CAN FORESIGHT STUDIES STRENGTHEN STRATEGIC PLANNING PROCESSES AT THE URBAN AND REGIONAL LEVEL?

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Abstract

Foresight initially arose to make provisions for the future in science and technology, however now it is beginning to be used in issues linked directly or indirectly to the territory such as climate change, urban development and transport. The present paper explores the opportunities provided by foresight to complement and reinforce strategic planning processes at the urban and regional level. For this purpose, a scenario design method is developed and adapted to the requirements of territorial planning. Based on recent foresight studies conducted by the author in Spain, results show the conceptual and operative opportunities provided by territorial foresight as well as its current shortcomings for application in the urban and regional planning field.

Keywords: Foresight, futures studies, scenario design, urban planning, strategic planning.

Futures studies in the urban and regional planning field

Since its origins in the 19th Century and its full development in the 20th century, urban and regional planning has encountered serious difficulties, many of them provoked by its historic and socio-cultural contexts. Nevertheless, the main difficulties, namely the complexity of socio-economic processes, the diversity of local agents, and the future uncertainty of urban evolution, have remained unchanged over time.

In the light of these three basic difficulties, special attention **is** paid in this paper to the constant uncertainty regarding the future evolution of most urban development processes. Every single planner faced with the arduous task of foreseeing the future of a city in a 15 or 20 year time horizon has probably been anxious about the technical limitations of forecasting tools. If the planner has worked in a changing, turbulent environment, his anxiety will probably have been even greater.

Historically, one of the main aims of the planning profession has been to foresee the future of cities and regions. In fact, planning used to be about taking decisions in the present time to steer urban development so as to improve a community's future quality of life. However, futures studies have almost been abandoned by the planning profession, as reported by several scholars in the last few decades (Isserman, 1985; Wachs, 2001). The reason for this trend can be explained in the following terms.

In the 1950s and 1960s, urban planning projections were relatively reliable and widely used because of the period's inherent socio-economic stability. However, since the early 1970s, growing geopolitical instability and economic changes started to produce gross mistakes in planning projections, supported by highly sophisticated mathematical models. The continuous non-fulfilment of long-term future predictions gave rise to a general discredit of urban analysts and put most simulation models in quarantine. It was commonly believed impossible to explain large, complex urban phenomena on the basis of scientific laws and regularities.

In the 1990s, this situation became further aggravated because of substantial changes in demographic structures, swift advances in the globalisation process and disruptive technological innovations. Nowadays, the major issue seems to be the speed of contemporary changes, their difficult acceptance by the largest social groups, and their non-linear patterns. Unsurprisingly, most historical paradigms have become obsolete and traditional urban frameworks appear to be useless. Faced with this situation, the urban analyst is faced with serious difficulties in foreseeing the future; in fact, the future in urban planning has become a volatile issue.

According to Isserman (1985), planning has voluntarily sacrificed its visionary and idealist role and has abandoned its responsibility as a source of inspiration and ideas for what might be and what ought to be. This neglect of the future has several causes: (i) planning's orientation toward the social sciences and scientific method, and away from architecture and design; (ii) budget cuts and a climate that make idealism, vision, and inspiration seem anachronistic; (iii) the pressure of daily job requirements; and (iv) our scepticism and lack of confidence in our ability to think meaningfully about the future and to effect change.

Despite the decline of futures studies in traditional urban planning processes, they have found a place in new approaches such as strategic planning, developed in the 1980s for the purpose of transferring private sector planning methods and analytical tools to the urban arena. Strategic urban planning can be defined as a systematic, creative, participatory process that sets the basis for long-term integrated action, which defines the future development model, formulates strategies and courses of action to achieve this model, establishes an ongoing decision-making process and involves the local agents throughout the entire process (Fernández Güell, 2006). Therefore, implicit to the strategic plan definition is the need to formulate a future development model for the city, backed by a strategic vision. More recently, there have been several attempts to apply foresight studies to the urban and regional planning field, as set out below.

In brief, common sense seems to tell us that future studies should play a central role in urban and regional planning processes, or at least in strategic planning. However, there seem to be strong technical and ideological barriers which hinder urban planners from applying these tools. Given these premises, two central questions arise: Do we have articulate, reliable tools to perform futures studies in the urban and regional planning field? If they exist, can these tools help us to strengthen our planning processes?

In order to answer both questions, this paper presents a qualitative and user-friendly foresight method, adapted to urban and territorial planning contexts. The method has been applied in national, regional and local foresight exercises. Results allow us to test the method's resilience with decision-makers, identify major shortcomings and propose new improvements.

