a strong impact on the future of Europe's regions are outlined below. While all EU policy is based upon the Lisbon Agenda, different policies prioritise different objectives. Three policies are discussed in more detail:

- Research and Innovation policy, emphasising the impact on transforming the European Union into a dynamic knowledge-based economy geared towards growth;
- Rural development policy, emphasising the impact on strengthening rural development and ensuring a competitive agriculture and quality of the environment;
- Regional policy, emphasising the impact on greater cohesion in the context of an enlarged Union.

4. This holds true at least as long as technology is more easily transferred within a region than transregionally.

2.2 EU research and innovation policy

Innovation is a cornerstone of the Lisbon strategy launched by the European Council in March 2000, completed and reinforced by subsequent European Spring Councils that are held annually to define the relevant mandates and ensure that they are followed up.[5]

EU research and innovation policy is based upon

- the observation that Europe is lagging behind its major competitors (such as the U.S. and Japan) in terms of crucial determinants of economic growth and qualified jobs: namely investments in research[6] and effectiveness and efficiency of commercialising research results.[7] More than a third of the way to the 2010 goal there still is a delivery gap;
- the dedication to not only close the gap but to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. EU policy aims at strengthening research in both the private and the public sector (the Barcelona target of 3% of GDP[8]) and its commercialisation by strengthening the links between research and business, fostering exploitation of RTD results, and encouraging the creation of spin off companies.

In order to effectively implement its policy, the Commission has clearly articulated its plans to increase the relevant budget and to provide a stable framework for innovation. The European Parliament unanimously adopted a report calling for the budget of the Seventh Framework Programme to be raised to 30 billion € for the four year period. The Financial Perspectives Document[9] suggests a budget increase for "Competitiveness for growth and employment" from 8.8 billion € in 2006 to ca 26 billion € in 2013. Taking all research fields together (including space and security) this implies a doubled research budget and a most substantially increased budget for other innovation-relevant measures. The Commission has stressed the need for equal or increased funding from national/regional bodies as well and has clearly pronounced that it will not compensate for stagnating or even decreased national budgets.[10] As EU budgets are below 10% of Europe's R&D spending, the key challenge is to stimulate, catalyse and leverage national and regional funding as well as to assure increased commercialising efforts.

5. The Lisbon strategy is documented in Communication "Innovation in a Knowledge-Driven Economy" COM(2000)567 Final. See also "Innovation Policy: Updating the Union's Approach in the Context of the Lisbon Strategy" COM(2003) 112 Final. The Lisbon strategy is based on earlier works such as
   (1) the Green Paper on Innovation (COM(95)688).
   (2) the First Action Plan for Innovation in Europe (1996) which particularly addresses the fostering of a genuine innovation culture, the creation of a legal, regulatory and financial environment conducive to innovation and orientation of research more closely to innovation. The Commission undertook to act on exchange of information and best practice, the promotion of innovation in Framework Programme research, and EU competition and patent law. It urged Member States to act on administrative simplification, taxation and incentives, and education, training and the mobility of scientific personnel.
   (3) the Communication on Implementation of the Innovation Action Plan (1998).
6. Whereas ca 2% of the European Union's GDP is invested in R&D, the respective figures for the U.S. and Japan are 2.8% and more than 3%. The financial resources dedicated to innovation by the US are exceeding those committed in Europe by 40 billion US $. European countries tied by the Stability and Growth Pact cannot launch a loan on their own to raise money for RTD investments. However, upon formal request of the individual governments, the European countries can collectively issue a major loan via the European Investment Bank in order to catch up with the lack of resources (public and private) dedicated to R&D during the last two decades. Such a loan should be around 1.5% of GDP (i.e. 150 billion €) in order to achieve the targets of the Barcelona Council.
7. European companies apply for 170 patents each year per million inhabitants, compared to 400 for American companies. The Union's commercial deficit for high-tech products is approximately 23 billion € per year. Cf. European Commission, Statistics on science and technology in Europe, 2003 edition.
8. Two-thirds coming from private investment and one-third from public investment. For the priorities of EU innovation policy as defined by the European Council in Barcelona (2002) see "Productivity: The Key to Competitiveness of European Economies and Enterprises" COM (2002) 262 Final.
9. Communication from the Commission to the Council and the European Parliament. Building our common future. Policy challenges and Budgetary means of the Enlarged Union 2007-2013.
10. Some countries are still far below the 3% target (particularly Greece, Portugal, Spain, Italy and Ireland).

Although research and innovation policy is mainly defined and implemented on regional and national level, there are a number of issues that can best be dealt with on European level through co-operation between the Commission and Member States. Main thrusts of EU research and innovation policy include:

- *Completing the European Research and Innovation Area*, acting as an internal market for research and technology, as well as a space for a better co-ordination of national and regional research activities and policies, to overcome the present fragmentation and duplication of research efforts in Europe. This is to be achieved by the application of the open method of co-ordination of support of research and innovation policy in areas such as pursuing the 3% of GDP target for R&D investment or developing human resources in science and technology (with a particular emphasis on frontier technologies), and the setting up of a mechanism for taking stock of the progress achieved and assessing its efficiency.[11] Substantial progress has been made in the field of intellectual property rights and arrangements for patentability of computer-implemented inventions already. Measures to further ease the commercialisation process will comprise renewed efforts to introduce the Community Patent. The internal market will increase transparency, co-operation and competition and thus the level of excellence of European innovation;
- Interaction and co-ordination of research and innovation policy with other fields of policies has been strengthened and needs to be further intensified. Co-ordination will be intensified both between different fields of policy (such as regional policy and innovation policy) and between different levels of policy (including EU policy and national policies). Integration of different policies to a holistic system approach will be pursued: Structural funds will be increasingly utilised for research and innovation;[12]
- Based upon a broad understanding of innovation, EU research and innovation policy will not only aim at strengthening basic research but also foster entrepreneurship and innovation-oriented relationships between technology and competence providers and companies in general and SMEs in particular. The New Action Plan for Innovation "Innovate for a Competitive Europe" states that the action plan will seek to "place the enterprise at the centre of innovation policy" by focussing on key issues relevant to innovation processes inside companies;
- Raising awareness for issues of global concern: including the need to strive for excellence in order to develop competitiveness. Support is provided to encourage champions and best practice examples by providing reputation and financial support (such as public private partnerships) and disseminate the lessons learned from experimental/pilot activities;
- Encourage international networking and mobility. Again, transnational collaboration is not supported as a value of its own but as a means to achieve excellence. Successful instruments of FP 6 like "networks of excellence" and the "integrated projects" will be continued[13] "Technology platforms" are being set up, which bring together companies, research institutions, the financial world and regulatory authorities at European level to define a common research agenda;
- Prioritisation of research in fields where there is an extreme need for critical mass of resources, particularly in key areas for growth such as microelectronics, telecommunication, biotechnologies and aeronautics;
- Provide statistical data and decision support.

11. Cf. the Conclusions of the Brussels European Council of March 20th and 21st 2003.
12. "Some Key Issues in Europe's Competitiveness – Towards an Integrated Approach" COM (2003) 704 Final pleads for interaction of policies areas. It pinpoints how exploiting synergies between different policies at EU and national level – such as Industrial Policy, Internal Market Strategy, Innovation, Research and Competition – will pay off in increased competitiveness.
13. In terms of reaching SMEs, the panel of evaluators of the effectiveness of the new instruments of FP6 highlights that the position and participation of SMEs in the new instruments has not been satisfactory. This could partly be achieved by following the panel's advice to significantly simplify administrative procedures and financial rules to allow more efficiency and flexibility in implementing participation instruments (cf. the evaluation, dated June 21st, 2004). Costs of above 100.000 € to prepare a proposal for Networks of Excellence or Integrated Projects are not uncommon and hinder the participation of big organisations as well.

The strong emphasis of EU policy on excellence forces regions to develop and implement a strategy to ensure the region's competitiveness and find investors instead of documenting weakness and depending on sponsors. Those regions which are willing to do so will be supported by the Commission. Other regions will face the threat of decreasing financial support (less money will be given on the grounds of equal distribution), migration of key competence bearers to locations of higher attractiveness (some organisations will merge with others or disappear, the Bologna process/LMD process) which could start a downward spiral for non-performing regions.

Regional policy should be co-ordinated with national and EU policies in order to exploit synergy potentials. Regions that are willing to engage in the process of further developing their competitiveness can get financial support from the EU for actions aimed at achieving and/or further developing excellence. Examples include:

- transnational networking;
- mobility schemes;
- development of human resources;
- researcher training.

Regardless of the form of support applied for, it becomes increasingly important to document that the investment is worthwhile making and will generate adequate returns on investment in the form of new and better jobs or improved quality of life. This can be done by regional foresight exercises. Support will decreasingly be granted to compensate for weaknesses.

2.3 EU rural development policy

A fundamental reform of the Common Agricultural Policy (CAP) was undertaken on June 26th 2003 by the EU Agricultural Ministers in Luxembourg[14] and complemented at the Council of Agriculture Ministers on April 22nd 2004 in Luxembourg. The new policy has been designed to provide a framework for the sector until at least 2013 and to implement the spirit of the Lisbon Agenda and its further developments at the European Council in Göteborg 2001. It is also based on the reforms in 1992, the European Conference on Rural Development (Cork, November 1996) and particularly the Berlin "Summit" in March 1999 ("Agenda 2000").

