

Innovating in the global market

CARME BOTIFOLL

The overall situation of our markets, the increasing economic cross-relations and the powerful appearance on the international stage of new competitors with a high potential have led to a shift in the «rules of the game» that have historically set the pace in the markets. Catalonia has a solid economic base to tackle the current challenges and take a position as a leading country, internationalised, open to the world, competitive in global markets, innovating and fully participating in the knowledge economy.

The cooperation and bundling of efforts at all levels – between companies, with the Government and universities, technological and research centres – is a need that has to be further tackled, since this is the only way to create the synergies that will allow us to enjoy a truly competitive environment to take on the global challenges and going further along this way.

An ever more global market

Our economies are today set in a context of deeply and constantly shifting international action. The important political and economic changes that have been occurring since the last quarter of the 20th century, spearheaded by intensified economic integration, have led to deepening the globalisation process, which is now reaching a scale beyond any limit previously experienced by our societies.

Within this context, advanced economies such as Catalonia have witnessed an ever more important challenge related to their traditional positioning in the markets. The latter's evolution is therefore not only determined by the economic powers that have traditionally taken a leading role, but the rise of the emerging economies, now responsible for the bulk of commercial transactions, has also made them become knowledge-intensive. It is a long time since international trade ceased to be dominated by simple cost competition. Conversely, there are many other factors determining such market mechanisms.

Although Catalonia is still characterised by a relatively healthy economic situation reflected in most indicators, it is true that we are experiencing a change in the economic cycle that comes together with a shift in our growth model, pointing towards sounder and more balanced economic progress.

Without any doubt, this situation would not have been possible without our traditional effort to make our way in new markets while laying the foundations of an economy with a high capacity to attract investment into our country. In fact, Catalan exports grew sevenfold from 1988 to 2006 and Catalan investment abroad twenty-twofold from 1993 to 2006, while the number of exporting companies increased fivefold in fifteen years. Catalan companies have entered and settled in markets all over the world while diversify-

ing their production according to the overall changes of the markets and increasing, for instance, the technological component of their exported products and services.

Within this context, the ability to network and the readiness to cooperate is a factor that needs to be fostered so these matters become as simple as possible and the implementation of the policy is accurate and adjusted to each situation.

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Joining policies and strategies within this context becomes a crucial factor that shall lead to creating synergies and achieving the best results of public action to support competitiveness. The merger of CIDEM and COPCA, the main landmarks of innovation and internationalisation – the key elements to competitiveness – into a single body will allow to meet these targets.

The global stage: globalisation, new competitors and diversification of markets

The globalisation of world markets has encouraged processes to relocate productive activities, while the accession of new economies to the global stage has led to an increase and diversification of the existing offer of products.

However, there is also an increase of competitors on the world market whose high potential has them already become knowledge-intensive. It is a long time since we left behind simple cost competition; in fact, China spent 1.42% of its GDP on R&D in 2006, the private sector and foreign capital taking an increasingly leading role.

This situation places us before a challenge but also a big opportunity we must not lose, since developed economies need to make a quantum leap towards a new productive model within a context in which specialisation, innovation and differentiation of products is widely acknowledged by the market. The ultimate shift of our productive bases towards an open, international economy based on knowledge, R&D, innovation and ICT will thus more than ever earn recognition by the market.

We therefore need to make an effort to consolidate those advantages that make us competitive at a global level. Catalonia stands as the ideal place to develop creative, innovative activities with high added-value as we have the necessary infrastructure, a highly prepared environment and very skilled and competitive human capital.

Where do we want to go to?

Out of an analysis of the current situation in Catalonia related to our overall macroeconomic situation, it is reasonable to draw the following future scenario given the peculiarities of our productive system, compared to the main economic regions in Europe and even the whole world:

- ▶ Catalonia as a globalised country, open to the world, competitive on the main international markets and world leader in some economic sectors of high added-value. A country of SMEs, multinational companies and entrepreneurs with a sense of effort and risk.
- ▶ Catalonia taking part in the knowledge society, thus becoming an international landmark for R&D&I.

We obviously need to work hard to meet this target. Catalan companies are fully aware of their chances and regard innovation as the necessary way to increase their competitiveness, not only on the local market but also on the international stage.