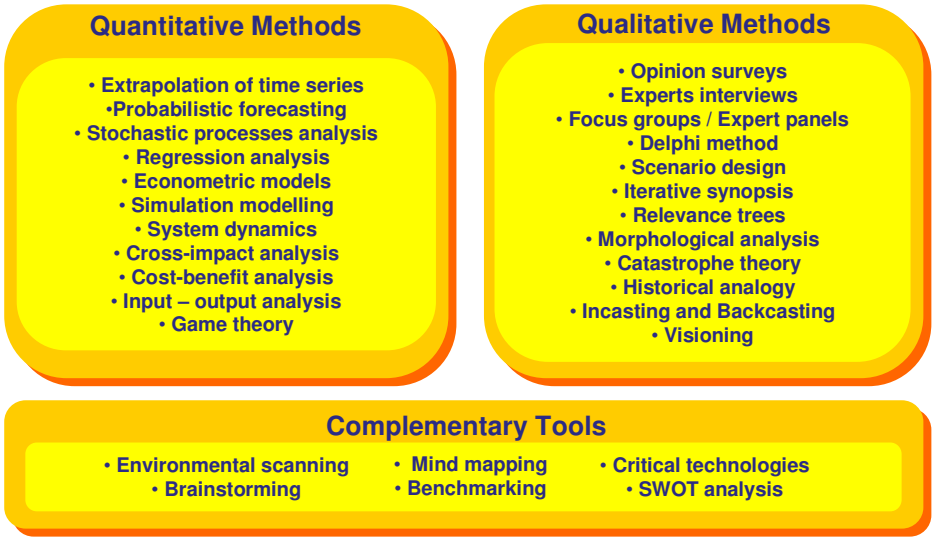
Methods and tools for futures studies

Nowadays, despite numerous and significant advances, it is still difficult to distinguish rigorous futures studies from plain science fiction exercises. This difficulty is due to the need of improving existing tools and develop new ones.

Nevertheless, there is an ample array of methods and tools which enable us to undertake futures studies in almost every field of knowledge.

There are different ways of classifying future methods (Armstrong, 2001; Barbieri, 1993; Jantsch, 1967), but for didactic purposes it is particularly useful to distinguish them as quantitative and qualitative methods. The main strengths and weaknesses of the best known methods and some of the complementary tools (**Figure 1**) are explained below.

Figure 1: Futures studies methods



a) Quantitative methods. This group corresponds to methods which carry out future predictions based on mathematical and statistical data treatment. These methods require numerical data about past and present situations, and use highly complex or simple algorithms. Objectivity is their main strength.

Major advantages:

1. Information can be handled in consistent and reproducible ways, combining figures and comparing data.
2. Changes in scale and ratio can be examined.
3. Data is organised systematically to produce trend extrapolations and other forecasts.
4. Results are displayed in the form of tables, graphs and charts, which facilitate communication.

Major limitations of quantitative methods:

1. They scarcely consider social and political variables.

2. Some urban phenomena are difficult to quantify.
3. Not everyone can work comfortably with statistical information.
4. Good quality data are often not available, or not sufficiently up-to-date.
5. Some methods are highly complex and difficult to use.

Quantitative methods are particularly effective when there is continuity between past, present and future situations, when information is available about past and present conditions, and when short and medium-term projections are required.

b) Qualitative methods. Under these methods, future predictions are based on intuitions and opinions of experts who posses reliable information and expertise about a specific issue. Subjectivity is their main value.

Major advantages of qualitative methods:

1. Complex and uncertain situations can be tackled.
2. They stimulate creative thinking, supported by experts.
3. They do not require quantitative indicators.

Major limitations of qualitative methods:

1. They cannot quantify future situations precisely.
2. They may generate excessively speculative future visions.
3. The quality of the analysis depends on the expert's wisdom.
4. They are not useful for anticipating short-term actions.

Qualitative methods are particularly appropriate when there are no past or present data, when structural changes are taking place and historical series are no longer valid, when there is great uncertainty, and when long-term predictions are required.

For urban planners, any of the above-mentioned methods can be valid for analytical and forecasting purposes. The choice of the method depends on a number of factors such as the study's objectives and scope, forecasting variables, data reliability, expected precision, time horizon, the technique's complexity, its cost, and the time limits. However, if we are working in the realm of strategic planning, qualitative methods are usually more appropriate for **en**visioning the future of the city. In this case, territorial foresight may be of great help because of its particular approach and attributes.

Definition and understanding of territorial foresight

In recent years, the term foresight, *prospectiva* in Spanish and *prospective* in French, has begun to be used widely in many fields to describe a series of approaches and tools which strive to improve the decision-making ability of public and private agents to tackle future challenges. Specialised publications (FOREN, 2001; IPTS, 2001) define **foresight** as a systematic, participatory process that generates knowledge about the future and creates medium- and long-term visions aimed at providing support for present decision-making and mobilising joint initiatives. Foresight thus not only produces studies about the future, but also involves the key agents of change and sets up expert networks for the purpose of formulating strategic viewpoints and configuring anticipatory intelligence.

Foresight is a relatively new knowledge area, which started to gain momentum in the United States after the Second World War. Driven by military planning needs in the 1940s and 50s, foresight studies gradually shifted into the technological and sociological arena during the 1960s. Europe and Japan then started to produce their own foresight studies in a continuous and systematic way. Consequently, nowadays in the foresight field it is possible to differentiate between the American, European and Japanese schools of thought.[1]

Since the 1990s, foresight studies have proliferated all over the world due to the establishment of numerous public and semi-public bodies in charge of forecasting technological, geopolitical, economic and social trends. Today, issues relating to climate change, territorial usage, transport and other areas are the focus of foresight studies. Foresight can thus be applied to any tree of knowledge in which long-term significant changes occur and for which possible future alternatives must be assessed.

Focussing specifically on the urban and regional planning field, we can define **territorial foresight** as a systematic attempt at long-term observation of the future of science, technology, the economy and society in order to identify the emerging trends that can be expected to produce the greatest changes in the city and the territory (Fernández Güell, 2006). Territorial foresight thus involves the implementation of the general principles of anticipation, participation, networking and visions at a small geographic scale in which proximity factors are decisive.

