Contents

Background and objectives

The City of Burgos is part of Castilla y León, a region located in the north-western part of Spain (see Figure 1). The city treasures a rich and extensive historical memory that traces back to its medieval origins. Nowadays, Burgos has almost 200.000 inhabitants and it is a thriving industrial and logistics centre, which benefits from its favourable geographical position between two major industrial poles in the Iberian Peninsula: Madrid and the Basque Country.

Figure 1: Geographical location of Burgos

At the beginning of 2008, Burgos development growth came to a halt due to the financial and real estate crisis which stroke the Spanish economy. Given the intensity of the economic recession and the emergence of new global and local challenges, Burgos decided to review its strategic plan and evaluate its competitive position

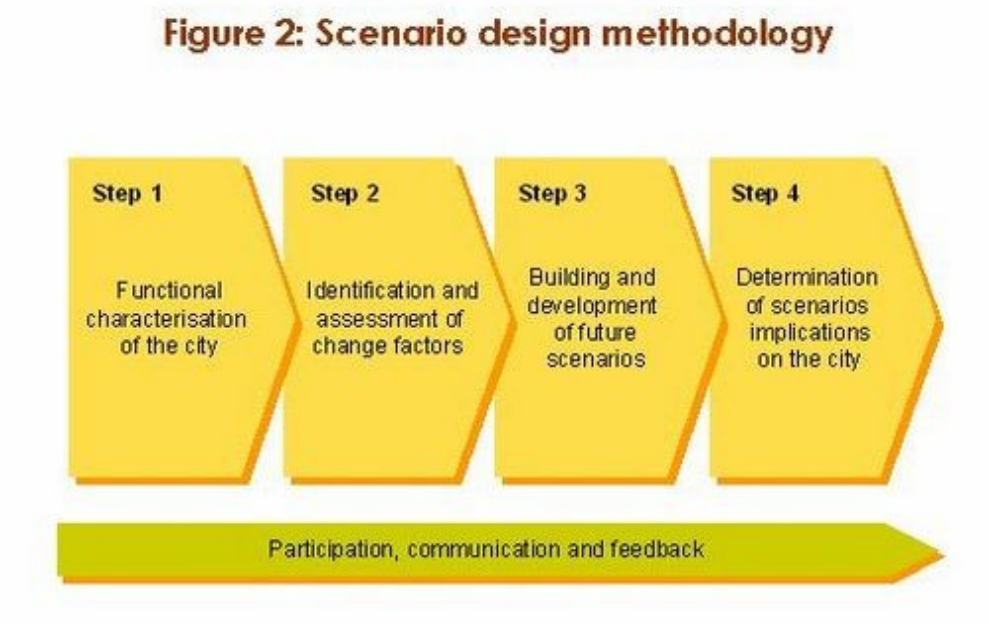
under the new context. In addition, the city presented his candidacy for becoming a European Cultural Capital in 2016, hence it was compelled to formulate a coherent cultural strategy and prepare a strong marketing campaign. For all these reasons, the city considered an appropriate time to carry out a foresight exercise in which alternative future scenarios would be developed for the 2016 horizon.

In brief, the foresight exercise objectives were as follows:
1) Explore Burgos? possible development evolution and competitive position at the global and national scale in the year 2016.
2) Evaluate the impact of geopolitical, economic, social and technological changes in Burgos? future development.
3) Identify development opportunities offered by the completion of new transport infrastructures and public cultural facilities in the city and its environs.
4) Review Burgos Strategic Plan under the new future scenarios.
5) Stimulate a public debate and a strategic thinking process about Burgos? future development model.
In order to achieve the stated objectives, a careful assessment of foresight tools was undertaken so as to choose the most adequate method for the Burgos case.

Methodology

Wishing to use foresight techniques in a city context, first of all the urban planner has to select the most appropriate method. As a general rule, most large and medium size contemporary cities operate in complex and dynamic territorial contexts with numerous stakeholders, which are subject to high uncertainties. If we are supposed to formulate long-range development strategies in that type of urban contexts, then the chosen foresight method should satisfy the following features:

- **Qualitative**. A qualitative method will allow to analyse all types of change trends, including issues for which there are no quantitative indicators, thus making the analysis more flexible and creative.
- **Causal**. A causal method will analyse urban changes as a result of the effect of certain causes that may or may not be controlled by the social and economic agents operating in the territory.
- **Systemic**. In line with the above feature, and also responding to the complexity of the problem, the method should use a systematic approach in which interrelations between the components of the territorial system will 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, it should be chosen an exploratory method that permits to look forwards from the present towards the future.
- **Participatory**. Since the chosen method is a qualitative technique based on experts? judgment, it will be necessary to establish a solid participation process with local agents to support research findings.