Although it is true that it is business that needs to assume this increasing need, the Government also plays an important role in awareness-raising and in fostering and creating the adequate conditions so the economy is able to take on the challenge of moving towards this growth model based on innovation and knowledge, which shall allow us to be more productive and competitive at the global level.

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For the Catalan economy to meet these goals, the Government of Catalonia is implementing an industrial policy through the Ministry of Innovation, Universities and Enterprise that gives priority to an entrepreneurial development model based on factors that encourage business activities able to attract and generate new investment as well as to create high added-value.

Therefore, crucial factors like training and specialisation of employees, investment and creating the necessary infrastructure allowing for innovative activities and R&D are being deployed, and so is the promotion and creation of technology centres. Moreover, policies are made to encourage the internationalisation of Catalan businesses and to set a multinational footprint.

Within this context, it is very important that the knowledge transfer from universities and research centres to companies and vice versa is made as a normal process without any interruption so the permanent contact between business and the academic world may bring about in a more effective way a higher dose of productivity in each unit and thus in the whole system.

Another variable to take into account is entrepreneurship, an important driver for innovation,

competitiveness and economic growth of a country. The creation of competitive and innovative projects able to set foot on the international stage requires to a large extent the creation of a structured basis of entrepreneurs who take the leadership of this process.

Cooperation becomes paramount to meet the challenge of sizing. Human capital, organisation and management are the only factors that will provide Catalan economy and industry with decisive advantages.

Related to this, it is important to mention the ever more latent need for stimulating growth and consolidation of such new projects and companies. The sizing of businesses is still a pending matter in our country but it becomes ever more necessary to stay competitive on the markets. Besides, cooperation becomes paramount to meet the challenge of sizing: the big innovative companies in the Catalan productive economy need to act as a driver for smaller businesses (SMEs) while there is also a need for forging relationships between these producing units on the one side and technological and research centres and universities on the other.

We must not forget that within this context, human capital, organisation and management are the only factors that will provide Catalan economy and industry with decisive advantages, since favourable competitiveness gaps will not come through better equipment or technology but through specific know-how and a different way of taking action in business.

It is equally important to state that in order to bring about this change it is not enough that the Government takes action to create an excellent environment to develop such activities, but it is indispensable that Catalan companies make a bigger effort in investing in R&D&I given the crucial importance of private industrial initiative

for achieving a higher growth and return on R&D investments.

We altogether – the Government, business (both multinationals and SMEs) entrepreneurs, research centres and universities, investors – that is, all stakeholders need to be aware of the importance and need for introducing improvements, innovation, planning and organisation into our daily processes and the way we manage our tasks as a means of making the difference on the market and to ensure a good position for our businesses. Only then will we become more productive and Catalonia will stand out as a truly competitive economy able to take the lead in different sectors at a global level.