As with all innovative planning tools, it is important to assess the potential advantages and disadvantages of territorial foresight prior to its implementation. Some of the most noteworthy tangible **benefits** are the following:

[1] For more in-depth information about the historical evolution of futures and foresight studies, see Barbieri, 1993.

- It builds up plausible, coherent future visions.
- It systematizes the debate about future prospects and desires for socio-economic development amongst a wide variety of agents in a given territory.
- It helps to formulate viable, innovative territorial strategies that can reconcile the viewpoints of a wide range of territorial agents.
- It establishes priorities for future public and private initiatives.
- It forms expert networks to exchange knowledge about the studied issues.
- It disseminates the knowledge deriving from the foresight exercises amongst the major territorial agents and political decision-makers.

In contrast to traditional planning processes, which tend to have a limited sectoral scope for an integrated approach to future challenges, territorial foresight is based on participation methods in which the public and private agents' knowledge is shared to build up a vision of the possible future for a given territory. Foresight is thus complementary to the established planning processes, feeding into them new elements and values, empowering the local agents and providing legitimacy and efficiency to territorial strategies.

In spite of the above-mentioned advantages, territorial foresight has clear **limitations**. In the first place, foresight cannot tackle or resolve all the social, economic, environmental and political problems in a territory. Secondly, foresight cannot impose consensus where there are deep disagreements between the major agents in a territory. Thirdly, foresight is not a quick remedy for urgent problems, since it requires long analyses and the establishment of expert networks which do not produce immediate results. Finally, foresight demands certain policies that may be difficult to implement in emerging territorial institutions with little real power.

Essentially, the aim of territorial foresight is the multidisciplinary resolution or channelling of complex issues that have been maturing over many years and must be tackled with substantial work to make society aware about the changes required for the future. Initially, both metropolitan areas and urban regions seem to be particularly suitable geographic scales for foresight given that local agents have an immediate, sensitive perception of the impact of potential future changes on their territory.

Recent examples of territorial foresight

The methods used in territorial foresight are not "new" in the strict sense, as they have been under development and in practice for several decades, nor are they replacing the more conventional forms of forecasting and planning. Nevertheless, their use is gradually spreading and they are increasingly becoming a decisive part of some planning exercises. This trend is due to the fact that today's rapid social and technological changes are exerting pressure on the rational planning systems, whose precision and usefulness require long periods of relative stability. Foresight methods, on the other hand, work more in real time and are more agile in capturing the ongoing transformations of a given environment.

Apart from various national foresight programmes undertaken by some European governments, the European Union has been supporting several interesting territorial foresight initiatives. One is the "Practical Guide to Regional Foresight", drafted by the *Foresight for Regional Development Network* (FOREN, 2001), financed by the European Commission under the STRATA Programme. This Guide describes various foresight exercises undertaken during the 1990s in several regions.[2] The FOREN Guide includes an introduction to basic foresight concepts and takes a practical approach to implementing regional foresight.

A second group of initiatives has been carried out by the Institute for Prospective Technological Studies (IPTS)[3]. The IPTS is a public body under the auspices of the European Commission, which provides strategic support for the development of EU policies regarding technology, economy and society. Since the mid 1990s, the IPTS has been committed to producing different types of foresight studies at the national level, but more recently it has broadened these studies to the regional level. According to the IPTS staff (Gavigan and Scapolo, 2001), there are ample opportunities to apply foresight at the regional scale, which will probably stimulate the development of different tools to the ones used at the national level.

The third experience was conducted by the European Spatial Planning Observation Network (ESPON)[4], a public organisation established in 2000 under the European Commission's Interreg III Programme. Its central aim is to build up a scientific community in the European Union that can support urban

[2] The FOREN Guide included nine case studies: West Midlands (UK), Catalonia (Spain), Uusimaa (Finland), Limousin (France), Province of Liege (Belgium), Nord-Pas de Calais (France) Lombardy (Italy), Baltic String (Denmark, Sweden and Germany), and North-East England (UK).

[3] The Institute for Prospective Technological Studies (IPTS), created in 1994, is presently located in Seville, Spain. It is one of the seven scientific institutes of the European Commission's Joint Research Centre (JRC).

[4] The European Spatial Planning Observation Network (ESPON) is located in Luxembourg. It is a network of observatories from 27 European countries.

development policies and promote territorial planning. In 2007, ESPON produced "Spatial scenarios for Europe", which contemplated three alternative European scenarios for the 2030 horizon. The major objective of this foresight study was to investigate the likely territorial impact of socio-economic and environmental challenges on the territorial structure and balance of Europe.

In Spain, there have been three recent foresight exercises in which the present author has been involved directly. In the first one, "Scenario design for social behaviour regarding sustainable development"[5], three scenarios were developed to foresee potential territorial impacts of changing social attitudes toward the concept and practice of sustainable development on the 2025 horizon. Scenario implications were defined for social, economic, territorial and governance models in Spain. Nearly 30 experts were interviewed and invited to participate in several focus groups.