From all the foresight tools that may match the former attributes, scenario design appeared to be an attractive and effective approach for formulating visions and strategies in an urban context. Based on prior experience, scenario design was considered appropriate because of four reasons: (1) it takes into consideration the complexity of changes; (2) It expresses alternative visions about the future; (3) it enhances the perspective of local decision-makers; and (4) it facilitates the making of plans to confront future challenges.

A scenario 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. 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 it is capable of handling uncertainty.

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 and development of scenarios; and (4) determination of scenarios implications on the city. This approach obviously had to rest on an ongoing process of participation and evaluation by public and private agents operating in the City of Burgos.

Project organisation and execution

The foresight project was hired and financed by the Asociación Plan Estratégico Ciudad de Burgos (Burgos Strategic Plan Association), a non-profit association responsible of managing the strategic plan and composed by more than 60 public, private and non-profit organisations of the city. The project was granted to José Miguel Fernández Güell, University Professor, specialised in urban and regional planning as well as in strategic planning and foresight studies.

Project cost. The total assigned budget for the project was closed to 45.000 Euros, which included consulting fees, internal staff work-time and organisation expenses. All funds were provided by the Association.

Work calendar. Although the original work calendar comprised six months, the project was completed in nine months due to administrative delays and changes in the participatory process.

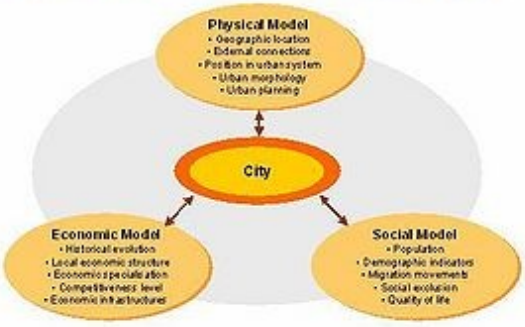
Management structure. The project?s execution was co-ordinated by the Association Manager and an Strategic Plan Commissioner. The technical work was executed by an external consultant and an Association?s senior staff member, all together with the support of the Association?s administrative staff.

Participation process. More than 60 local experts participated in the foresight exercise. The participation process was organised in two major rounds. The first round was structured in three panels of experts ?Social, Economy and Culture?, which were in charge of identifying and assessing future change factors. A second round was organised around eight experts panels, which determined scenarios implications for eight city areas: social fabric, educational systems, industrial sectors, service sectors, transport systems, housing and community facilities, urban and regional planning, public services and urban governance. In between the first and second participation rounds, several personal interviews were carried out with various local decision-makers to contrast the plausibility and coherence of the scenarios.

Project development and lessons learned

The method used for designing the Burgos Scenarios is explained below in brief detail. The main lessons learned along the process are further discussed in each step.

Figure 3: Functional characterisation of the city



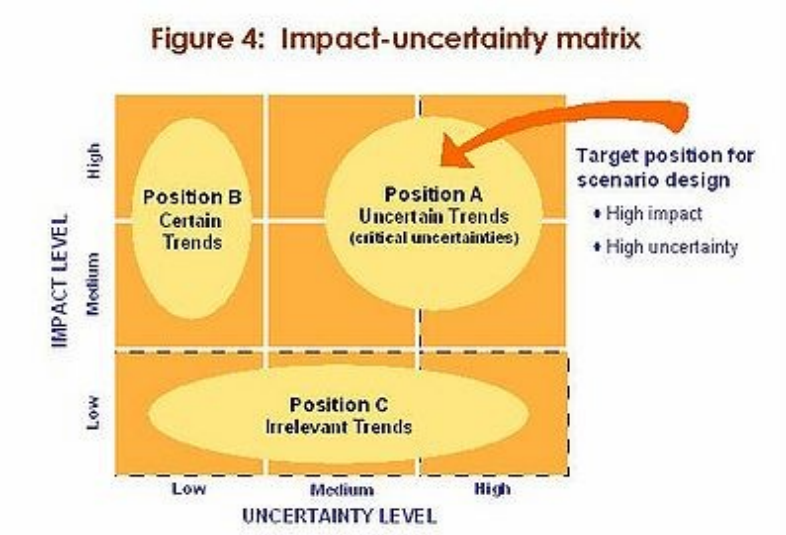
Step 1: Functional characterisation of the city.