Innovation: a strategic challenge

The situation of innovation in Catalonia

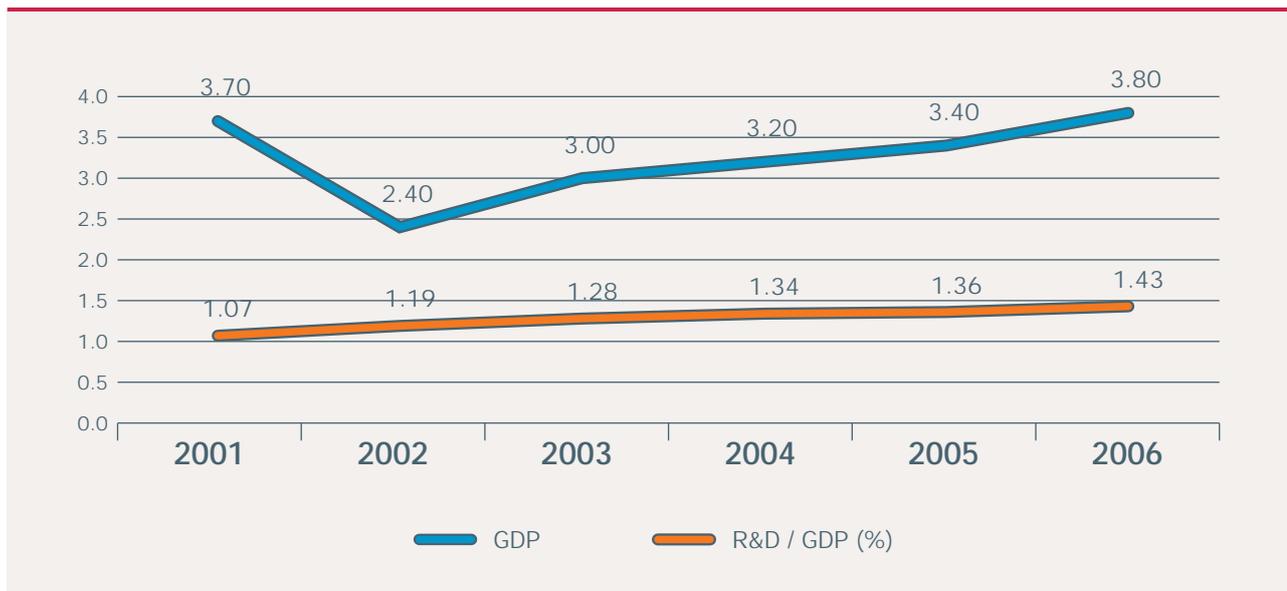
According to the OCDE, innovation amounts to 50% of long-term economic growth in the advanced industrialised economies.¹ The behaviour of investment in research and development (R&D) and innovation is a key in this matter. Therefore, Catalonia's main goal is to further increase investment related to these items.

As is shown, Catalonia spent 1.43% of GDP on R&D in 2006, compared to 1.36% in the previous year. Although this figure reflects the increasing effort of the Catalan economy to make progress along these lines as well as our country's dynamism related to the whole of Spain (1.20% average), it is still far from the European 1.85% average in 2006 (EU-25).

Although Catalonia takes a less favourable position as to R&D compared to other European regions, as can be inferred from the table below, it is however to be said that its effort in such activi-

Graph 1. Relation between R&D expenditure and GDP. Catalonia, 2001-2006

GDP shown as growth rate, R&D expenditure related to GDP



Source: Idescat and own research

- ▲ R&D expenditure related to GDP in Catalonia has increased in the last years and reflects the big investment in this area within a context of strong economic development.

ties is stronger than that of regions like, for instance, Ireland. In the overall Spanish context, Catalonia is one of the most dynamic autonomous communities and far above the national average (1.21% in 2006).

Catalonia spent 1.43% of GDP on R&D in 2006, which reflects the increasing effort of the Catalan economy to make progress along these lines.

Most R&D expenditure in Catalonia comes from the private sector (65%, compared to 35% from the public sector, a relation in line with the recommendations of the European Commission: 1/3 public, 2/3 private). The private sector (business and private non-profit organisations) thus spent 1,705 million euros on R&D, which means

a 15% increase compared to the previous year. Likewise, business R&D expenditure in Catalonia amounts to 26% of all Spanish private expenditure. The dynamism of Catalan businesses related to R&D places Catalonia second only to Madrid in the ranking of Spanish autonomous communities.

As to the public sector (public administration and higher education), the R&D effort amounted to 909 million euros in 2006, placing Catalonia again second to Madrid in the overall ranking of autonomous communities.

As to expenditure in technological innovation, Catalonia, with more than 11,100 innovating companies, generated an overall expenditure of 3.6 billion euros in 2006, 1.41% more than in the previous year. This figure amounts to 1.94% of Catalan GDP, compared to 2.05% in the previous year.

Chart 1. R&D expenditure. Europe and regions, 2002-2006

Figures shown in percent of regional GDP

	2002	2003	2004	2005	2006
<i>EU-25</i>	1.89	1.88	1.84	1.85	1.85
<i>EU-15</i>	1.94	1.93	1.90	1.91	1.91
<i>Euro zone</i>	1.88	1.88	1.86	N/A	N/A
Baden-Württemberg (Ger)	N/A	3.88	N/A	N/A	N/A
Ireland	1.1	1.16	1.21	1.25	N/A
Basque Country (Sp)	1.28	1.38	1.54	1.48	1.60
Foral Community of Navarre (Sp)	1.05	1.33	1.90	1.67	1.92
Community of Madrid (Sp)	1.76	1.69	1.76	1.82	1.98
Catalonia	1.19	1.27	1.34	1.36	1.43
Andalusia (Sp)	0.6	0.85	0.80	0.84	0.90
Midi-Pyrénées (Fr)	3.56	3.72	N/A	N/A	N/A
Rhône-Alpes (Fr)	2.73	2.61	N/A	N/A	N/A
Lombardy (It)	N/A	1.2	N/A	N/A	N/A
Etelä-Suomi (Fi)	3.65	3.55	N/A	N/A	N/A