A second foresight study was undertaken in 2006-2007 as part of a larger research project focussed on the sustainability of the Madrid Region[6]. At that time, Madrid was a highly complex, extended and dynamic metropolis, which was becoming one of the leading urban centres on the European continent. However, reasonable doubts were raised about the long-term sustainability of its development model. Within these premises, this foresight exercise aimed to outline a trend scenario for the Madrid Region in 2025 in order to evaluate the sustainability of the present development model when extrapolated into the future. Several personal interviews were conducted with regional and local planning agents from the public and private sectors.

Finally, a third foresight experience has been performed at the beginning of 2009 in Burgos, a city in Spain's north-western Castilla y León Region.[7] Burgos has almost 200,000 inhabitants and it has been a thriving industrial and logistics centre for the last 20 years. Given the present economic recession and the emergence of new challenges, Burgos decided to review its strategic plan and evaluate its competitive position. With this purpose, a foresight exercise has been carried out to foresee alternative development scenarios for the 2015 horizon. Scenario implications were defined in eight city areas: social fabric, education systems, industrial sectors, service sectors, transport systems, housing and community facilities, urban and regional planning, public services and urban

[5] This study was carried out in 2007 by Fundación OPTI, a Spanish non-profit organisation under the Ministry of Industry, (which is fully dedicated to make) **devoted to** technological and socio-economic foresight studies.
[6] This research project was financed by a joint grant from the Madrid Regional Government and the Madrid Polytechnic University (UPM) awarded to the UPM's Sustainable Architecture and Urbanism Research Group (GIAU+S).
[7] This project was financed by the Asociación Plan Estratégico Ciudad de Burgos, a non-profit association responsible for managing the strategic plan, composed of more than 60 public, private and non-profit organisations in the city.

governance. More than 50 local experts participated in eight thematic expert panels.

Adapting foresight methods to urban planning needs

While foresight is being widely used in the realm of economic and technology policy, this set of qualitative tools is seldom applied in urban and regional planning. Novelty, ignorance or lack of professional interest may partially explain this situation, but there may also be several shortcomings related to methods, analytical tools and processes which hinder the full development of territorial foresight.

The potential application of territorial foresight as a key analytical tool for the reinforcement of urban planning processes was a central issue in all three Spanish experiences. Results and lessons from the three exercises have provided interesting insights into the advantages and disadvantages of adapting foresight methods to an urban context. These findings are synthesised in a working methodology, which is presented below.

Urban planners who wish to use foresight techniques in a city context must first choose the most appropriate method. As a general rule, most of today's large and medium sized cities operate in complex and dynamic territorial contexts, and they are subject to high uncertainties. If we are supposed to formulate long-range development strategies in this type of urban context, then the chosen foresight method should satisfy the following features:

- ***Qualitative***. A qualitative method should facilitate the analysis of all types of change trends, including issues for which we lack quantitative indicators, thus making the analysis more flexible and creative.
- ***Causal***. A causal method should analyse urban changes resulting from the effect of certain causes, which might or might not be controlled by the social and economic agents operating in the territory.
- ***Systemic***. In line with the above feature, and also in response to the complexity of the problem, the method should use a systematic approach in which interrelations between the components of the territorial system would be sought.
- ***Exploratory***. In contrast to regulatory methods, which begin with a preliminary vision of a desirable future and move backwards towards the present situation, an exploratory method should be chosen to enable us to look towards the future.

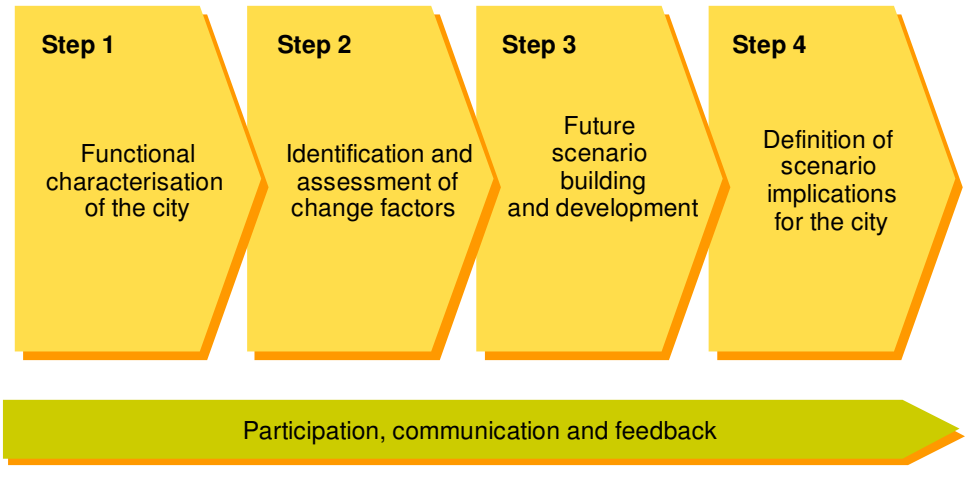
- ***Participatory***. Since the chosen method is a qualitative technique based on expert judgement, solid participation involving local agents will be necessary to support the research findings.

Amongst the foresight tools that may match the former attributes, scenario design seems to be an attractive, effective approach for formulating urban visions and strategies. The validity of scenario design, a technique used widely for almost 50 years, has been documented by several authors (*Godet*, 2001; *Heijden*, 1996; *Schwartz*, 1991). Scenario design may be defined as a tool for arranging perceptions of the future and thus help to shape an outlook with a perspective in a world of great uncertainty (*Fernández Güell*, 2004). This foresight technique is eminently qualitative, it combines intuition and rational analysis, and it usually requires the collaboration of a group of experts. For most foresight practitioners, scenario development is the archetypal product of future studies because it is deeply creative and can handle uncertainty.

