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Madrid 2015

Foresight Brief No. 069

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Sponsors: Comunidad Autónoma de Madrid (Regional Government of Madrid)
Type: Regional Foresight
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Duration: 2004-2005 **Budget:** 170,000€ **Time Horizon:** 2015

Purpose

Madrid 2015 is an initiative promoted by the Regional Directorate of Economy and Innovation and carried out by this Directorate and the University Antonio Nebrija with the support from other Universities and Research Centres. This exercise, carried out during 2004, analyses the strengths and weaknesses of the region and initiates a collective thinking process that disentangles the key factors that influence the competitiveness of the region. The final purpose of this foresight project is to explore the possibilities for sustainable economic growth that the region of Madrid has, in order to anticipate possible futures and design long-term policies.

Madrid Embedded in a Changing Environment

Madrid is embedded in a changing environment. The region is generating new jobs and the economy is going through a period of considerable growth; its demographic pattern is changing, mainly due to large numbers of immigrants. The possibility of hosting the Olympic Games of 2012 generated great expectations and optimism among its citizens. These elements provided a positive environment for the region and were the starting point for Madrid 2015.

The favourable atmosphere of Madrid and the improvement in the quality of life are targets that the regional government is willing to maintain and improve. For this purpose, thinking about the future is a crucial element for shaping adequate strategies and defining long-term options for the region.

A Thinking Process for Madrid

This thinking process has been articulated in the form of a foresight exercise, structured in three stages:

The **first stage** is an analysis of the current situation of Madrid and a study of the factors of change that are affecting the present situation of the region and are possibly going to be important for the region in the future.

The **second stage** and core part of the exercise involves the definition of a desired Scenario for Madrid in 2015, as well as other future alternatives.

The **last stage** comprises the conclusion from the Scenarios, which are made to define future policies and strategies for the region.

Shaping the Path for a Desired Future

The main objective of this foresight exercise is to shape the paths that the region needs to follow in order to reach an optimistic and desired future in 2015. This desired future, as well as other plausible alternatives, are illustrated in the form of Scenarios. The Scenarios are built on the analysis of the cur-



rent situation of the region - first stage of the exercise - and conclude with the elaboration of future strategies - outcome of the exercise.

This exercise uses the following tools: PEST Analysis (see below), SWOT Analysis, Interpretive Structural Modelling (ISM), Input-Output Analysis and Scenarios.

Regional Environment

To put the region into context requires the investigation of the environment, or the Political, Economic, Social and Technological forces (PEST Analysis) that drive the region. From these four, and due to their international relevance, the Economy, dominated by the phenomenon of **Globalization** and the Technology, strongly influenced by the **Knowledge Society**, are the two main elements on which this foresight exercise is based. But this analysis also takes into account other important elements: the European and the national dimension of the region.

Strengths and Weaknesses

Following the analysis of the environment, a **SWOT analysis** intends to define the opportunities and risks faced by the region. These tendencies influence the near future; but, as the evolution of the region is a dynamic process, these opportunities and risks cannot be understood on their own and need to be complemented by the factors of change that directly affect them.

Factors of Change

The analysis of the critical Factors of Change for Madrid takes into account two concepts: the **Knowledge Society** and the **regional competitiveness**. The Knowledge Society is relevant as the tradition of regions as producers of goods is shifting to regions as accumulators of knowledge. Regional competitiveness is also important, as regions are immense economic agents that compete like enterprises, offering tangible and intangible services to the productive sector.

The Factors of Change identified in this exercise are grouped in five categories: **infrastructures, social capital, human capital, technological capital and quality of life**. These are decisive for developing competitive advantage in the region

The study of the interrelations between the Factors of Change requires the use of an **Interpretive Structural Modelling (ISM)**. This tool gives an idea of the factors that are most dependent upon other factors; if a factor of change is considered as "true", it would stimulate other factors of change.

A Model for Regional Growth

An **input-output analysis** studies the economy of the region, based on projections that establish linkages between demography, economy and industrial structure. This method provides a model of regional growth.

Scenarios

The final tools that shape the future of Madrid in 2015 are Scenarios. These Scenarios use as axis the exogenous dynamics of the region and its endogenous dynamics. The **exogenous dynamics** is composed by an articulation of four elements: globalisation, the enlargement of the European Union, the Spanish integration into the European Union and the Information Society. The exogenous dynamics range from an environment of opportunities to an environment of obstacles.