The former agricultural policy was primarily aimed at increasing production. It has now been replaced by an EU rural development policy that focuses on agri-competitiveness, food quality and safety and environmental sustainability. Additional concerns comprise animal welfare, a living countryside and protection of the natural and cultural heritage. The policy can be summarised as integrating the two potentially conflicting objectives of competitiveness in agriculture and environmental sustainability. This is very much in line with the OECD perspective of multifunctionality of agricultural business, which produces a range of commodity outputs (food and fibre) and also a range of non-commodity outputs, including both positive and negative environmental and social products and services.

Whereas there is a significant change in basic philosophies and priorities, the size of the foreseen budget will remain basically unchanged for the coming years. The Financial Perspectives Document suggests a stable budget dedicated to "sustainable management and protection of natural resources" for the period to 2013 of ca 58 billion €.[15] The component of the budget dedicated to agriculture (market related expenditure and direct payments) is even slightly decreasing. This is in line with the decision of the European Council (Brussels, October

14. The relevant legal texts were adopted by the Council on September 29th 2003.
15. Rural development funding for the period 2000-2006 comprises over 50 billion € for mainstream rural development programmes, with 33 billion € coming from the Guarantee section and 18 billion € from the Guidance Section. Ca 2 billion € is allocated to LEADER+. LEADER + aims to bring together those active in rural societies and economies to look at new local strategies for sustainable development (financed by the European Agricultural Guidance and Guarantee Fund (EAGGF) Guidance Section). In the future, LEADER+ will probably be integrated into mainstream programming.

2002) to set a ceiling on expenditure on market support and direct aid between 2007 and 2013 ("new financial discipline mechanism"). The ceiling does not apply to rural development spending.

The most important characteristics of the new EU rural development policy are the following:

- *Emphasis on competitiveness of farming and forestry*: Trade distorting support measures will be reduced. Direct payments to farmers will be largely decoupled from production.[16] The single payment amounts will be calculated on the basis of the farmers' historic production of the products concerned (generally the 2000 to 2002 period). This mirrors a change of basic philosophies from subsidising production to supporting competitiveness and a living countryside. The intention is that farmers will respond to the change by paying less emphasis on maximising production and more emphasis on marketability of their products. As the Declaration formulated at the European Conference on Rural Development in Salzburg (2003) stresses "competitiveness of the farming sector must be the key aim of rural development." The CAP allows for a proportion of direct aids to go towards quality improvements measures and marketing.[17]

- *Emphasis on a knowledge-based agriculture* as a means to achieve competitiveness: EU policy highlights the necessity to invest in technologies that are key to maintaining and enhancing the competitiveness of European agriculture by financially supporting relevant technology platforms (such as biotechnology, genomics etc.).

- *From agriculture to rural development:* Integrating rural development policies into a holistic approach to support sustainable development and improve the quality of life. Funds are transferred from market support to rural development.[18] Main thrusts of rural development policy will be:
  - Support for restructuring aimed at increasing the competitiveness of the agricultural sector;
  - Enhancing the quality of life in rural areas and promoting diversification to non agricultural activities.

  A Rural Development Fund (1.2 billion € per annum) has been set up to protect the rural environment and for the production of market-required food products.

- *Emphasis on environment and land management:*
  - The reformed CAP has made cross-compliance compulsory. This was voluntary for Member States before the reform. All farmers receiving direct payments will be subject to it. The Commission will outline indicators for all legal obligations. A farmer who does not comply with the requirements will be financially sanctioned;
  - Support for land management including co-financing of rural development actions related to Natura 2000 nature protection sites to protect European bio-diversity, thus enhancing the environment and countryside;
  - Implementation of the EC Climate Change Programme, including a range of measures to ensure that the Kyoto Protocol target for EC greenhouse gas emission reductions is achieved;
  - Implementation of the Environmental Technology Action Plan ("ETAP");
  - Implementation of the thematic strategies which address specific environmental priorities (including soil; air quality; the marine environment; the urban environment; sustainable use and management of resources; waste recycling.

16. Decoupling rates vary between different crops. Member States can decide to maintain a proportion of crop-specific payments. The single payment scheme is linked to the respect of environmental, food safety, animal and plant health and animal welfare standards, as well as to the requirement to keep all farmland in good agricultural and environmental condition (cross-compliance). Eligible land must not be used for growing fruit, vegetables, table potatoes or permanent crops.
17. Eligible fields of aids include "applying new technology", "improving and monitoring quality", "encouraging the development of new outlets for agricultural products", and "protecting the environment".
18. In order to strengthen investments in rural development with overall unchanged budget, direct payments for bigger farms will be reduced by 3% in 2005, 4% in 2006 and 5% from 2007 onwards (modulation).

The main implication of EU policy for Europe's rural regions is the importance of overcoming denial and the necessity to invest in competitiveness instead of supporting business as usual. Rural regions have possibilities to create strong regional profiles and position themselves internationally. The main barrier is lacking motivation to restructure. Some options of positioning EU support include functional foods/biotechnology and wellness/preventive medicine/tourism. Opportunities offered by EU policy comprise the 1.2 billion € (per annum) Rural Development Fund.

These regions also have opportunities to participate in EU programmes aimed at increasing competitiveness that are not specifically targeted towards rural regions.

A restructuring of a rural region needs to be based upon a thorough analysis of its strengths and weaknesses, its opportunities and threats. A long term vision (minimum 20 years) is needed to design a roadmap on how to proceed. Regional foresight can effectively contribute to the restructuring process by creating a consensus on the vision and strengthening regional players' dedication to implementation.

2.4 EU regional policy[19]

Following the Lisbon Council, EU regional policy is characterised by the attempt to successfully integrate the two (potentially partly conflicting[20]) objectives of competitiveness and cohesion[21]. In particular, the Commission maintains the view that social and economic cohesion policy should be allocated a single, and transparent, budgetary heading which is considered essential in order to provide the certainty and the stability necessary for the planning of the next generation of national and regional multiannual programmes. The Financial Perspectives Document proposes a continuous increase for the budget position "cohesion for growth and employment" from ca 38 billion € in 2006 to ca 51 billion € in 2013.

The high emphasis paid to cohesion is primarily due to three reasons:

- The enlargement of the European Union from 15 to 25 Member States and subsequently to 27 or more decreases average GDP of the Union by ca 12.5%, widens the economic development gap and implies a geographical shift in the problem of disparities towards the east. The challenge of cohesion coincides with the challenges stemming from low growth rates and ageing populations;
- Cohesion policy is seen as an instrument to support the implementation of the Lisbon strategy. "The cost of not pursuing a vigorous cohesion policy to promote growth and tackle disparities is therefore measured not only in terms of a loss of individual and collective well-being but also in economic terms, in terms of a loss of potential real income and higher living standards. Given the interdependencies inherent in an integrated economy, these losses are not confined to the less competitive region … but affect everyone in the Union;"[22]
- Cohesion policy is seen as a powerful means of achieving greater efficiency, transparency and political accountability.

Implementation of the cohesion policy will be characterised by a sharper focus on key Community priorities, as defined in the Lisbon Agenda. Also, it is important to note that the financial contributions are seen as investments and not as subsidies, expecting a leverage effect and significant added value.

In line with the recommendations under the European Employment Strategy, the focus for employment related programmes will be on promoting social inclusion, cohesion and implementing reforms to progress in fighting unemployment.

Compared to the period 2000 – 2006, a simplification of funding mechanisms is foreseen. Six financial instruments will be reduced to three (Cohesion Fund, the European Regional Development Funds,

19. See e.g. the European Commission's proposal for a regulation of the European Parliament and of the Council on the European Regional Development Fund, dated July 14th, 2004.
20. Although growth and cohesion can be mutually supportive, they need not be. An investment policy aimed at maximising return on investment in terms of new and better jobs and economic growth does not automatically promote cohesion. At least in the short and mid-term less favoured regions could suffer from such a policy.
21. "… cohesion policy needs to incorporate the Lisbon and Gothenburg objectives and to become a key vehicle for their realisation via the national and regional development programmes." Third report on economic and social cohesion.
22. Third report on economic and social cohesion.

the European Social Funds), nine key objectives will be reduced to three:

- ca 78% of the budget will be dedicated to *convergence and competitiveness* (financed through the Cohesion Fund, ERDF and ESF);
- ca 18% of the budget will be dedicated to *regional competitiveness and employment* (financed through ERDF (anticipating and promoting change) and ESF (helping people to anticipate and respond to change));
- around 4% of the budget will be dedicated to *European territorial co-operation* (financed through ERDF).

The ERDF will focus its investments both in respect to the convergence and competitive priority on soft measures. Support for infrastructure is reduced and focused on the least developed regions. The competitive priority highlights particularly the fostering of SMEs' access to networks and their relationships to competence providers.

- *Innovation and the knowledge economy:* Investment and innovation are the key issues in this strand which is very much in line with the Lisbon target to boost Europe to become the most competitive region. Instruments used in this strand include promoting entrepreneurship (e.g. supporting spin offs from Higher Educational Institutions and enterprises, establishing new financial instruments), strengthening of innovation-oriented relationships between competence providers and SMEs, and fostering of regional innovation systems (e.g. through cluster and network support, supporting SMEs' access to advanced technologies);

- *Environment and risk prevention:* Investment and new environmental technologies are the key ingredients to environmental development. Main priorities within this heading are investment in infrastructure linked to Natura 2000, support of measures to prevent and cope with natural and technological risks, stimulating energy efficiency and development and use of renewable resources as well as promoting clean urban public transport;
- *Accessibility and services of general economic interest:* This strand primarily aims at improving the effectiveness and efficiency of European networks in the fields of communication, energy and transport (airports, harbours, rails, roads, waterways). Also, the access of SMEs to ICT is paid special attention to.