Presentation of the scenario methodology

The chosen scenario method was organised sequentially in four steps (see **Figure 2**): (1) functional characterisation of the city; (2) identification and assessment of change factors; (3) (building) scenario building and development; and (4) definition of scenario implications for the city. This approach obviously

Figure 2: Scenario design methodology

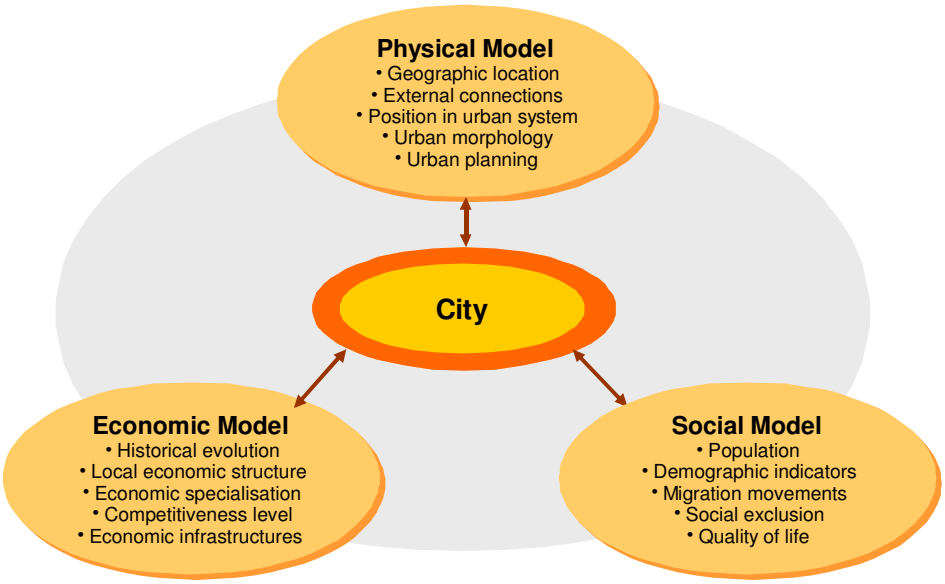


had to rely on an ongoing process of participation and evaluation by public and private agents operating in the analysed territory.

The method is explained briefly below, with a discussion of the main lessons learned.

Step 1: Functional characterisation of the city. The method's first task is to gain a broad understanding of the physical, economic and social models which have guided recent urban development. Each characterisation model unfolds into a number of topics (see **Figure 3**), which should be properly covered so as to understand the development process of the analysed city. The recommended tools for this step are mainly research of secondary sources and interviews with city experts.

Figure 3: Functional characterisation of the city



Lessons learned from Step 1. A functional system that explains the mechanics of a city is usually regarded as a good approach for dealing with highly complex issues. It helps the analyst to integrate thematic trends into urban development, it facilitates expert panels, and it helps participants in the foresight exercise to focus on specific analysis.

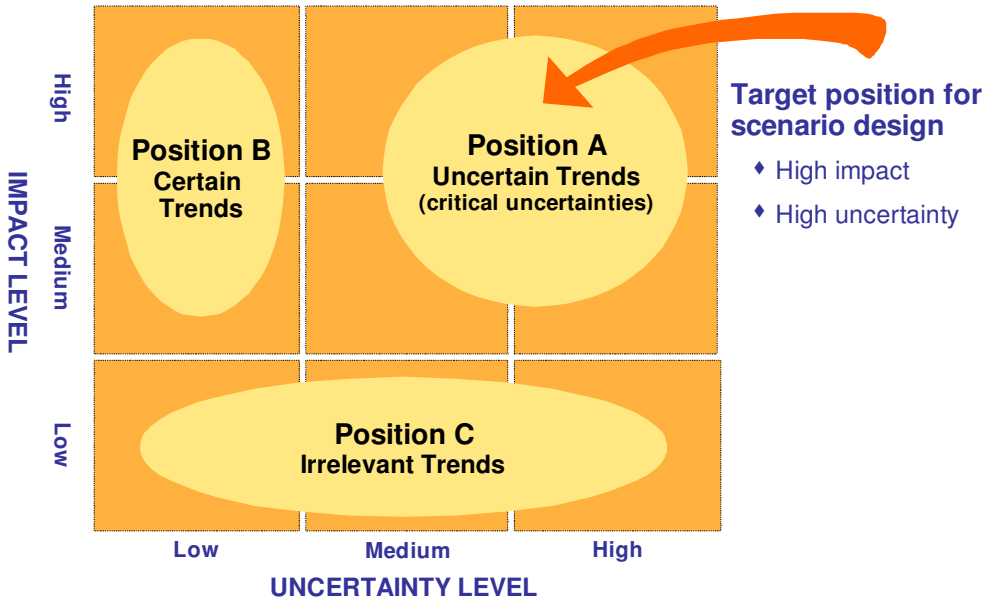
If mathematical models are to be used in the foresight exercise, then functional relations amongst the three development models should be quantified in this step. Nevertheless, beware that mathematical algorithms are time-consuming and are made up of static components; on the contrary, cities tend to change in unpredictable and unforeseeable ways.

