

Project Visions and Visioning



This article is developed within the scope of the **Project Visions and Visioning**, an effort to enhance Foresight learning through collaborative work.

Contents

- 1 Definitions of Foresight
 - ◆ 1.1 Main drivers
 - ◆ 1.2 Other drivers
 - ◆ 1.3 Emerging Developments
- 2 Evolution of foresight in the global historical context
 - ◆ 2.1 Insight into the development of foresight through globalization
 - ◆ 2.2 Era of forecasting in the first phase of globalization
 - ◆ 2.3 Beginnings of foresight in the second phase of globalization
 - ◆ 2.4 Systematic foresight in the third phase of globalization
- 3 Results and conclusions
- 4 References

Definitions of Foresight

Foresight is often defined as being 'the process involved in systematically attempting to look into the longer-term future of science, technology, the economy and society with the aim of identifying the areas of strategic research and the emerging generic technologies likely to yield the greatest economic and social benefits' [1]. Another similar definition, given by Luke Georghiou, describes technology foresight as 'a systematic means of assessing those scientific and technological developments which could have a strong impact on industrial competitiveness, wealth creation and quality of life'[2].

Dennis Loveridge implies that foresight thinking is strongly linked to system thinking. Both are influenced by behavioral traits and events are themselves regarded as systems or parts of a system. In order for future visioning to be named 'foresight' it has to be systematic and should be easily distinguished from day to day planning. Moreover foresight must be aimed at a longer term in time, beyond normal planning horizons, typically between five and thirty years.

Even if foresight concentrates on emerging generic technologies, that should be supported by the government, it shouldn't be dominated by science or technology alone. The need for government support comes from the lack of funding for strategic research from private companies when it comes to emerging generic technologies.

The social impact of foresight must always be taken into account, not the usual creation of wealth. This has lead some recent foresight exercises to adopt more problem oriented perspectives from the outset, for example, focusing upon issues such as crime prevention, education and skills, ageing societies, etc.

The products of foresight go further than the presentation of scenarios and plan preparation. A crucial element is the elaboration of a strategic vision, to which persons can commit. The vision is not a utopia but 'has to be explicit recognition and explication of the implications for present day decisions and actions'(FOREN Practical

Guide to Regional Foresight) [3]. Foresight goes beyond academic or consultancy-based forecasts of the future; it complements existing decision-making and planning processes in order to increase their effectiveness.

The role of foresight is not to predict but to create a shared vision of the future, one in which stakeholders are eager to endorse by the actions they chose to take in the present. As opposed to predicting the future, foresight aims to create it. Another important aspect is that foresight is not intended to replace forecast, strategic planning or future studies but to support them, by facilitating policy-making where integration of activities across several fields is vital.

Main drivers

Three main drivers have been identified concerning the rapid diffusion of national foresight [4].

1. Escalating industrial and economic competition

?The primary rationale [for doing foresight] is the widespread recognition that emerging generic technologies are likely to have a revolutionary impact on industry, the economy, society and the environment over coming decades.? [5]

2. Increasing pressure on governmental spending

Keeping in mind that all costs are escalating, in this case foresight aims to help the government to identify funding priorities.

3. Changing nature of knowledge production

Correcting ?system failures? is one of the most referred to reason for present technology foresight. ?Technology foresight offers a means of ?wiring up? and strengthening the connections within the national innovation system so that knowledge can flow more freely among the constituent actors, and the system as a whole can become more effective at learning and innovating?[6].

The potential for system-wide learning is linked to the level of interdependence between the various system actors. The degree of interdependence is, in turn, dependent upon processes that stimulate, nurture, encourage, and strengthen interactions between actors so that they become more permanent.

Other drivers

Other drivers worth mentioning that explain the wide spread of Foresight:

1. **Emergence of new styles of policy-making** - as the world grows more dynamically complex, it is impossible for any one organization to know everything that is needed for successful policy intervention. Thus, many governments have recognized that the requisite knowledge for successful policy intervention is distributed across a wide and varied landscape of actors, and that this landscape has a role to play in policy formulation and implementation. This model encourages the shift in governance from top to bottom.
2. **Increasing desire for anticipatory intelligence** ? in this case, widening perspectives, both spatially (e.g. to cover unexplored domain areas, untapped potential markets, etc.) and temporally (e.g. to encourage longer-term thinking than might normally be the case). Foresight offers new perspectives which in turn offer insights into possible opportunities and threats that might otherwise remain invisible. Also foresight offers companies and bureaucrats the advantage of being better prepared for all kinds of possible eventualities.
3. **Building advocacy coalitions** ? it refers to the ability to mobilise disparate groups of actors around a particular vision. Collectivity is important here ? to be taken seriously and to attract resources, actors

usually need to coalesce within more or less organised coalitions in order to better argue for (or advocate) support of their particular area. Those who are organised tend to rule, while those who are disorganised tend to be ruled, therefore foresight is often used to organise advocacy coalitions around issues of particular strategic importance.