The method?s first task was geared to gain a broad understanding of the physical, economic and social models which have guided recent urban development in Burgos. Each characterisation model was unfolded in a number of topics (see Figure 3) that were properly covered so as to understand the development process of the city. The main tools used were research of secondary sources and interviews with city experts.

Lessons learned from Step 1. Developing a functional system to explain the mechanics of the City of Burgos was evaluated as a good approach for dealing with highly complex issues. It helped the analyst to integrate thematic trends into urban development, it facilitated the building of experts? panels, and it helped participants in the foresight exercise to focus on specific analysis. The functional system of Burgos was described in qualitative terms; if mathematical models had been used, then functional relations among the three development models should have been quantified.

Step 2: Identification and assessment of change factors

The method?s second step pursued the identification of change factors that might have significant effects on the future city?s development. This analysis was undertaken by expert panels organised by three thematic areas ?Economy, Society and Culture. These panels were to identify and assess several geopolitical, demographic, cultural, economic, technological and governance change trends, using group dynamics techniques in which consensus was sought within their group. Once the trends were identified, they were evaluated according to the impact-uncertainty matrix. In this matrix, three major positions were clearly identified (see Figure 4):



- *Position A: Uncertain trends (critical uncertainties).* It corresponds to trends with high-medium impact and uncertainty levels. Trends located in this position nurture alternative scenarios because they represent critical uncertainties about the city?s future.
- *Position B: Certain trends.* It includes trends with high-medium impact levels, but with low uncertainty levels. These type of trends nurture inertial scenarios because there are little doubts about their occurrence.
- *Position C: Irrelevant trends.* It encompasses trends with low impact level on the city. Regardless of their uncertainty level, these trends are no relevant for the scenarios construction process.

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

Lessons learned from Step 2 As a general rule, experts did not have many problems in identifying change trends and in evaluating their impact levels on the city; however, difficulties tended to arise when they were asked to assess the degree of uncertainty. This was so because most decision makers felt uneasy about projecting present events into a long time horizon and tended to confuse present certainties with future uncertainties. At this point, active intervention from the project team was required to clarify concepts among participants. Overall, the so-called ?impact-uncertainty matrix? was extremely useful to focus discussions and present analysis results.

Additional tools can be used in this step to increase the method?s sophistication. First, a Delphi Study can be carried out among a broad range of experts to identify and evaluate urban change factors; its major drawback is that is an expensive and time consuming method. Second, multivariate statistical analysis may help in clustering

change factors to detect synergies among them; however, this analysis requires reliable and homogeneous historical data bases, something difficult to get in the urban realm. Third, using a cross-impact matrix would allow discovering interactions among change factors and therefore estimating their probability of occurrence; however, given the complexity of the subject analysed it is almost impossible to validly determine the impacts of all change factors against the others.

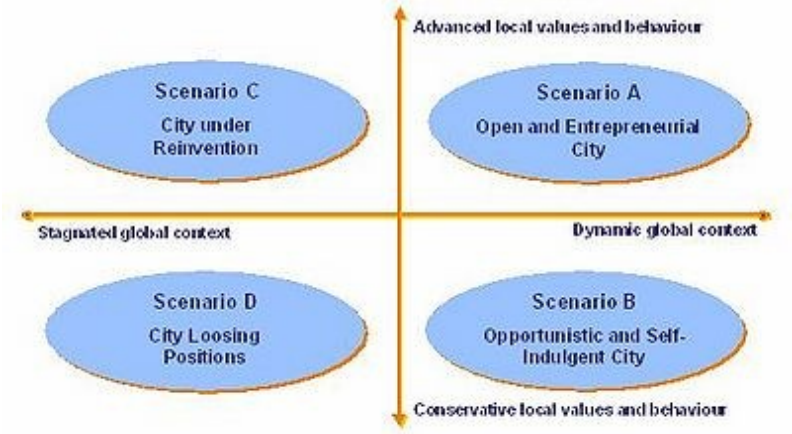
Step 3: Building and development of future scenarios

The third step focused on the building and development of various scenarios that represented, in a consistent and plausible form, alternative futures in which the City of Burgos might operate in the year 2016 horizon. Scenarios were built upon two axis, which articulated all the critical uncertainties (see Position A in the impact-uncertainty matrix) to be faced by the city in the near future:

- Horizontal axis: It included all critical uncertainties regarding the evolution of the economic model, the emergence of technological innovations, the environmental situation, and the availability of energy resources.
- Vertical axis: It encompassed all future uncertainties related to the evolution of family values, socio-demographic structure, socio-cultural behaviour, and business values.