The ESF will contribute

- to the convergence priority with two strands
  - *Education, employment and social support systems:* This strand aims at developing social and care services, developing education and training systems and strengthening labour market institutions;
  - *Human Capital and labour supply:* This strand comprises measures in the field of training measures, active labour market measures to ensure access to the labour market for all and social inclusion support measures.

and

- to the competitive priority with two strands
  - *Adaptability of workers:* This strand aims at ensuring competitiveness of the workforce by enhancement of life-long learning strategies and in-company training for the adaptability of workers;
  - *Labour supply and people at disadvantage:* This strand aims at enhancing ageing strategies and prevention of early exit from the labour market and at increasing the participation of women in the labour force. Also, inclusion of people with disabilities, migrants and ethnic minorities is supported.

EU regional policy – like other EU policies – aims at achieving the vision outlined in the Lisbon Agenda. Cohesion is regarded and treated as an instrument to increase competitiveness.

There are many opportunities for regions that wish to engage in the process of becoming more competitive to receive financial support from the EU. This support is available for high performing regions as well as less favoured regions that are committed to improve their competitiveness. Key success determinants that can be strengthened with EU support include establishing effective regional innovation systems, strengthening a qualified workforce, effective infrastructure, and transnational co-operation in respect to all three dimensions of the triple helix: policy/administration, research/education and industry.

3. Regional Foresight – how?

Foresight does not aim to predict the future or to unveil it as if it was already prefabricated – but rather to help us build it. It invites us to consider the future as something that we create or build, rather than as something already decided.

The future is not already fact. It is not predetermined. On the contrary, it is open to many possible futures.

Foresight rests upon three basic assumptions that reveal a great deal about the philosophy behind the procedure: the future is a realm of freedom, of power and of will. It is at once a land to be explored, hence the utility of vigilance and anticipation, and in particular of 'exploratory' foresight, and a land to be built on, hence the utility of the approach to foresight sometimes described as 'normative', which refers to the investigation not of possible futures but of desirable futures, and to the policies and strategies that can be adopted to achieve them.

3.1 Foresight: a powerful tool to construct and share the future of a region

The virtue of a foresight exercise is two fold. Through the exploration of the possible futures of a region, the major challenges ahead can be identified, and a common understanding and collective awareness of these challenges can be obtained. Moreover, a foresight process allows the stakeholders to collectively reach a consensus on where to go, share a common view of a desirable future (vision, project) and join their forces to reach the defined common goals.

Some benefits of foresight

Foresight enables users to achieve:
- consensus on long term perspectives,
- reduction of uncertainty and ambiguity failures,
- agreement on concrete strategic initiatives,
- a commitment to implement those initiatives subsequently.

Potential benefits:
- improved policy design and implementation in all policy fields, design of innovation-friendly regulations;
- increased research and innovation performance, focused investments, better transformation of knowledge into new products and services;
- improved mutual understanding between science and other parts of society;
- improved social understanding of innovation;
- development of strategic intelligence, empowering regional and local actors.

"There is no one-fits-all method for a foresight, there is always the need for a case-specific analysis of each individual situation".

Source: the TECHTRANS Blueprint

Experience shows that a foresight process constitutes a good method of defusing conflicts relating to short-term issues, not least in between border territories. It is a process of participatory reflection which has the virtue of sensitising and mobilising all the inhabitants around their common destiny. Provided this participation is carefully organised and accompanied by real work generally based on a restricted group – foresight can be a very effective instrument for mobilising the citizens around a shared vision.

The following box contains a number of aspects that hold true for foresight processes in general; these I would discuss/insert before limiting the analysis to transborder regions. The reader is not interested in the fact that all insights stem from Transvision, but to know which aspects to pay particular attention to in transborder foresight processes.

Experiences of transborder foresight

In a transborder vision, foresight may "improve the harmonious integration of the transborder area with its territorial identity in order to:
• map the common potential as well as the specificities of the transborder area;
• identify a sustainable win-win game between transborder territories.

"In the complex context of border regions, foresight methods can bring people and system together across national borders and institutional boundaries, in a way in which the process is equally important as the outcome. In that way, foresight can be instrumental in building effective regions over several national borders".

"Defining the stakeholders and involving them in the process will strongly increase their commitment and willingness to use foresight findings. In the transborder foresight exercises, it is more difficult to organise a successful collaboration between the different regions' key participants due to the different cultures and languages of the citizens; stakeholders and decision makers. (…) It is therefore highly recommended that a hybrid foresight team is established involving members from each area."

"The weakness of sovereignty of a decentralized region like Lorraine could be strength for the foresight exercise, considering the mobilization of the intra-regional territories such as "Conseils généraux" in France, if they are participating in the whole process of cross-broder interregional cooperation".

"Foresight contributes to the democratic issue. (…) By widening the debate in order to embrace this open future, it is possible to identify the issues that arise and the possible choices. It therefore creates a renewed freedom of action and reinforces the confidence of the stakeholders in their ability to deal with their own future. In public life, this range of possibilities gives meaning to democracy".
"Foresight has shown its strong consensus-building qualities in its long term vision and its potential".
Source: The TRANSVISION Blueprint

3.2 The organisation of a regional foresight exercise

There are four essential stages in a regional foresight exercise. These are the

- elaboration of a shared picture of the present long term dynamic of the region;
- elaboration of a shared perception of the possible futures of the region and, through the elaboration of exploratory scenario, of the key challenges the region may have to face;
- definition of a shared vision of a desirable future;

elaboration of a common implementation strategy to achieve the goals.

A key question is to decide how to organise a foresight exercise. Following a top-down approach, some "experts" work in isolation to explore the possible future, identify the challenges and define alternative options for the political leaders of a region, which would then decide on the objective and give instructions to those in charge of the implementation. This was more or less the case in the "Catalunia 2010" exercise despite that more than hundred public debates were organized to discuss the scenarios once they were established. Following a bottom-up approach, the process becomes a much more participative exercise wherein a large number of persons would be invited to discuss and exchange ideas regarding the possible and desirable futures. This was, for example, the case in the "Wallonie 2020" foresight exercise.

Participation is essential for at least two reasons:

- the process is often more important than the formal results, as foresight is more an educational and training exercise whereby people

developed shared perspectives of the future;
- participation is a key condition for the appropriation needed to ensure implementation of the strategy resulting from the foresight.

Both approaches have their virtues and their limits. Convening a large public debate on what may happen and what should be done may prove completely inadequate, if people ignore some basic facts and trends and are excessively influenced by prevailing erroneous ideas, or the pursuit of short term personal interests.

Who are the keepers of knowledge?

A debate raged a few years ago between supporters of expertise and the upholders of 'participative' democracy. The first group believed that only experts are in a position to give their opinions; the second group believed that we should be constantly listening to 'civil society' if we are to determine social demand.

Nobody has a monopoly on the future. Experts are often wrong but not always*, and to think that by consulting civil society, or opinion polls, we will manage to determine social demand is naïve. We need to bring in experts, preferably from a variety of disciplines and ideologies and involve the public in anticipation exercises, and even the preparation of projects and strategies. As co-authors, they are more likely to feel part of the project, and will be more willing to work towards its realisation. But a sense of proportion must be maintained.

A debate also began between those who believe in foresight for the prince vs. those who believe in foresight for the people. This is a real issue. In fact we need foresight for decision-making, foresight as a political culture of the people, and foresight within the parliamentary authorities, where, theoretically at least, there is a power working in opposition to the executive, not from on the street but through democratically-elected representatives of the people2.

** See CERF Christopher, NAVASKY Victor. The Experts Speak. New York: Villard Books, 1998, 448 p.*

The capacity of the region to act, decide, implement a development strategy must also be considered.

The Futuribles Group was asked to conduct a foresight exercise on "Ile de France towards the Year 2000" that would establish a transportation plan and thus decide which investments were to be made. But, after discussion on the budget and financial resources of the region, it appeared there would have no financial resources to engage new projects. A foresight then was useless since there was no room for action.

One important output of a regional foresight exercise must be to foster cooperation among various actors who usually, instead of joining their forces spread them in various and often conflicting operations.

3.3 Foresight vs. Forecasting

A foresight process has three essential characteristics that distinguish it from forecasting.

It uses a multi-disciplinary approach of systemic inspiration, based on the principle that the problems we face cannot be correctly understood if reduced to one dimension - we usually tend to see things according to distinct academic disciplines. Instead, foresight provides an approach that captures all the variables that act upon them, regardless of type. Borrowing heavily from systems analysis, foresight invites us to consider phenomena on the basis of a study of all the factors and their interrelations.

The foresight procedure integrates the long-term dimension, past and future, not because foresight practitioners are obsessed with the future but because:
- In any system there coexist variables of great inertia, e.g. variables related to the ecosystem or demographic change, along with others that follow increasingly short timescales, e.g. technological innovations and foreign exchange rates;
- Only analysis over the long term allows us to eliminate 'periodic effects' and to grasp the deep dynamics of the systems so that we may then

analyse the real roots of systemic change with some distance;
- Only the medium term and long term give the region enough margin to initiate real transformation;
- The more our power increases and the more significant the consequences of our actions become, the more a long-term view becomes increasingly necessary.

Foresight is a procedure that integrates breakdowns, thus rather than hypothesise that change is permanent, e.g. tomorrow will be different from today just as today is different from yesterday, it strives to take into account the phenomena of breakdowns or breakthroughs, suffered or sought after, the consequence of factors as diverse as:
- ceiling effects, e.g. market saturation;
- technological breakthroughs of all kinds and 'habit-breaking' players;
- human desire to change the rules of the game.