Source: INE, Eurostat

- ▲ Catalonia is among the leading autonomous communities regarding R&D, although it is still far from the main European regions.

Innovation: a boost to markets

Innovation and internationalisation: key drivers of industrial competitiveness

The increasing cross-relation between economies, industries, technologies and productive activities as has been described has led to a dilution of market barriers and frontiers, a fact that is clearly reflected in the strong increase of investment flows and the growing role of multinationals in this global setting.

The challenge today is innovating to create value and doing things differently in the creation process, production, marketing, logistics and business policy. Without any doubt, the current positive situation of our economy would not have

been possible without Catalonia's traditional drive for setting foot in new markets while laying the foundations of an economy with a high capacity to attract foreign investment. There are currently about 3,000 foreign companies in Catalonia, which is more than 34% of all Spain. Their role in creating a dynamic economy is important since they amount to 11% of all jobs and generate 20% of overall industrial turnover.

At the same time, these companies bear witness to Catalonia's capacity of attracting new investment. There are obviously other points we need to improve, like creating an adequate environment so our companies may implement more innovative processes, our universities and research centres may gain international reputation and Catalonia may develop a creative, entrepreneurial and competent human capital creating value and standing out for its international view and experience.

Chart 2. Evolution of R&D&I in Catalonia

Figures shown in percent of regional GDP unless stated otherwise

	Catalonia		Spain		EU-25		EU-15	
	2005	2006	2005	2006	2005	2006	2005	2006
Total R&D	1.36	1.43	1.13	1.21	1.86	1.85*	1.91	1.91*
Public R&D on total (%)	36.6	34.7	46.0	44.3	34.7*	N/A	34.4*	N/A
Private R&D on total (%)	63.4	65.2	54.0	55.8	54.5*	N/A	54.8*	N/A
Technological innovation	2.05	1.94	1.51	1.68	N/A	N/A	N/A	N/A

* Eurostat estimates

Sources: INE, Eurostat and own research

- ▲ The relation between public and private investment in R&D in Catalonia follows the European recommendations by which the distribution shall be 1/3 public and 2/3 private.

World trade has also brought prosperity and stability to economies and has created a setting that has allowed many countries to increase their level of development and to reduce poverty. In fact, since the second half of the 20th century, world trade has grown by twenty-seven and the growth of exchange has tripled that of global production.

Trade exchange in Catalonia has been increasing in the last years according to this global situation. With internationalisation of trade at 31.2% and exports at around 25% of GDP (imports are at 38%), Catalonia has been and still is a very open economy in terms of trade relations. In fact, Catalonia represented 0.5% of worldwide exports and 0.8% of global imports in 2006. These figures are very significant given the fact that Catalonia's population amounts to only 0.1% of the world total. As the figures given show, our companies, made up basically of SMEs (99%), have made a big effort to go international in the last years. Catalonia has almost 11,300 companies exporting regularly all over the world, with ever more of them envisaging emerging markets and partnerships with foreign companies.

In any case, as shows the above graph, the increase of Catalonia's trade capacity has gone in

line with the diversification of Catalan products, which in turn has led to a higher use of technology in Catalan production, encouraging the growth of exports with a high technological component.