The **endogenous dynamics** deals with the capacity that public and private agents in the region have in order to get rid of the advantages or face risks. The endogenous dynamics varies from a positive to a negative climate.

The different combinations of these factors constitute four "extreme" Scenarios. The combination of the positive elements of the exogenous and endogenous dynamics constitutes the "Desired" Scenario for Madrid in 2015. These Scenarios intend to draw the **strategic lines** that the region needs to adopt in order to achieve a desired situation in 2015.

Who is involved in Madrid 2015?

This project is lead by the Regional Government of Madrid and the University Antonio Nebrija, with the collaboration of other Universities and Research Centres. The stakeholders involved in the process are grouped in three boards: an Inter-

national Advisory Board, formed by international experts in foresight; a Foresight Board, actively involved in the foresight process; and a Consultive Board that included representatives from different areas of government - industry, education, innovation, economy and transport. Additionally, an External Expert Committee gave input at several stages of the project.

Analysis of Factors of Change

The application of the different methodologies provides information of different nature:

The main factors of change were infrastructures, social capital, human capital, technological capital and quality of life.

The analysis of regional **infrastructures** revealed that these might be driven by the construction of a **second airport** and a **new high-speed train**, as well as the creation of public-private partnership for funding these activities.

Social capital provides an environment for the development of the region. Some of the identified factors of change that affected social capital were events like the **Olympic Games**; the mechanisms to prevent crime and terrorism and the establishment of a focal point in the region that established linkages with neighbour countries, especially with North Africa.

In terms of **quality of life** the results of the study revealed that there was an increasing number of **leisure and tourism activities**, but the region still lagged behind other European countries.

In relation to **technological capital**, the report saw that the delocalisation of manufacturing services could force the region to shift to more technological sectors. The linkage of the productive activities to R&D offered the possibility of positioning the region in an advantage situation in fields like **aerospace, ICTs and biotechnology**. In addition, the region was the principal financial region of Spain and could become in the future a **financial platform between Spain and Latin America**.

The lack of efficient **human capital** and the **brain drain** was a signal of the need of a **better university education**, adapted to the **entrepreneurial demand**. At the same time it was possible that the region was receptor of a high skilled immigration that contributed to the knowledge economy.

Factors of Change: Importance and Probability

The experts provided their perceptions in reference to the factors of change above mentioned. These factors of change were later sorted by their importance and the probability to be materialised. Experts gave more importance to the factors affecting enterprises and entrepreneurship, especially in new technological sectors; and less importance to tourism activities, to the relations with North Africa and to the delocalisation of productive activities. In terms of probability, they saw as probable the investment in big infrastructures and the intensification of the financial sector. But, comparing importance with probability, the report concluded that the most important factors were not always the most probable ones.

The Interpretive Structural Model

A more detailed interpretation of the interrelation between the factors of change gave the following results. The most dependent factors of change upon other factors were:

- The formation of industrial clusters and clusters of services.
- The consolidation of technological clusters that are linked to the R&D activities carried out in the region.
- The higher concentration of regional R&D activities oriented towards new European policies.

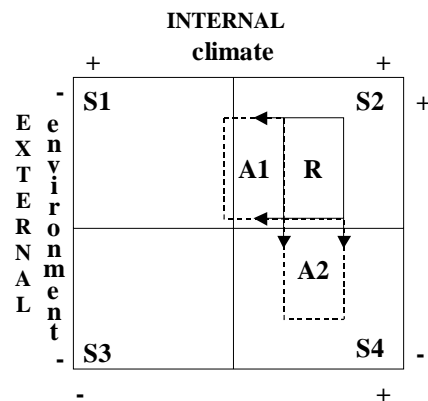
The factors that had more impact upon the rest were the construction of big infrastructures for the region and the second and third issue from the previous section.

Input-Output Analysis

The economic model resulting from the input-output analysis concluded that the key areas for the regional economy were commerce, transport, personnel services, services to enterprises and real estate.

Benefiting from Global Growth or Suffering from Economic Decline?

The foresight exercise provides four “extreme” Scenarios (S1, S2, S3, and S4) and a “Desired” Scenario (R) that represented a favourable future for Madrid in 2015.



In the **first scenario (S1)** – environment of opportunities and depressive climate – the region is embedded in an environment of opportunities but a depressive internal climate prevents the social agents from getting advantage of the external opportunities. As a result, the region loses competitiveness.