Basically, at this level there is a distinction between the methods used in forecasting and those used in foresight. Those used in forecasting rely on precedent, analogy and extrapolation, three processes that gather material by looking back[23], based on the assumption that we live in a stable world where tomorrow will be different from today just as today was different from yesterday, that the same things always change in the same way at the same rate, following some immutable law.

The forecaster's principle tool, beyond the traditional statistical methods of extrapolation, envelope curves, etc., is the econometric model based on mechanics and transposed to microeconomics and then macroeconomics.

Methods based on models, preferred primarily by economists, econometrists, statisticians and forecasters, have long been opposed to **scenario** methods, which is more developed and used by foresight practitioners for the simple reason that it is better with a rough but fair estimate than a refined yet incorrect forecast. In other words, it is better to sweep wide and large to glean the macro-trends than to forge highly sophisticated tools for segments of realities, which generate quantitatively precise forecasts that are generally wrong because they skip over discontinuities, changes of course and breakdowns, both those inflicted upon us and those we ourselves provoke.

Forecasting	Foresight
A sectoral approach.	A global approach.
The primacy of the quantifiable.	Marrying the quantitative and the qualitative.
The principle of continuity.	Taking account of ruptures.
The GIGO effect*.	The CHAOS effect**.

* *Garbage In, Garbage Out:* forecasts – however sophisticated the simulation models – are only ever as good as the hypotheses.
** By saying that everything contains everything else, and vice versa, and arguing from the conditional (if…, then…), the complexity of the argument threatens to drown the decision-maker.

3.4 Conclusion

While the future is shaped by chance, necessity and will, it is important to recognise that "chance only favours those ready to take it" and that when we are gripped by necessity, it is often only the result of our lack of foresight.

We need to dispense with the idea that the future is outside our grasp and only depends on factors and players over which we have no control. A cultural revolution in our attitude to the future is needed, for us as individuals, members of different human communities, players in an ecosystem, as well as citizens. In all these spheres we need to play a role, make choices and exercise responsibilities. This requires a critical and creative mind, common sense, curiosity, reflection and maybe a dash of courage too. Formal methods make valuable processing tools but their output is only as good as the data, interpretations and opinions put in. They are nevertheless useful for ensuring foresight does not lose its intellectual rigour and become just a social topic of conversation.

23. BERGER Gaston. "Sciences humaines et prévision". *Revue des Deux Mondes, avril 1957.*

4. The Blueprints expert group

4.1 The context of the exercise

The competitiveness of European regions is dependent on the professionalism of its innovation systems. Effective and efficient regional innovation systems are characterised by

- Need-orientation (e.g. addressing demands and latent needs of companies and the public sector)
- Sustainability (e.g. strategic adequacy over a time- period of ca 20 years)
- Transparency (e.g. knowledge of system participants and system-external players about the strategy, the resources, the competences, the needs etc. of the system).
- System approach (e.g. connectivity of players, exploitation of synergy potentials, achieving high integral quality, cross-disciplinary and cross-sectoral work).
- Critical mass (e.g. dedication of sufficient resources to strategic issues).

A substantial amount of programmes have been run to support the further development of regional innovation systems. However, many of these approaches have only been limitedly successful in fully achieving the criteria listed above, mainly because

- the time horizon for regional development strategies is often too short, typically the next structural funds period
- the regional innovation strategy is not fully implemented due to lack of commitment from key players. As regional development cannot be hierarchically ordered and implemented, it is of crucial importance that the key organisations agree on the main development lines and co-ordinate their actions.

Foresight is an approach which addresses the five success determinants discussed above:

Foresight integrates key players from the three triple helix dimensions (policy/administration, research/education and business/industry) and thus helps to assure that regional key players take an active part in developing a regional strategy and take responsibility for specific themes (e.g. specific materials, technologies, value chains or sub regions) that are of particular importance to the region and that are complementary to its overall approach.

EU SUPPORT TO FORESIGHT

Within the *Fourth Research Framework Programme*, more specifically the Targeted Socio-Economic Research Programme (TSER), the EU has funded a number of projects/programmes in order to increase the understanding of foresight. The main target group of these programmes were foresight researchers.

The *Fifth Research Framework Programme* added a number of new dimensions to the rather limited approach within FP4. Specifically, the horizontal programme entitled Improving the Human Research Potential and the Socio-Economic Knowledge Base (IHP) through the specific action entitled Strategic Analysis of Specific Political Issues (STRATA) funded a number of projects which (1) further developed the set of foresight methodologies and tools, (2) widened the previously rather narrow focus on technology and strengthened the integration of social sciences, (3) intensified exchange of experiences between different communities (foresight researchers and foresight users) and (4) initiated actual foresight exercises.

As part of the STRATA (Strategic Analysis of Specific Political Issues) activities, a high level expert group was nominated "to explore the potential for regional foresight activities, to build upon and complement other activities aimed at supporting European co-operation in foresight, to contribute to the Europe-wide debate on governance, and to the involvement of the Candidate Countries in the European integration process."[24]

Within the *Sixth Research Framework Programme*, foresight is strongly encouraged in a number of instruments, like Integrated Projects and Networks of Excellence, and more specifically through the foresight knowledge sharing platform as part of FP6's support for the coherent development of policies.

4.2 Rationale of the Expert Group

Despite the potential of regional foresight to be a policy response to the emergence of the knowledge society[25] and despite previous initiatives aimed at promoting foresight,

- Foresight activities are still weak in many Member States.
- Fully fledged foresight activities are mostly done in national settings. Regional implementation and transnational co-operation appear to be more rarely undertaken.

Key reasons for the unsatisfying level of implementation of foresight in regions comprise

- Lack of knowledge by potential champions of regional foresight processes about the value of foresight and partly about the concept of knowledge based economies. There is an outspread fear that foresight could be a talk shop.
- Fear of potential stakeholders that Foresight is a science in itself that cannot be implemented by practitioners.
- Lack of a (access to a) community for sharing foresight experiences.
- Non-recognition of the urgency to engage in Foresight. By actually trying to initiate foresight processes in selected regions, two main explanations for this behaviour were found:
  - Denial of urgency to act. "It is not that bad. It will become better again."
  - Inertia to get started because of insecurity. "Before we start, we must have the full commitment from organisation A and have secured a budget of x €."

- Lack of best practice foresight cases with a documented impact on the regions concerned. This is partly due to the limited number of fully fledged regional foresight processes that can be considered best practice and to the fact that most of these processes have taken off recently and have yet to achieve their full impact

The basic rationale to run the Blueprints exercise has been to motivate and enable individuals and organisations to initiate and drive foresight processes. Specific emphasis has been paid to getting started. More specifically the following three priorities have guided the work of the expert group and the five blueprint working groups.

1. Development of a toolbox which provides insights and hands-on help to practitioners (e.g. regional development agencies, public private partnerships) who want to initiate and run a regional foresight. In particular, the project results in five specific blueprints which address *how* to initiate and get things done. The Blueprints are practical guidelines to the setting up and planning of foresight. They are manuals or roadmaps, not foresight exercises in themselves. They build upon real problems in real regions, with strong stakeholder involvement.
2. Raising awareness amongst different groups of stakeholders for the necessity, the possibility and the resource needs of foresight processes. Types of stakeholders include primarily:
   a. Policy makers at national or European level who could launch calls for regional foresights bringing together regional players.
   b. Regional policy makers who are searching for an instrument to overcome phenomena like denial of threats, enmity amongst regional players.

24. Terms of Reference: STRATA-ETAN expert group "Mobilising the regional Foresight potential for an enlarged European Union – an essential contribution to strengthen the strategic basis of the ERA", European Commission, Research GD, 2001. See also the Final report of the STRATA-ETAN Expert Group "Mobilising the regional Foresight potential for an enlarged European Union – an essential contribution to strengthen the strategic basis of the European research Area (ERA)" by O. Renn (Chairman of the High Level Expert Group) and M. Thomas (Rapporteur), 2002.
25. See the Handbook of knowledge society foresight published by the European Foundation of the improvement of living and working conditions.

3. Initiation of regional foresight processes, primarily in the participating regions represented in the blueprint work. The initiation of foresight processes has an impact on the regions directly concerned. It also serves to validate findings and conclusions from the blueprint work, and to create good examples which motivate other regions to engage in foresight.

4.3 Organisational set up

An expert group on "Blueprints for Foresight Actions in the Regions" was appointed to develop practical blueprints for the initialisation of regional foresight processes, as well as mobilising regional stakeholders around foresight. The work started with a Stakeholders' Conference (Brussels, December 2003) and formally ended with a Dissemination Conference (Brussels, September 2004). The group has initiated a wide range of processes. It is essential that these continue beyond the formal end of the project.

The expert group was built around a Core Group of Experts on foresight processes, who coached five working groups with regional partners, chosen because of their capacity to initiate actions and influence policymaking. Each working group has developed a specific blueprint focussing on the characteristics of the regions involved.

The approach of having each of the five working groups develop a specific blueprint was chosen for several reasons:

Ensure the relevance of the blueprint: Potential foresight champions are attracted by the insight that foresight can bring to achieving targets. So far, the scope of foresight processes has been very much determined by geography. Typically, foresight processes are done for a specific geographically defined area. Parallel working groups offer the possibility to employ a variety of different foci (e.g. a challenge respectively vision as for AGRIBLUE and UPGRADE, dedication to a specific tool as for TECHTRANS, specific experiences and/or plans as for FORRIS and specific geographic circumstance as for TRANSVISION) and stimulate exchange of experiences between partners in similar contexts. The resulting five blueprints are designed to be used for different purposes. However, they have a number of key characteristics in common: strategic view (time horizon ca twenty years), dedication of stakeholders to act and not just to study or re-act, participative approach ensuring commitment from most (if not all) relevant key players. The five blueprints reflect the fact that there is no single best way of doing a foresight that can be applied under all circumstances.