4. **The ?Bandwagon effects?** ? it points out the advantage of having the competitive edge and the fact that no one wants to be left behind. The UNIDO and EU have played an important role in the process of diffusion.
5. **The ?Millennium Effect?** - governments all over the world have sought at least to appear to be preparing for the new opportunities and challenges that lay ahead in the twenty-first century.

To conclude, our understanding of foresight has shifted over the last decade, with much more emphasis now placed on the process benefits. This is reflected in the sorts of rationales offered for conducting a foresight exercise, which include addressing system failure and developing advocacy coalitions, among other things.

Emerging Developments

Supranational foresight is a further ?level?of activity from international institutions, which has emerged over the last few years, but the actions of the EU and UNIDO are likely to see an increase in activity over the next 2-3 years. A second development is the way we now view foresight exercises. Foresight is increasingly viewed within a wider Strategic Intelligence & Future Oriented Participative (SIFOP) practice that is embedded in policy and innovation landscape. Other sorts of SIFOP activity include evaluation and technology assessment. A third emerging development concerns the increasing use of ICTs in foresight. Electronic libraries of visions and scenarios have also been developed in some exercises. Finally, online discussion groups and forums are increasingly popular in foresight studies. A fourth development concerns the de-reification of expertise in foresight studies. Foresight is now for ?the masses?, with participation widened to include key stakeholder groups and even citizens in some instances ^[7].

Evolution of foresight in the global historical context

In order to manage the instability of global changes and probably an increasingly difficult business situation in the future, foresight has become one of the most popular strategic planning tools for establishing common visions, strategies and long-term plans on the government and business levels among policy-making bodies and corporate managers.

Efforts to develop foresight can be seen in China, the USA and Japan around the 1950s and these were followed by similar efforts in France, The Netherlands, Germany and the UK in the late 1980s, focused mainly on S&T. Basically, at first, South Korea, France and partly the UK oriented foresight projects in a more self-organized manner. In Europe, these activities also become popular among many of the new member states, but with varying intensity and scale. In Central Europe, full-scale national exercises were performed in Hungary and the Czech Republic around the year 2000, while in Slovakia, Malta, Cyprus, Estonia, Poland, Romania and Bulgaria only partial foresight exercises, more about setting priorities, building capacities or re-structuralization of national R&D systems were conducted ^[8].

Some countries, such as the Czech Republic, Poland, Ukraine and Hungary, have also made efforts to promote foresight on the national level, and increasingly more and more governments recognize the need to plan their future results that can contribute to shaping national or regional long-term development^[9].

Insight into the development of foresight through globalization

It is essential to place foresight in terms of the common phenomenon of globalization. This phenomenon has been highly developing in the last 100 years. The global economy strongly affects national economies and as such, their business outcomes. However, the world economy is significantly fragmented and there are different starting points available for an orientation in the future. Without purposeful systematic participative strategic planning, the specific impacts of globalization can inevitably tend to impair social stability and as such, "unilateral global integration" can speed up social tensions in many countries. On the corporate level, the gap distinguishing global leaders and the others can be even more visible.

When most people think of globalisation they think of the rapid expansion of trade, finance markets and corporate activity, and perhaps the associated decline in government power that has occurred in the last decade or two. Certainly, the term "globalisation" is little older than that, but the actual phenomenon of global expansion is much older and it has gone through a series of different stages that have culminated in the current situation. We need to understand this long history of globalisation to have some idea of where it is leading ^[10].

Era of forecasting in the first phase of globalization

The beginnings of pre-globalization can be traced back to the age of Christopher Columbus in the 1490s ^[11]. The history of globalization can be divided into three main phases. The first phase (to 1913) is known as the Laissez Faire Phase^[12]. From about 1870, we can see the emergence of the global economy with all the aspects of globalization. Global payments and transfers of goods, capital and human resources across national boundaries were almost unhindered. Government interventions in economic activity were minimal. During this period, which ended with the First World War, international business was mainly conducted by England (Bairoch and Kozul-Wright, 1996). Therefore, this period can also be called the Age of Empire ^[13].

The first forecasting industry was developed in the USA between 1910 and 1930. Many of these efforts were concerned with developing "leading barometers". Standard errors and multiple correlation coefficients were later used as indicators of forecasting validity ^[14]. The Great Depression (1929-1939) almost destroyed this first industry.