Step 2: Identification and assessment of the change factors. The method's second step pursues the identification of change factors that can have significant effects on the future city's development. This analysis should be undertaken by

expert panels organised by thematic areas. These panels are to identify and assess the main change trends using group dynamics techniques in which consensus are sought within their group.

This task's central goal is to identify the largest possible number of relevant geopolitical, demographic, cultural, economic, technological and governance trends that may affect the city. Once the trends are identified, they must be evaluated according to the impact-uncertainty matrix (see **Figure 4**).

Figure 4: Impact-uncertainty matrix



In this matrix, three major positions are clearly identified:

- *Position A: Uncertain trends (critical uncertainties).* Trends with high-medium levels of impact and uncertainty. Trends located in this position foster alternative scenarios because they represent critical uncertainties about the city's future.
- *Position B: Certain trends.* Trends with high-medium impact levels, but low uncertainty levels. These type of trends foster inertial scenarios because there is little doubt about their occurrence.
- *Position C: Irrelevant trends.* Trends with low impact on the city. Regardless of their uncertainty level, these trends are irrelevant to the scenario building process.

This methodological step is critical for obtaining solid, plausible foresight results. For this reason, special attention is paid for adequately documenting trends in a form that can be evaluated, reproduced and used by others.

Lessons learned from Step 2. As a general rule, experts have little problem in identifying change trends and evaluating their impact levels; however, difficulties tend to arise when they are asked to assess the degree of uncertainty. This is because most decision-makers feel uneasy about projecting present events into a long time horizon and tend to confuse present certainties with future uncertainties. At this point, active intervention by the research team is required to clarify concepts among participants. Overall, the so-called "impact-uncertainty matrix" is extremely useful for focusing debate and presenting analysis results.

Additional tools can be used in this step to increase the method's sophistication. First, a Delphi Study[8] can be carried out among a broad range of experts to identify and evaluate urban change factors. The major drawback of this method is that it is expensive and time consuming. Second, multivariate statistical analysis[9] may help to cluster change factors to detect synergies, however, this analysis requires reliable and homogeneous historical databases, which is difficult to get in the urban realm. Third, using a cross-impact matrix[10] can bring to light interactions among change factors and therefore an estimate of their likelihood. However, given the complexity of the subject matter, it is usually impossible to validly determine the impact of all change factors on the others.

Step 3: Future scenario building and development. The third step focuses on the construction and development of various scenarios which represent, in a consistent and plausible form, alternative futures in which a city may operate in the defined time horizon. Scenarios are built on the basis of the major forces for change that may affect a city. These forces are usually articulated around two axes, which give rise to four distinct scenarios.

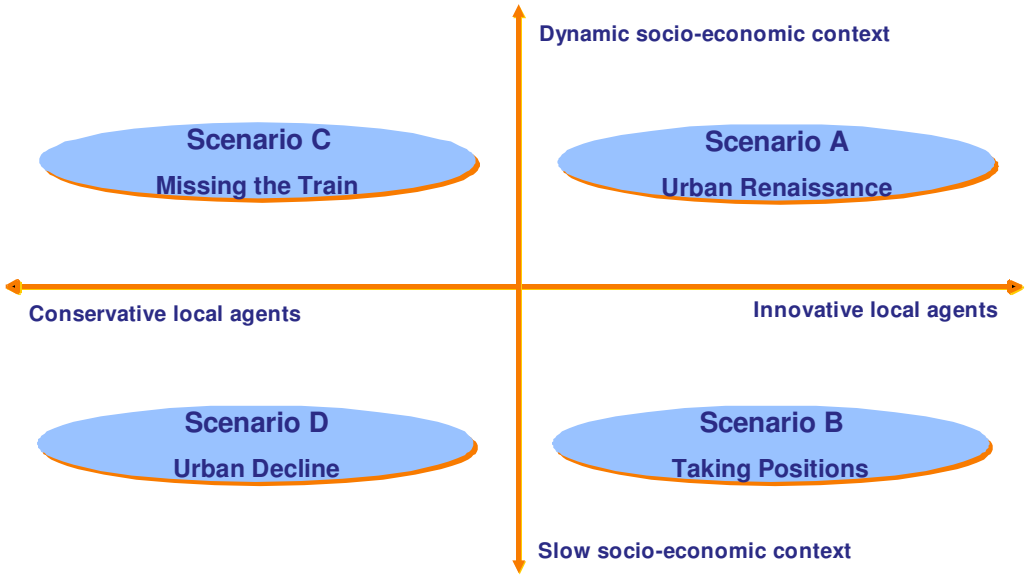
Figure 5 shows two scenario axes chosen for a fictitious city:

- *Vertical axis*: Evolution of the socio-economic context in which a city operates. This axis encompasses all future uncertainties relating to the demographic structures, the economic model, and the emergence of technological innovations.

[8] A Delphi Study is a foresight method that strives to gain systematic and quantified consensus on a complex issue amongst a large number of experts.
[9] The purpose of multivariate statistical analysis is to understand the underlying structure of multiple variables, and to combine them in homogeneous groups in order to form new variables.
[10] A cross-impact matrix is a square matrix in which each change factor has been assigned a row and a column. The matrix cells are filled with the impacts of one trend (the row) on another (the column). A cross-impact analysis calculates the probabilities of alternative options based on rigorous mathematical procedures.