Ensure user-friendliness by active participation: The small size of the working groups allowed all partners to engage actively in the process, even though many participants had no previous experience of foresight. Thus an open and constructive dialogue between foresight experts and (potential) foresight users/implementers was ensured. The active involvement of potential foresight users secures relevance and readability of the blueprints. The validation of the blueprint in reference regions forced the partners to engage even in the day to day aspects of foresight. Experiences from all five parallel groups were brought together by the respective coaches and discussed in core group meetings.

Initiate foresight processes: One of the objectives of the Expert Group was to initiate actual foresight processes. In particular the selected reference regions are likely to continue the foresight processes after the formal end of the project. In fact, a high number of regions (mostly, but not exclusively reference regions) is dedicated to go on with foresight: champions have been identified, responsibilities have been distributed, budgets have been secured, etc. More regions now also have the possibility to host EU foresight events which helps to raise awareness in their respective region and creates a momentum for continued foresight activities.

Safeguard the work: Writing blueprints on how to do a foresight process is no easy task. When starting the work, it appeared fully possible that the exercise could fail. Thus, it served a kind of insurance function to have several groups working simultaneously, firstly because the risk that all five groups fail is smaller than that the only one fails, and secondly the risk that any one fails is reduced by mutual learning and sharing of experiences.

4.4 Five working groups – five Blueprints

- The *AGRIBLUE* blueprint clarifies the role that foresight can play in policy development for rural regions in transition. It outlines concepts for sustainable territorial development focussing on regions challenged by loss of competitiveness and migration. Also, it provides a sequence of practical steps on how to conduct a foresight exercise on these specific topics and how to embed foresight into rural policy development processes. Today, these regions are dependent on EU policies primarily in the agricultural field. Changes in structural funds will have a strong impact on AGRIBLUE regions. A joint key challenge of these regions is the overcoming of denial of major problems. The blueprint was validated in two reference regions, the Border, Midlands and Western Region (Ireland) and the Weser Ems region (Germany).

- The *FOR-RIS* blueprint provides insights in how to integrate different strategies to enhancing regional innovation (comprising different sources of information, different circles of stakeholders and different approaches to strengthening a region's competitiveness) into one powerful approach. FOR-RIS regions have all taken action to strengthen their identity, clarifying their profile and positioning themselves at an international level.[26] FOR-RIS highlights how a foresight process can best be based upon (respectively best be co-ordinated with a parallel) RITTS/RIS type of project[27]. Both approaches are equally relevant, and two reference regions have been used for validation purposes: Lower Austria which is very experienced in RITTS/RIS type of projects and the South West region of Bulgaria which intended to engage in RITTS/RIS.

- *TECHTRANS* regions are characterised by strong science and technology bases as well as professional regional innovation systems. This group has worked on improving technology transfer in general and on methodologies how to raise awareness for intensified trans-regional technology transfer in particular. The group has developed tools on how to do so effectively and efficiently. Due to the nature of the group which focuses on the network aspect, no specific reference region was selected. Instead the network as whole was used for validation of the blueprint.

- *TRANSVISION* regions work on bridging neighbouring regions separated by national borders in order to create a larger region with sufficient critical mass. The TRANSVISION working group comprises two reference sub-groups, the so-called "Large Region" comprising Luxembourg, Saarland, Rheinland-Pfalz, Lorraine and Wallonia, and the so-called South East Europe Foresight Triangle (SEEForesighT) comprising the South Great Plain of Hungary, Vojvodina of Serbia and the west Region of Romania. The blueprint provides a practical framework of concrete sequential steps designed to build cross-regional strategic visions and guide decision making in neighbouring regions.

- The *UPGRADE* blueprint documents a sequence of practical steps involved in embedding the foresight process in policy formation for regions that need to re-position their economies. UPGRADE regions face the challenge of both coping with immediate problems (e.g. high unemployment rates) and simultaneously develop a globally attractive and competitive competence base. The regions aim at developing knowledge on how to make a tiger jump from traditional regions to more knowledge-based economies. The working group designed the blueprint in a way to make use of foresight as a structured methodology for creating a knowledge-based economy with the intention of living trustfully with change, developing a

26. The FORRIS exercise is focused on regions that have conducted a RITTS/RIS project or are in the process of starting such a project.
27. RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructure) and RIS (Regional Innovation Strategies) projects aim at supporting regions in developing their innovation strategies.
See http://www.innovating-regions.org/network/presentation/regional.cfm for more information.

learning region and ensuring competitiveness in the long term. Mecklenburg Vorpommern (Germany) served as reference region.

4.5 Lessons learnt

A number of observations have been made during the blueprint development process on what helps to make such an exercise successful.

- An in-process evaluation of the exercise should have been carried out in order to systematically identify success factors and allow an implementation of the lessons learnt in future work.

- It is possible to raise awareness for topics with EU funding. However, it is crucial to target individuals and organisations that have an urgent need (be it well identified or latent) and are in search for an instrument/approach to address it.

- In order to attract organisations and individuals and raise their awareness of new topics, travel-related expenses need to be covered. But, interested actors are most often motivated to contribute with their own working time for free.

- In order to keep the process going, it takes support from an experienced coach and a professional co-ordination unit. Such activities have to be financed.

- In order to develop new methodologies it takes a group comprising both leading specialists in terms of methodology, and stakeholders who want to apply the methodologies. Like for the development of new technologies an intensive dialogue between knowledge producers and users helps to assure that the new knowledge is *useful* and *useable*.

- In order to overcome cultural differences within the group (e.g. between experts and practitioners, partners from different countries, etc) it is necessary to have a coach steer the process. He can establish a mutual learning platform.

- There is no best way of communication. It takes the whole portfolio of personal meetings (workshops, bilateral meetings), phone/video conferences, chat rooms, e-mail etc. to ensure effective and efficient communication.

- It is necessary to define and adhere to clear milestones when deliverables are due. The format of delivery should not be defined too rigidly.

- Working groups should not be too large. However, it is helpful to allow for an expansion of the group during the process in order to take in new members that have shown a particular interest. Also, additional interested players can be invited to special events (regional conferences) and receive updates on the process via a newsletter or personally via a representative from their community.

- A plan on how to continue the work started should be developed as early as ever possible. In case of a successful initiation phase, it would be most helpful to define and finance a second stage at least some three months before the scheduled work ends. Thus, the sprouts that have been cultivated during the first stage of the process can be fostered.

5. Conclusions and recommendations

In an integrated Europe, regions face increasing global competition, but at the same time many European regions experience an increased degree of freedom in terms of developing and implementing their own strategies.

The opportunity and the necessity for regions to actively shape their future demand for the employment of foresight. In view of the new regional and rural fund programmes, the timing is perfect for conducting regional foresight. The blueprints project has validated the assumption that stakeholders in regional innovation systems are actively demanding an approach to master the challenges of managing these systems. Regional decision makers are confronted with a number of challenges that need to be addressed urgently.

- The absence of hierarchy necessitates a participative approach to decision making.
- The distribution of information and the continuously increasing amount of information requires efforts aimed at increasing transparency.
- The intensified competition through new competitors (globalisation) and improved competition (traditional competitor regions invest more and more professionally in their market position).

It is time to get started with regional foresight. The work of the High Level Expert Group has contributed to the foresight knowledge-base, stimulated trans-regional collaboration and been instrumental in initiating foresight processes in the regions concerned.

5.1 Increasing the awareness and impact of foresight

Foresight contributes to improving the quality of governance by activating the stakeholders and citizens of a region. Regional authorities have a key role to play in communicating policy related inputs to central government ministries and their agencies in the region. These inputs have greater credibility when they arise from an open process of deliberation involving regionally based stakeholders. Foresight favours interactions between decision makers, companies and civil society in order to build open futures and to share common visions. By widening the debate, foresight creates a renewed freedom of action and reinforces the confidence of the stakeholders. In public life, this range of possible futures gives meaning to democracy. In this way foresight can play an important role in addressing governance problems as they are experienced at regional level.

It is necessary to define and implement measures aimed at stimulating a good governance culture. Foresight is a means of improving regional governance but which demands a certain openness which some administrations – particularly in the New Member States formerly used to central planning – are missing.

STRATEGIC POLICY LEVEL

- Foresight need to be embedded in the decision-making processes of regions. One-off foresight exercises help to give impetus to regional innovation strategies, identity and vision creation, but long-term strategies and visions need to be updated, networks and implementation processes kept alive, and a foresight culture nurtured.

To capitalise on the contribution of foresight to longer-term strategic planning including policy formation and the development of new forms of governance, Foresight needs to be a continuous process. Depending on the regional/national situation this would be best achieved by either establishing a Foresight Centre or a Foresight Consortium of competent agencies.

- During the process it has become clear that although foresight is a most meaningful approach to address very different challenges in different circumstances, there still is suspicion that foresight is an expert's gimmick. For the participants in the working group, this misunderstanding has been overcome.

To harness the power of foresight in building long-term strategic capabilities, priority needs to be given to embedding foresight into all levels of education, starting with university post-graduate programmes. At secondary school level opportunities exist for the introduction of foresight activities for example as a part of the 'gap year' activities common in Ireland and the UK.