The crossing of the two axis gave place to four distinctive scenarios, which are briefly described below (see Figure 5).

Figure 5: Burgos scenarios



In the foresight exercise, scenarios were fleshed out in literary form, describing in full detail the economic, social, technological and environmental context in which they were supposed to operate. Hereby, only a brief description is provided of the Burgos scenarios.

- ***Scenario A: Open and Entrepreneurial City.*** This scenario takes place when the economic and technological context is favourable to Burgos and when local values and behaviours are socially responsible, receptive to innovations and inclined to impulse new social and economic activities. Under this context, the city is capable of taking advantage of change opportunities because it enjoys a very dynamic social fabric.

- ***Scenario B: Opportunistic and Self-Indulgent City.*** This scenario is displayed in a dynamic context with abundant resources, but at the same time the local community is dominated by conservative social values and it is not inclined to accept innovative approaches and foreign cultures. Under these circumstances, Burgos society is unconscious about future challenges and reluctant to transform its development model.
- ***Scenario C: City under Reinvention***. According to this scenario, the global context is stagnated, meanwhile the local community is decidedly open to innovative ideas and foreign cultures. This scenario represents the failure of the past socio-economic model, while the local society counteracts and tries forcefully to build an alternative development model.
- ***Scenario D: City Loosing Positions.*** This last scenario is clearly unfavourable for Burgos because it takes place in a global context marked by the lack of resources and at the same time local stakeholders are unconcerned or incapable of transforming their development model.

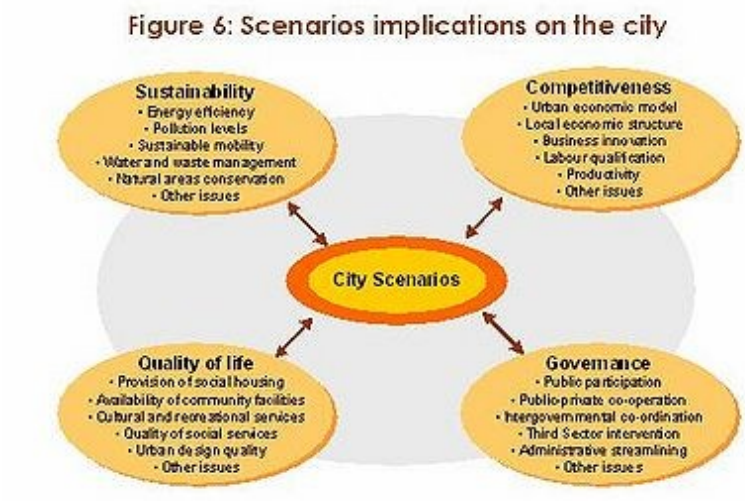
Lessons learned from Step 3. The presentation of full fleshed-out scenarios was well received by most local decision makers coming from the business and political side. Media professionals and informed citizens also enjoyed the literary outcome of this foresight exercise. On the contrary, agents from universities and urban planning departments tended to be more critical with results when they perceived that scenarios missed quantitative and graphical support. In any case, most local agents recognised the great potential of the scenario technique for communicating to the general public findings from sophisticated analysis.

At this point, it should be remembered that scenarios can be fleshed-out to any degree, including numerical and graphical analysis, depending on the availability of time and economic resources. Nevertheless, scenarios should not be taken as an exact prediction of what is going to happen in the future; on the contrary, scenarios simply represent exploratory hypotheses about what may occur in the time horizon considered in the study.

Step 4: Determination of scenarios implications on the city

In the method?s last step, potential implications of each scenario were determined on the city?s social fabric, economic base, environmental system, and governance model (see Figure 6). During this stage, personal interviews with local decision-makers and expert panels were held in order to determine and contrast scenarios implications. A brief recount of scenarios implications is shown below.