- *Horizontal axis*: Evolution of local agents' behaviour. This axis includes the level of local entrepreneurship, the openness of local society, local lifestyles, and dominant socio-cultural patterns.

Figure 5: Building scenarios



In a full-scale foresight exercise, scenarios are fleshed out in literary form, describing in detail the economic, social, technological and environmental context in which they operate. A brief explanation of the example's scenarios follows.

- *Scenario A: Urban Renaissance*. The city evolves in a very dynamic socio-economic context, generating profound urban transformations, which are assumed by highly innovative local agents. The result is a very dynamic city, which tends to exceed its growth pattern and is able to (take advantage of) grasp development opportunities.
- *Scenario B: Taking Positions*. In this scenario, the city operates in a slow socio-economic context, but local agents are highly innovative and entrepreneurial. Since local agents cannot fulfil their expectations due to unfavourable conditions, they prepare themselves for the next upturn and try to reinvent the city.
- *Scenario C: Missing the Train*. The city enjoys a very dynamic socio-economic context, but local agents show conservative attitudes and lack an entrepreneurial spirit. Consequently, the city lags behind its competitors because local decision-makers do not wish to undertake profound urban transformations.

- *Scenario D: Urban Decline*. This a typical pessimistic scenario in which the socio-economic context is unfavourable and local agents are unable to respond to urban challenges. In this case, the city may stagnate or enter an irreversible decline.

Note that scenarios should not be used as an exact prediction of what is going to happen in the future. On the contrary, they simply depict exploratory hypotheses about what may occur in the study time frame.

Lessons learned from Step 3: The presentation of fully fleshed-out scenarios is usually well received by most local **business and political** decision-makers. Media professionals and informed citizens also enjoy the literary outcome of this foresight exercise. On the other hand, agents from universities and urban planning departments tend to be more critical of the results when they perceive that scenarios are too general and miss quantitative and graphical support. In fact, scenarios can be fleshed-out to any degree, including numerical and graphic analysis, depending on the availability of time and economic resources. In any case, most local agents recognise the great potential of the scenario technique for communicating findings from sophisticated analysis to the general public.

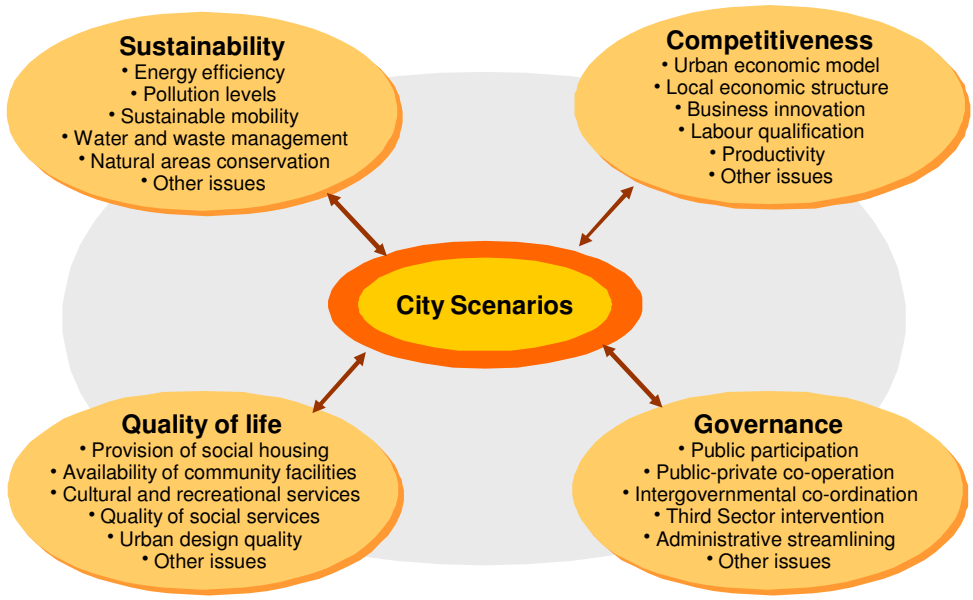
Step 4: Definition of scenario implications for the city. In the method's last step, the potential implications of each scenario are defined for the city's social fabric, economic base, environmental system, and governance model. During this stage, personal interviews with local decision-makers and expert panels should be held in order to define and contrast the scenario implications.

Figure 6 shows some issues in which scenario implications should be explored. Brief hints are provided on the implications of each scenario in our fictitious example.

- *Implications of Scenario A (Urban Renaissance)*. The city will grasp development opportunities using its broad-ranging capacities and resources. Local society will be able to attract a wide variety of social and cultural profiles. The economic base will be innovative and entrepreneurial because of its exposure to rapid changes and fierce competition. Quality of life will be high in order to retain professionals and business. The city will have an advanced governance model.
- *Implications of Scenario B (Taking Positions)*. Despite the economic downturn, in this scenario the city has highly capable human resources and significant social capital. The economic model will undergo a profound re-engineering process to improve its competitiveness.

Public services will guarantee population basic needs. Local governance will be conducted by strong participatory processes.