POLICY IMPLEMENTATION LEVEL

- Foresight is crucial when long-term large scale investment decisions are being made. Foresight validates visions and secures commitment of relevant stakeholders.

To optimise the contribution to the long term competitiveness of the EU by developing sustainable knowledge based regional economies, Foresight must become an integral part of the support actions of the different EU General Directorates (as well as the different ministries on national and regional level) concerned with policy formation and the development of regional innovation systems.

- In the Commission's proposals for the new Structural Funds regulations it is foreseen that operational programmes under the 'convergence' and 'regional competitiveness and employment' objectives shall contain actions for adapting the regional economies, in a preventive manner, to the changes of the European and international economic environment. It is also foreseen that at the initiative of the Member State, for each operational programme, the Funds may finance preparatory, management, monitoring, evaluation, information and control activities and activities to reinforce the administrative capacity for implementing the Funds.

It is particularly important that the systems devised by the EU for the next phase of Structural Funds operations (2007-2013) allows for the use of foresight by regions wishing to design and implement innovation strategies on the basis of wide participative processes. In the 'Community strategic guidelines on cohesion' and the new strategic national reference frameworks, provision should therefore be made explicitly for foresight and other capacity building activities.

In relation to EU Framework Programmes and also national and regional programmes aimed at preparing regions to enter the knowledge-based economy, the concept of including an obligatory foresight element in major funding instruments should be considered. It would be beneficial in contributing to the competitiveness and social cohesion of European regions.

FORESIGHT METHODOLOGY

- The process has resulted in an increased knowledge on how to drive foresight processes, particularly on how to initiate them. The process has strongly confirmed the assumption that there is no single best practice of conducting foresight, but that regional specificities in terms of resources, objectives and context have to be taken into account adequately (difficulties, opponents, practical hints how). Five specific blueprints have been prepared, which provide guidelines and recommendations on how to conduct a foresight exercise in a specific regional context, but valuable lessons can be learned for all regions from all five blueprints.

Foresight methodologies in general and the techniques for evaluating the impact of foresight in particular have to be further refined.

The exercise was strongly focused on the initiation of foresight processes.

Successful foresight initiatives require good preparation. Programmes that provide support for foresight initiatives or accommodate foresight initiatives as part of a larger action should provide adequate support for preparatory phase work. Such work includes rigorous stakeholder analysis as well as activities intended to establish a region-specific evidence base for dialogue and policy oriented recommendations.

- The process of developing the blueprints has confirmed the assumption that a mix of experts and users (regional stakeholders) is vital for achieving user-friendly, need–oriented tools and to prepare the deployment of the tools. Overall, the process has resulted in a number of lessons learned on how to run such working groups. This aspect is elaborated upon in the chapter on the expert group.

5.2 Network effects

- Those responsible for the development of regional innovation systems are faced with long term strategic challenges that need to be addressed by foresight. Although the specific challenges vary from one region to another, there is a huge potential for cooperation around foresight processes tackling the same type of challenges. The project has identified and strengthened interest and enthusiasm of key individuals as well as regions for foresight processes. The receptiveness for tools enabling regions to strengthen their profile and competitiveness is very high in the regions.

- The exercise has created new partnerships between the participating regions and contributed to establishing an international network beyond the limit of this project (conference, working groups). However, these partnerships and networks are still in their early stages.

To consolidate the networks developed during the Blueprint project, consideration should be given to different approaches to strengthening - or where necessary creating - knowledge sharing platforms for the continuous exchange of information and experiences between foresight initiatives and practitioners throughout the enlarged EU. Possible actions comprise the further development of the Mutual Learning Platform and the initiation (and possibly fostering) of an association of foresight regions respectively Foresight Laboratories.

5.3 Implementation effects

- Based upon the input from the expert group, some regions have been inspired to initiate foresight processes.
  - Some regions have commenced a foresight process drawing upon regional and/or national funding.
  - Some regions have formed consortia in order to apply for European support together (e.g. within interreg IIIc).

Mecklenburg-Western Pomerania (Germany) served as reference region for the UPGRADE group. Within the framework of the blueprints work, a workshop was organised in Greifswald that brought together the members of the UPGRADE working group with regional stakeholders in the innovation system. The workshop was used for validating the idea of running a foresight process in the field of preventive medicine. Foresight was a new concept to the State of Mecklenburg-Western Pomerania , but key success criteria were present. These include:

- Shared dedication of key players to actively shape the future.
- Determination of key players to focus on fields of outstanding competence and future potential.
- Strong supportive global trends: Exploding costs in the health sector means that (1) health is a booming market opportunity and (2) that medical research will have to put more emphasis on economic aspects. One way of doing this ethically is to strengthen preventive medicine.

The positive feedback from both the regional players and the international experts encouraged the State to launch the next stage. Less than a year after the kick off conference of the blueprints project in December 2003, the foresight process has gained momentum.

- The foresight concept has been validated.
- Three thematic focus groups have been defined: (1) regenerative medicine, (2) community medicine and (3) a holistic approach.
- A strategic circle co-ordinates the individual activities.

Despite good and encouraging examples of continued activity it is crucial to ensure that momentum is not lost. It is crucial to maintain the momentum gained through the Blueprints process and avoid frustration amongst the most active regions in the working groups. A pilot programme would serve a number of functions: (1) Pilot projects could be used in order to systematically study the success factors of regional foresight processes in later stages. The lessons learned could be summarised in a follow up to the present blueprints exercise (a "Blueprints II"). (2) Best practice cases would motivate other regions to consider running a foresight. A similar snowball effect like for the RITTS/RIS/RISI etc. can be expected. (3) Best practice cases constitute a value on their own right.

Regions willing and capable to perform a foresight exercise, prepared to invest their own financial means and open to trans-regional cooperation should be financially supported. As with the RITTS/RIS projects, a first round of pilot projects could be run with the reference regions of the blueprint project. Such a programme would be beneficial in integrating foresight studies into policies and strategy planning. The participative process involved would provide regional decision-makers and stakeholders with the opportunity to contribute more effectively to the development of regional research and innovation systems and would also help to harness attainable economic goals. Regional foresight studies would be especially beneficial to the new EU countries, in developing demand-driven knowledge-based regional initiatives.

Appendix A: Essential Stages in a Foresight Process

There are essentially four stages in an exploratory foresight procedure:

1. Defining the problem and choosing the horizon
2. Identifying the key variables
3. Gathering data and drafting hypotheses
4. Exploring possible futures through scenarios building

1. Defining the "relevant" perimeter and horizon

It seems basic, but stating the problem properly remains crucial so that the question is clear and the terrain well mapped out.

In terms of regional foresight, this poses a particularly critical and delicate problem, that of the **"relevant" perimeter** as far as this concept has any real meaning. Is it necessary to work at the level of a town, a built-up community, a district, a department, a region (knowing that their size and autonomy varies considerably from one Member State to another within the European Union).

Here we come back to the problem of groups and sub-groups mentioned earlier, in a more complex form to the extent that the territories are entangled, the action perimeter of the various players does not coincide, and the territorial and network logics are intermingled.

However, possible and useful foresight corresponds to each level, as far as there are margins of manoeuvre to operate in. Conversely, it would be absurd to try to apply foresight to a territory **in vitro**, forgetting its external environment.

So there is no "good" perimeter as such. That will depend on the objective pursued, the degree of coherence of the territory, the existence of players with a capacity for action at each level.

What is the correct **horizon**? Some say that a good horizon line is that of break points, but this rule of thumb leads us into a vicious circle because it would require the study itself to determine those points. Moreover, there often is no sudden, clearly delineated breakdown, but rather a series of small ones which lead to a new dynamic.

In actual fact, a horizon may be chosen through approximation according to the following characteristics:

- the inertia of the system and the need to blur the periodic effects that generate turbulence, which could harm the correct understanding of the system;
- the schedule of decisions to be made, the power to decide and the means to be used (note that drafting a strategy is useless if the means to implement it are unavailable);
- degree of rigidity and motivation in the players.

In the end, there is no secret recipe. Only a heavy dose of common sense and pragmatism are needed to choose the optimal horizon line.

2. Identification of the key variables

The first step consists of **identifying** all kinds of **variables**, which do or may influence the territory under study. A list should then be drawn up of the variables noted, with some consistency and with as accurate a definition as possible.

To avoid excessive subjectivity, this list is usually compiled by a multi-disciplinary working committee made up of players and experts. The list may lead to further documentation, interviews with experts and various other consultations.

The second step consists of analysing the **relations between variables**, often with the help of a cross-impact matrix in which the variables are placed in

rows and columns, in order to work out systematically whether there are any relationships of causality between them.

The task of filling out this type of matrix, either as a working committee or using interviews with experts, documentary research or even specialised studies, may seem rather tedious and time-consuming. But the benefit of the exercise is twofold:

a) first, it lends the committee a common culture and approach in terms of the territory being studied;
b) second, it ensures a certain quality in the results stemming from the matrix once it has been processed, giving for each variable:
   – an influence index, which measures the intensity with which a variable acts upon the system;
   – a dependency index, which measures the intensity with which each variable is affected by the system.

The variables can then be represented in an 'influence-dependency' graph, which is a quick way of telling which variables are the driving variables in the system being studied.

One option to consider is whether or not to integrate the players in the list of variables. If they are not integrated, a graph of at least the most determinant ones can be produced. This graph will show, variable by variable, player by player, the power of each player on each variable, their respective strengths and weaknesses, and any alliances or conflicts that may develop between them[28].

At the end of this stage, we have a fairly good idea of the key variables and main players that determine how the system develops so we can move on to the next stage.