Figure 6: Scenarios implications on the city



- ***Scenario A: Open and Entrepreneurial City.*** To prosper in this scenario, Burgos should count with powerful capabilities and resources to take advantage of most development opportunities. The economic local model would be integrated, diversified and sustainable in the long run. Industrial and service sectors would be based in high added-value activities. The City Council would plan and manage the municipality and its environs with flexibility and farsightedness. The local governance model would be modern, effective, transparent and highly participatory.
- ***Scenario B: Opportunistic and Self-Indulgent City.*** Under this scenario, Burgos would react shyly to new development opportunities, while local stakeholders would act rapidly and opportunistically when it comes to making profits in traditional well-known activities. The city?s productive structure would be centered in mature sectors which would stand for their production capacity, but not for their innovative impulse. Urban development would be loosely controlled so that the urban pattern would be spatially dispersed and far from satisfying basic sustainable criteria. Public Administrations would be reluctant to implement innovative governance models which promote social change and participation.
- ***Scenario C: City under Reinvention.*** This scenario implies that Burgos would have large doses of innovation and creativity to take advantage of the scarce opportunities that may enable the city to change its development model. Under this context, the city?s industrial base would be diversified by the emergence of innovative small and medium enterprises oriented to export goods. Just as well, the service sector would be reinforced by the appearance of new business linked to tourism, knowledge, culture and leisure sectors. Urban planning efforts would be focused in rehabilitating the old city instead of promoting new real estate development. This scenario would require effective and efficient Public Administrations, capable of stimulating intense and sophisticated participation processes as well as coordinating policies among different public bodies.
- ***Scenario D: City Loosing Positions.*** This scenario places Burgos in a paralysis position which prevents the city for facing challenges and benefiting from development opportunities. In this context, the local population would decrease, age and impoverish itself. The local economy would decline because it would depend on low added-value activities and it would not encourage entrepreneurs and innovative ventures. Urban development in Burgos outskirts would stop, the city center would deteriorate and urban mobility would decrease. Public services quality would diminish and social capital weaken.

Lessons learned from Step 4: Occasionally, decision-makers had difficulties in establishing implications for future scenarios because they did not foresee straight away how the broad future context would affect their daily operations in Burgos. To overcome this problem, the territorial functional system created in Step 1 was of great help because it structured and focussed the experts discussions. Compared to some foresight studies that only display change factors and scenarios, this step provided additional value to the final output and it gave important clues for formulating strategic actions.

There are some support tools, which may be of great help in determining scenarios implications. A Geographical Information System or other type of graphical tool can be very useful to show spatial implications of socio-economic trends. Just as well, the application of simple quantitative models can reinforce the explanation of certain territorial processes. In brief, implications? analysis may be the right step to make use of software in crafting scenarios.

Brief conclusions

It is obvious that the proposed method could be further complicated adding more elaborate processes and techniques. However, we should not be obsessed with technical sophistication when our prime goal is to make that diverse local stakeholders participate in a complex foresight exercise. Accurate data compilation and careful scenario creation are more important to achieving forecasting success than implementing 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 eminent qualitative nature.

Further reading

- Asociación Plan Estratégico de Burgos (2009). Estudio de prospectiva territorial para la Ciudad de Burgos. Unpublished study.

European Spatial Planning Observation Network (ESPON) (2007). Scenarios on the territorial future of Europe. Belgium: ESPON.

- Fernández Güell, J. M. (2009). ?Can foresight studies strengthen strategic planning processes at the urban and regional level?? paper presented at the City Futures Conference in Madrid, May 2009.
- Fernández Güell, J. M. (2006). Planificación estratégica de ciudades, nuevos instrumentos y procesos. Barcelona: Editorial Reverté.
- Fernández Güell, J. M. (2004). El diseño de escenarios en el ámbito empresarial. Madrid: Editorial Pirámide.
- Foresight for Regional Development Network (FOREN) (2001) Practical Guide to Regional Foresight. Sevilla: Institute for Prospective Technological Studies (IPTS).
- Fundación OPTI (2007) Estudio de prospectiva sobre el comportamiento social ante el desarrollo sostenible. Madrid: Fundación OPTI.
- Gavigan, J. P.; Scapolo, F. (2001). ?La prospectiva y la visión del desarrollo regional a largo plazo? in The IPTS Report, 56, pp. 22-33.
- Schwartz, P. (1991). The Art of the Long View. New York: Doubleday Currency.
- The IPTS Report, Nº 59, November (2001). Special Issue: Foresight and Regional Development.