Figure 6: Scenario implications for the city



- *Implications of Scenario C (Missing the Train).* Conservative attitudes at the local level will retard socio-economic development initiatives. Local society will be rather homogeneous and find it difficult to attract highly specialised professionals. Quality of life will be measured by consumption levels, and public services will be restricted and outsourced to the private sector. The economic base will rely on traditional, mature sectors, (being highly exposed) vulnerable to swift changes. Local participation processes will be scarce and purely cosmetic.
- *Implications of Scenario D (Urban Decline).* In this context, the city will lack the resources required to overcome the crisis and grasp development opportunities. Local society will react against cultural diversity, shutting itself off to new ideas and lifestyles. The local economy will weaken and unemployment will rise.

In a full-scale foresight exercise, this analysis is obviously deeper and reinforced with all kinds of indicators.

Lessons learned from Step 4: Decision-makers sometimes find it hard to define implications for future scenarios because they do not immediately foresee how the broad future context will affect their daily operations. To overcome this

problem, the territorial functional system created in Step 1 is of great help because it structures the questionnaire and focuses the interviewee on critical issues. Compared to other foresight studies that plainly display change factors and scenarios, this step provides additional value to the final output.

Some support tools may be of great help in determining implications during the interviews process. Geographical Information Systems and other graphic tools can be very useful for showing the spatial implications of socio-economic trends. Likewise, the application of simple quantitative models can strengthen the explanation of certain territorial processes. In brief, implication analysis may be the right step to make use of software in shaping scenarios.

Main findings

This paper presents a territorial foresight method based on scenario design. This method has been recently applied in Spain in three foresight studies conducted by the author at the national, regional and local levels. While limited, this sample of studies provides interesting findings about the potential and feasibility of foresight tools for the urban and regional planning practice.

Firstly, a qualitative and process-oriented foresight method was designed for urban and broader territorial contexts. The method is user-friendly for regional and local decision-makers and quite manageable for technicians. Although the process-oriented approach is emphasised, the method generates a tangible product –a set of scenarios–, which people can easily refer to and understand. The exercise takes between six to eight months to complete, a reasonable time frame considering the public agents' expectations and economic constraints.

Secondly, the three exercises verified that foresight can provide valuable, specific contributions to the strategic planning process in cities and regions. As a matter of fact, foresight is fairly complementary to strategic planning because it stimulates participation, generates future scenarios, emphasises strategic models over tactical actions, identifies territorial challenges, fosters on-going indicative planning versus normative planning, and is not restricted by political-administrative boundaries.

Thirdly, the method's acceptance by regional and local agents tends to differ, as mentioned in Step 4. Foresight is particularly welcomed by agents familiarised with strategic planning, while it is regarded with more disdain by traditional urban planners. This finding may reflect planners' greater comfort with projections for specific issues such as traffic generation, population growth and housing demand than the design of a broad, elusive future.

Fourthly, most participants perceive foresight as an interesting input to help decision-making in the spatial planning process. However, in order to effectively foster policy decisions, foresight must be properly incorporated into the planning process, which is not yet the case in Spain. Overall, there seems to be consensus in the recognition of foresight as a powerful tool for territorial knowledge dissemination and the establishment of expert networks, which altogether could help to improve a territory's governance.

Fifthly, a series of shortcomings are detected, several improvements for which are suggested in this paper. Quantitative and graphic tools should be included to reinforce and clarify the analysis. More information about the generation of change factors is required. Early warning indicators to predict a change should be established. More accurate impact assessment of socio-economic phenomena in territorial systems is needed.

The proposed method could obviously be further enriched by adding more elaborate processes and techniques, but we should not be obsessed with technical sophistication[11]. Accurate data compilation and careful scenario creation are more important for forecasting success than the implementation of complex mathematical models. Quantitative analysis can lend coherence and credibility to scenario exercises, but modelling tools should support that process, not drive it. Despite its evident shortcomings, a foresight method like the one proposed here should not loose its eminently qualitative nature.

Therefore, two major questions remain to be answered by future research and professional practice. To what extent and at what cost can additional sophistication provide additional value to foresight methods? Can local and regional governments afford to build strong databases to support territorial foresight?

Finally, there are motives for thinking optimistically that Spain and most other European countries have reached sufficient maturity to apply territorial foresight. Firstly, national and international bodies with authority in sectoral and territorial planning issues are increasingly involved in foresight demonstration projects. Secondly, European countries already have a large corpus of innovative planning experiences, such as strategic plans and Agenda 21. Thirdly, there is an obvious growing demand by the average citizen for improvements to the current governance models through participation processes, inter-government co-ordination and public-private co-operation. Fourthly, we have spent over

[11] *Craig et al*. (2002) make a series of interesting observations about the successful application of forecast methods, which can be extrapolated to territorial foresight: (1) document assumptions; (2) link the model design to the decision at hand; (3) beware of obsession with technical sophistication; (4) watch out for discontinuities and irreversibility; (5) do not assume fixed laws of human behaviour; (6) use scenarios; (7) use combined approaches; (8) expect the unexpected and design for uncertainty; (9) communicate effectively; (10) be modest.

three decades moving in a highly dynamic context in which one change quickly overtakes another, and sometimes these transformations cause significant breakdowns in the established order.

Nevertheless, before being fully accepted in the planning field, foresight must first overcome a number of challenges: improved rigour in its methods and analytical tools to gain more credibility with decision-makers; refined participatory processes to facilitate its full integration into the planning process; and inclusion in the strategic planning process in order to have a friendly operational framework. Eventually, foresight will arouse less technical scepticism.

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