3. Gathering data and drafting hypotheses

Without a doubt, this is the most cumbersome stage. For each driver, or driving variable, we ask the following three questions:

– What is the past development of this variable?
– What is its development tendency (logical extrapolation)?
– What are the curves and potential breaks that could block the development tendency?

In order to respond to the above three questions properly, we have to deal with five major issues:

1) Which indicators are relevant for us to consider the development of the variable?

The choice of indicator is crucial. Sometimes we will be dealing with 'simple', quantifiable indicators, of which it is nonetheless essential to know the merits and limitations. For example, at the infra-national level the migratory balance often plays a more determinant role in demographic evolution than fertility or life expectancy. Again it is useful to know exactly who is leaving the territory and who is coming in.

Sometimes we will be dealing with 'composite' indicators. One of the best known is GDP which measures the monetary income generated by the production of goods and services in a particular country. However, it is not clear that GDP makes sense at regional level.

When it comes to values that change or to any other values that cannot be measured by standard accounting, the problem is even more complicated. And if we happen to be concerned (and we should be!) with lifestyles, for example, the problem of their definition and of finding relevant indicators, as well as of weighting these, is more complex still.

2) What data, either qualitative or quantitative, are available? How dependable are they and, if necessary, what type of weighting system should be applied?

Obviously, GDP is not an indicator of national contentment, nor is it an indicator of individual well-being. Nonetheless we are still fond of GDP per capita. Should we measure it in current euros, constant euros, purchasing-power parity (PPP) or perhaps by annual growth rate or volume? It is an important choice.

28. On the corresponding methods, see GODET Michel. "De l'anticipation à l'action". Paris: Dunod, 1991.

This is increasingly true when we try to grasp the relationship between two variables. Take the case of the relationship between economic growth and employment, whether one looks at the changes in these two factors in terms of growth rate or in terms of volume, the representation to construct one theory will be different.

3) Which time sequences from the past should be retained, given that in an extrapolation, everything depends on the reference used as a base?

Hence we see that the fertility rate in France over the past two centuries has witnessed diametrically opposed trends, according to the time sequence chosen.

4) How should past developments be interpreted? In other words, what are the causes of the effects observed?

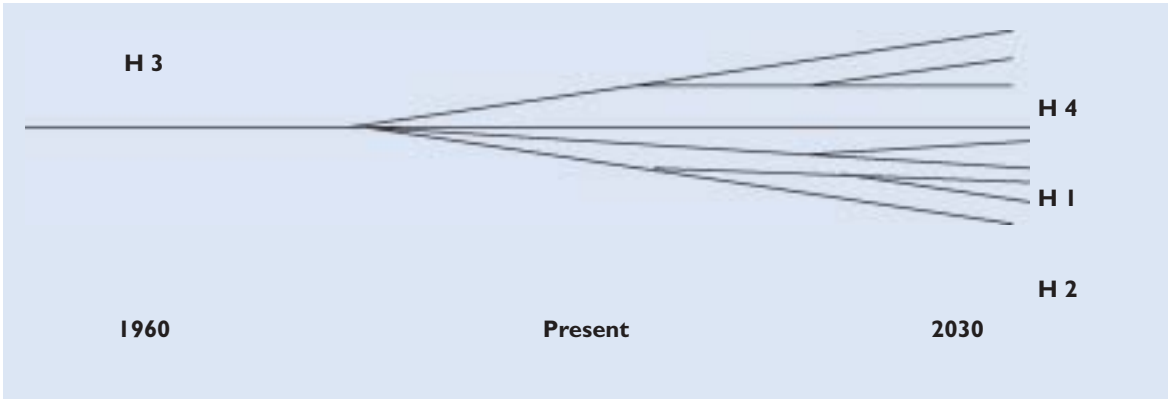
The absence of causal analysis may lead to absurd extrapolations since the cause has been exhausted. As an example, the progress achieved in life expectancy rates was for a long time caused by the decrease in infant mortality, which had resulted in an increase in the number of children. Yet we have now in Europe reached a ceiling, beyond which any progress will be minor. On the other hand, another factor has now taken over – the later age of death – hence the opposite result, an increase in the number of very elderly people.

5) Whose opinions?

Beware the idea that dictates that the past is the realm of perfectly knowable facts and events while the future is the province of completely arbitrary opinions. Analysis of the past leads to several interpretations, and still often challenges science.

The future is not the subject of gratuitous speculation; however, it should be the subject of hypotheses that, unless tested, must be buttressed by indicators, analyses, etc. Such is the case for opinions on the ups and downs and breaks that may come about in a given tendential development, which may be paired with probability of occurrence as attributed to the said modulations and breaks.
To explain further, some variables that exhibit inertia are characterised by **heavy trends** – for example, the ageing of the population. Looking ten years ahead, there is little point in developing hypotheses that are wildly different. The ageing of the population may have intensified or diminished, but the general trend, unless there is some major catastrophe, will not have managed to reverse itself.

In other cases, the feeling is there of a trend emerging, of a fact, or better still a set of symptoms (those 'weak signals'), that suggests a trend is beginning to appear that will have a major impact on the future. That was how some analysts interpreted the revival in economic growth in Europe at the end of the 1990s (see above). Make no mistake, one swallow doesn't make a summer!



Often we do not know how a variable will change. A number of hypotheses must be selected, taking care to ensure they are neither too different, nor too similar; not too different because if we take the view that anything can happen (our range of possibilities covers 180 degrees), we will not be any further forward, and not too similar because we need to allow for breaks and breakdowns.

Giving the matter plenty of **THOUGHT** is certainly the key. And escaping the mindset that producing a representation of the past will – eureka! – lead us to a (completely invented) idea of how things will change in the future. Our opinions about possible futures feed on our thoughts about the past, on the painstaking work we do to represent and understand the way things work; these feed our thoughts but remember they also feed our imagination.

After this stage, we have for each variable a representation of past development and hypotheses for future development. The next stage is about exploring the possible combinations of hypotheses to construct scenarios.

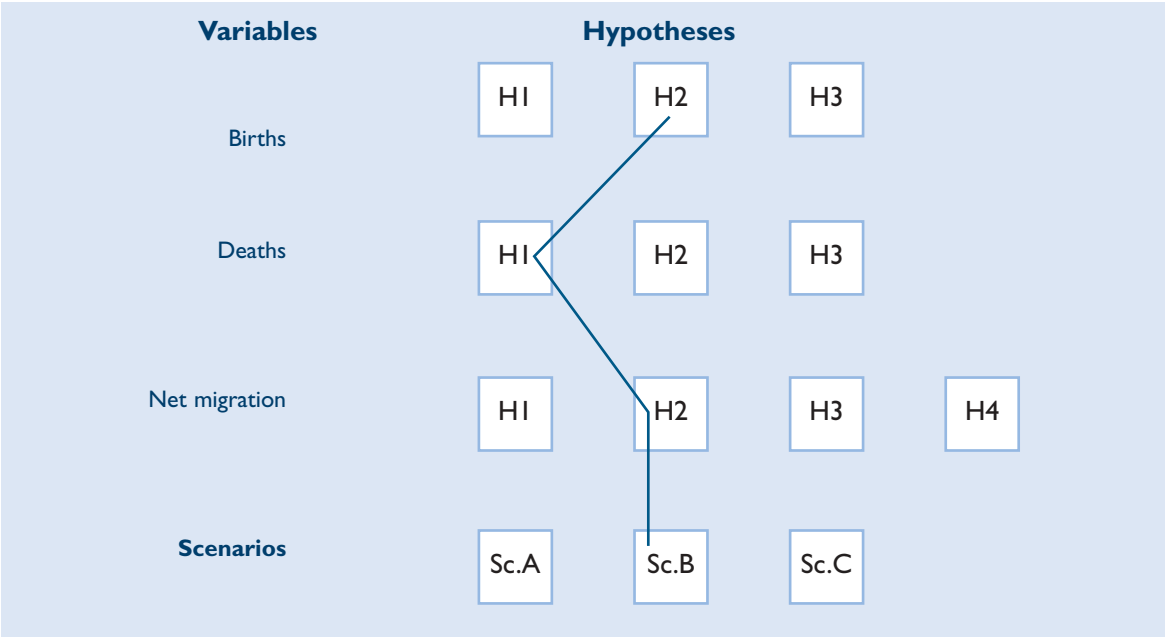
The futures watch

The early warning system or futures watch (similar to vigil if we translate closely the French notion of veille) inevitably forms the basis of any foresight procedure. It implies permanent analysis and evaluation of heavy trends, and of 'seed events' also denoted by the term "weak signals"
Before rushing ahead into methodology, let us point out here that our view of reality is often blurred by:

- the lenses and blinkers we wear, often without realising, that mean we are inclined to see some things (often those that confirm what we think) and not others (particularly those that upset us).
- worse still, our mental constructs, the way we decode and interpret things according to concepts, mental structures, emotions, reactions, blinkered reasons, or a particular cultural heritage, which may be inappropriate and is certainly biased…
- our means of observation, or more rudimentary still, the sources of information available or that we choose to use, perhaps too uncritically.
- the means of measurement we use, e.g. gross domestic product (GDP) per capita, which tends to favour whatever is expensive over what is not, and which occasionally overestimates what could be seen as accessory while underestimating the essential.
- the weight of the theories we use to explain reality. Thus it is undoubtedly useful to reconsider that well-known theory of the three stages of development, which claims that development moves from the agricultural age through the industrial age to the 'post-industrial', services age. Indeed, while it is undeniable that employment in agriculture has diminished, this has not stopped production increasing, notably under the impact of the industrialisation of agriculture. And while employment in industry is in turn tending to decline, the dominant phenomenon today is surely the involvement of the tertiary sector in agriculture and industry (at the same time as the industrialisation of services) rather than the so-called rise of the tertiary in opposition to the two preceding sectors.
- the influence of ideologies, or more broadly, schools of thought that often hide reality. In fact some ideas may be circulated with that purpose in mind. Another classic example is the explanation of the economic crisis as the result of oil shocks, with new technology as economic salvation. Sadly enough, this equation is too simple to be true.