Beginnings of foresight in the second phase of globalization

The second phase of globalization started around 1914 and lasted until the 1980s, mainly because of the above-mentioned world wars and the ICT boom in the 1970s. The sudden end to the period of incremental global growth in the early 1970s provided the inevitable lesson of what can happen if forecasts and strategies do not adjust to emerging risks and global expectations. The 1973 Oil crisis began when the Arab members of OPEC announced that they would no longer transport oil to countries such as Japan, the USA and its allies in Europe that supported Israel. These countries responded with a wide variety of initiatives, and inter/intra-national economic consolidations hastened the creation of many warning initiatives as never before.

Systematic foresight in the third phase of globalization

This new phase of globalization (after 1990) has had an unprecedented impact on all aspects of global society. Generally, there are two main tendencies: trade globalization reduces disparities between countries while financial globalization increases them (IMF, 2007). However, the analyses confirm that technical and technological progress support the affirmative side of globalization, while "being prepared for the future" enables the exploitation of future opportunities and the avoidance of risks.

In the third phase of globalization, the world trade output has grown about five times since 1980. Total cross-border financial assets are now twice as large as in 1990. From the 1940's to the 1970's union workers enjoyed a golden age of prosperity and political activism that brought about changes in law to include the Equal Pay Act which prevents discrimination based on gender, the Civil Rights Act which bans discrimination based on race and passing of the Occupational Safety and Health Act(OSHA). During this time the AFL merged with the CIO and became the AFL-CIO with a membership of millions of workers throughout the manufacturing industry.

By the mid 1990s problems were emerging just as the rise of the Internet seemed to epitomise the transformative structural power of what was now called globalisation. The continued rise of explicitly anti-globalisation movements, who fought police in Seattle and elsewhere, the demise of the multilateral agreement on investment (MAI), the Asian economic crisis and the dot.com bubble all indicated the limits of this stage of development.

Results and conclusions

The global economy has become very vulnerable. The expansion of the global economy is expected to be more gradual because of the new risks and current vulnerabilities from the current global economic crisis, highly leveraged investments, through emerging markets in developing countries, up to the unexpected extreme environmental changes. While this progress of foresight in recent years has provided important opportunities for learning and joint action between different stakeholders supported by the ICT progress, it has caused incomprehensibility in the practice and theory of foresight. Yet, the main functions of foresight still remain to analyze past results, current positions and to anticipate new emerging trends, opportunities and risks in order to be able to benefit from the future. Foresight management should be more frequently accompanied by the facilitating of technological, social, political and structural changes rather than focusing on specific results.

References

1. ² Martin, Ben (1996). *Foresight in Science and Technology* pp. 139 - 168. Technology Analysis & Strategic Management, vol. 7.
2. ² Georghiou, Luke (1996). *The UK Technology Foresight Programme* pp. 359 - 377. Futures, vol. 28(4).
3. ² Keenan, Michael (2005). *Technology Foresight: An Introduction*. PREST, Institute of Innovation Research (IoIR), University of Manchester, UK.
4. ² Martin, B and Johnston, R (1999). *Technology Foresight for Wiring Up the National Innovation System* pp. 37 - 54. Technology Forecasting and Social Change, vol. 60.
5. ² Martin, Ben (1996). *Foresight in Science and Technology* pp. 139 - 168. Technology Analysis & Strategic Management, vol. 7.
6. ² Martin, B and Johnston, R (1999). *Technology Foresight for Wiring Up the National Innovation System* pp. 37 - 54. Technology Forecasting and Social Change, vol. 60.
7. ² Georghiou (2001). *Third Generation Foresight ? Integrating the Socio-Economic Dimension*. Proceedings of the International Conference on Technology Foresight, Science and Technology Centre, NISTEP, Japan.
8. ² Saritas (2006). *Systems thinking for foresight* pp. 11. PREST, University of Manchester.
9. ² UNIDO (2005). *Technology Foresight Manual. Volumes 1 and 2*. UNIDO Vienna.
10. ² Jemala, Marek (2010). *Evolution of foresight in the global historical context*. Foresight VOL. 12 NO. 4 pp. 65-81.
11. ² Rock, D. (1987). *Argentina: 1516-1987, From Spanish Colonization to Alphans*. University of California Press, Berkeley, CA.
12. ² Nayyar, D. (2006). *Globalisation, history and development: a tale of two centuries*. Cambridge Journal of Economics, Vol. 30 No. 1, pp. 137-59.

13. 2 Bairoch, P. and Kozul-Wright, R. (1996). *Globalisation myths: some historical reflections on integration, industrialisation and growth in the world economy*. UNCTAD discussion paper, No. 113, United Nations Conference on Trade and Development.
14. 2 Clements, M. and Hendry, D. (1998). *Forecasting Economic Time Series*. Cambridge University Press.