In the **second scenario (S2)** – environment of opportunities and positive climate – an environment of opportunities and a positive climate allow the region to develop a competitive model that benefits from the national environment and the global growth and social welfare.

The **third scenario (S3)** – environment of obstacles and depressive climate – deals with a situation in which the region faces external difficulties and does not find the internal strength to maintain its model of growth. As a consequence the region suffers degradation in the economy, in the social welfare and in the environment.

The **fourth scenario (S4)** – environment of obstacles and positive climate – tackles a situation in which some difficulties encountered in the environment slow down the willingness of the economic and social agents to achieve a competitive position. As a result, the region looks for competitive niches and reinforces its mechanisms of internal development.

A Positive Future with Variations

These Scenarios are extreme and not necessarily very realistic, but they serve to position the region at present and delimit reasonable alternative futures. At the moment, the region of Madrid is placed in the most positive situation, the scenario 2. However, analysts consider as plausible a slight deterioration of this situation (A1 and A2) for the period 2005-2015 and therefore, they do not see it as feasible to do a simple extrapolation of the current trends into the future.

The positive evolution of the region over the past 10 years has provided the basis for defining the “Desired” scenario. This scenario would be embedded in an environment of opportunities and positive climate (scenario 2) and would be a continuation of the present situation. However, it is necessary to take into account some inflexion points as the linear projections are not always feasible. Therefore, in spite of the favourable past trends and the advantageous position of the region, this scenario necessarily considers eventual discontinuities reflected in two sub-scenarios.

This “Desired” scenario is built upon four main elements: new technologies, big infrastructures, tourism, leisure activities and culture, and financial system.

The “Desired” scenario is complemented with two alternative situations that are also situated in a sub-space within the scenario 2 but slightly overlap with scenarios 1 and 4. These alternative scenarios consider a decline in the variable climate and environment respectively.

The first sub-space (scenario A1) considers the deterioration in the social climate, especially in processes that accumulate social, human capital and quality of life. In this scenario the environment is still positive, but the decline of the social climate represents the failure of the competitive model of the region.

The second sub-space (scenario A2) assumes a deterioration in the global, European and national environment. In this scenario the inner climate of the region is competitive but the external context does not contribute to its expansion. In this case, the technological and economic revolution as well as the globalisation fail; and even though the region demonstrates to have competitive advantage. This cannot be exploited globally.

Proactive Policies Required

The overall conclusion of the exercise is that the “Desired” scenario is the most attractive situation for the region of Madrid in 2015, but it requires proactive policies in several areas, from human, social and technological capital to infrastructures and quality of life.

A Normative Approach

As a normative foresight exercise, this document identified the essential elements that are required to achieve the desired situation in 2015. This desired future is driven by two main elements: Globalisation and Knowledge Society. These elements define two future desired options for Madrid:

Madrid, a “Cosmoregion” in 2015 - This option positions the region in the knowledge society. Under this situation, Madrid would be the geodesic centre for the Spanish speaking countries, and a central point for the South of Europe.

Madrid, a Science Region in 2015 - Madrid as a Science Region positions the region in the technology wave, domi-

nated by areas like ICT, nanotechnology or biotechnology; and characterised by programmes for brain attraction, by the creation of high-tech start-ups and by the promotion of R&D on education, health and other scientific areas.

Contribution of Madrid 2015

The contribution of this foresight exercise can be summarised in three points:

- The exercise raised key issues for the region, with particular relevance for policy-making.
- “Madrid 2015” identified priority areas and ways for mobilising resources to act upon these areas.
- It identified the critical factors and key players in shaping the future.

A continuing process

This exercise is the starting point of a continuous foresight effort in the Regional of Madrid. The first up-date of the 10-year foresight is in process.

References

La Comunidad de Madrid. Prospectiva 2015. Dirección General de Economía. Conserjería de Economía e Innovación Tecnológica. Comunidad de Madrid 2005

About the EFMN: Policy Professionals dealing with RTD, Innovation and Economic Development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. One of the most important tools they apply is FORESIGHT. The EFMN or European Foresight Monitoring Network supports policy professionals by monitoring and analyzing Foresight activities in the European Union, its neighbours and the world. The EFMN helps those involved in policy development to stay up to date on current practice in Foresight. It helps them to tap into a network of know-how and experience on issues related to the day to day design, management and execution of Foresight and Foresight related processes.