4. Constructing scenarios

To take a very simple example, lets look at an exercise of demographic foresight. Change in this area is determined by three variables: births, deaths and net migration. Instead of producing projections from hypotheses selected arbitrarily on the basis of past changes, we are going to try to define logical but more contrasting hypotheses for each variable, and then explore their possible combinations.



It is worth mentioning in passing that even in a system as simple as this, consisting of three driving variables for which there are three or four hypotheses each, there is a very high number (3 x 3 x 4, i.e. 36 scenarios) of possible combinations, even if some are immediately ruled out for dubious reasons of coherence. As the aim is not to overwhelm the players but to enlighten them, only a small number of scenarios needs to be selected on the basis that they illustrate a good spectrum of possible futures.

Note that each of these variables is itself influenced by several factors, for example, changes in the number of births by the number of women of childbearing age, age of entering couple relationships (although?), desire to have children, expectations for the future (in terms of jobs, income, housing, etc.).

Consequently it may be felt that real demographic foresight demands segmentation into three subsystems, also known as components: the 'births' subsystem, the 'deaths' subsystem and the 'net migration' subsystem. Each of these subsystems is governed by a number of variables, and for each of these variables there is a range of hypotheses, which are combined to produce micro-scenarios for each subsystem, which in turn are combined to produced overall scenarios.

Hence, in territorial foresight, and after identifying the most determinant variables in terms of the development of a territory, one is often led to regroup these variables in subsystems (for example, human potential or the external context).

Each of these sub-systems is governed by a certain number of driver variables. Hence human potential depends on demographic evolution, at the level of education and training, state of health, etc. For each of these variables more or less contrasting hypotheses are drawn up. The combinations between these hypotheses one chooses to explore will end up in micro-scenarios by subsystem, in this case human potential.

Doing the same on the local production system, the structure and development of the territory, etc., we will have micro-scenarios available for each of the subsystems which, in turn, will be combined to provide global scenarios.

The importance of base and paths

An exploratory scenario comprises the following three elements:

a) the base, nothing more than the representation we create (it must be reliable) of the current reality and of the dynamics of the system we are studying;

b) the paths created in looking at the system according to a time scale, with the knowledge that as we advance, the questions we face will necessarily imply more hypotheses (the *if this, then that*

process). Specifying conditions each time, using deduction, we build the trees of possible futures, potential descendents of the present;
c) the final images are obtained at different periods, and according to the horizon line of the study, the result of the paths mentioned above.

It should be stressed that generating the final image is no more important than the paths leading to it and that it is essential, in this kind of procedure, to specify the order of magnitude of the phenomena and the moment of their appearance; in short, to position them in time.

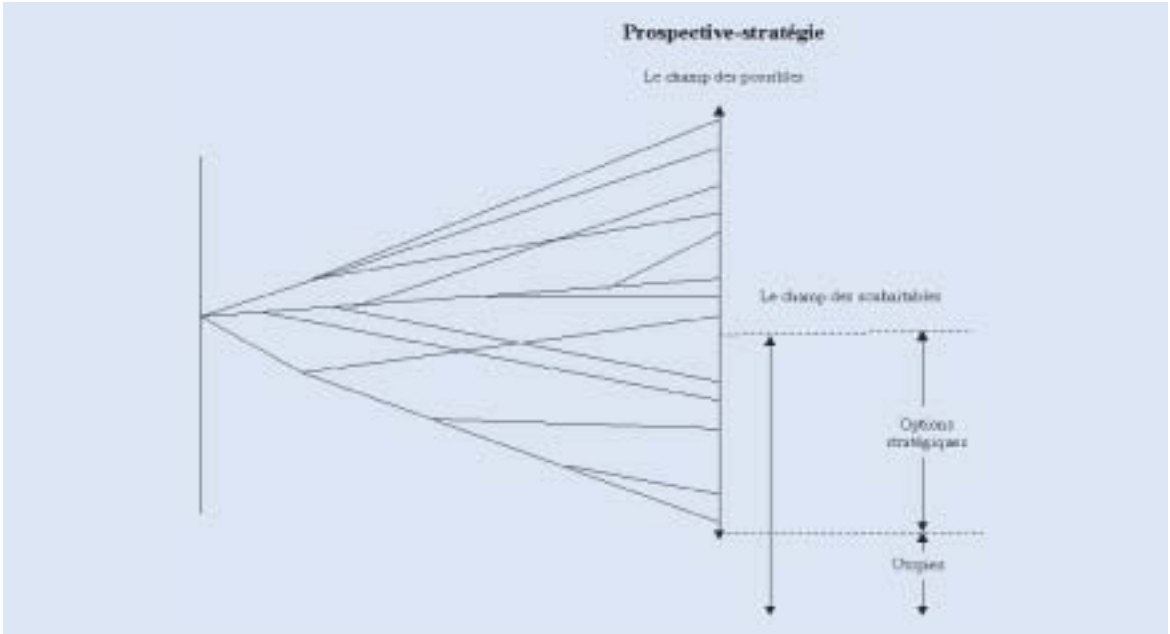
Watch out for the common practice of producing a snapshot-type image as if it were a scenario for a given year without any consideration of how the situation developed. This practice almost always artificially shrinks developments so that the year becomes 2010 or 2020 regardless. As a result, events which may be foreseeable five years down the line are confused with those considered unrealistic in less than fifty years.

Approximation is useful, but we must avoid formulations like "the ageing population will be a serious drain on the public purse". How much and when? Similarly we have to beware of ambiguous statements, e.g. "economic growth **should** reach x% between 2000 and 2005", since we might conclude that it is probable that growth will reach that figure (exploratory approach), when in fact it would be best that it be x% (normative approach). Obviously the two statements do not have the same meaning.

Obviously the inherent danger in the scenario method is confusion when faced with the complexity of the paths. Another risk is that rather than teasing out a few major options and illustrating them with results, we mix up possible paths by generating too many scenarios. Simplicity, subject to the precautions mentioned above, is the answer since the players need to be enlightened not overwhelmed.

The scenarios described herein are **exploratory scenarios**. A self-evident name since they explore the range of possibilities. They are completely different from **normative scenarios**, which may also be called strategic in that they start from the present and move toward the future, using a goal set in the future as a point of departure, producing a list of actions that must be taken to achieve the goal.

One clarification: the procedure usually involves both approaches. **Exploratory scenarios do the groundwork of what could happen; whereas strategic scenarios explore what one could do**, in other words, what development strategies can be adopted.



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Appendix C:
Links to EU policy developments

On reform of CAP:

http://europa.eu.int/comm/agriculture/capreform/index_en.htm
http://europa.eu.int/comm/agriculture/publi/newsletter/capreform/special2_en.pdf
http://europa.eu.int/comm/agriculture/publi/caprep/prospects2003b/fullrep.pdf

On rural development:

http://europa.eu.int/comm/agriculture/events/salzburg/index_en.htm
http://europa.eu.int/comm/agriculture/publi/fact/rurdev2003/en.pdf

On regional policy and structural funds:

http://europa.eu.int/comm/regional_policy/funds/prord/sf_en.htm
http://europa.eu.int/comm/regional_policy/sources/docoffic/official/reports/pdf/cohesion3 /cohesion3_conclusion_en.pdf
http://europa.eu.int/comm/regional_policy/sources/docoffic/official/reports/cohesion3/ cohesion3_en.htm
http://europa.eu.int/comm/regional_policy/debate/forcom2004_en.htm

On research and innovation policy:

http://europa.eu.int/comm/research/future/index_en.html
http://europa.eu.int/comm/research/era/3pct/index_en.html
http://europa.eu.int/comm/enterprise/innovation/communication.htm

On industrial policy:

http://europa.eu.int/comm/enterprise/events/industrial_policy/index.htm

On wider neighbourhood policy:

http://europa.eu.int/comm/world/enp/policy_en.htm
http://europa.eu.int/comm/world/enp/pdf/ip/IP_Strategy_Paper_ENP_120504_EN.pdf

On trade policy:

http://europa.eu.int/comm/trade/gentools/ourwork.ppt
http://europa.eu.int/comm/commissioners/lamy/speeches_articles/spla206_en.htm

European Commission

EUR 21262 – Foresight and the Transition to Regional Knowledge-based Economies
Draft final report of the expert group
"Blueprints for Foresight Actions in the Regions"

Luxembourg: Office for Official Publications of the European Communities

2004 – 52 pp. – 21 x 29.7 cm

ISBN 92-894-8274-5

KI-NA-21262-EN-C

DG Research commissioned an Expert group in the end of 2003 to develop "blueprints" for how to effectively initiate foresight processes in regions facing different types of challenges. Five blueprints aimed at foresight practitioners (i.e., regional stakeholders championing or initiating foresight) as well as a synthesis report summarising the blueprints and providing a contextual framework have been produced by the group. This policy orientation paper briefly sets the scene, describes the work of the group, its impact in the participating regions, as well as a short list of key recommendations for senior policy makers at regional, national and EU level.

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ISBN 92-894-8274-5
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