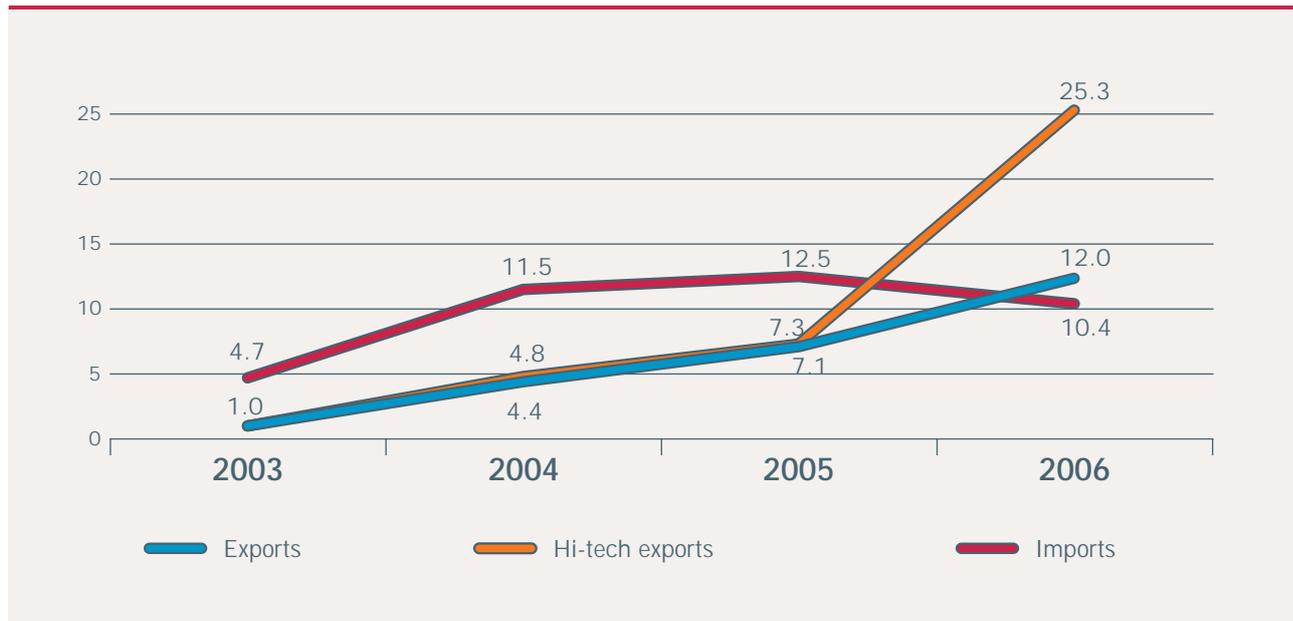
Our companies have made a big effort to go international in the last years.

This has to do with the growing awareness of Catalan business related to innovation and internationalisation as the key factors of their strategy.

A strategic drive for competitiveness of Catalan companies

The role of the Government in all these contexts is twofold: proactive in fostering innovation and internationalisation of Catalan businesses and observant of proposals and needs of companies as well as other organisations and stakeholders in the productive system.

It is time to join policies and strategies not to simply assemble but to multiply the results of public action with a view to innovation and inter-

Graph 3. Foreign sector in Catalonia, 2003-2006*Data shown as annual growth rate**Source: Idescat and own research*

- ▲ The increase of Catalan exports has gone in line with the diversification and increase of the technological component of products sold abroad.

nationalisation. The changing and growing needs of Catalan companies require a response.

The important interaction between innovation and internationalisation, two concepts that go hand in hand today, led to the creation of the Directorate General of Innovation and Internationalisation within the Ministry of Innovation, Universities and Enterprise. Its main challenge is the merger and use of synergies of two renowned bodies in these two fields as are the Centre d'Innovació i Desenvolupament Empresarial (Centre of Entrepreneurial Innovation and Development, CIDEM) and the Consorci de Promoció Comercial de Catalunya (Consortium for Commercial Promotion of Catalonia, COPCA). The new agency's mission is to foster competitiveness of our companies promoting not only innovation and internationalisation as had been done so far but also other working lines that had not been taken on in-depth, as could be new human re-

source management in business, attraction of technological talent and capital or creating and consolidating knowledge networks. The new agency thus wishes to respond to new realities, appearing as a pioneering, proactive body aimed at offering a dynamic, prompt and efficient service.

There are several actions carried out to increase internal expenditure on these business items through adequate policies adapted to the specific needs of Catalan companies, offering an integrated model of driving competitiveness in Catalan business. To meet these goals, the Government acts on different lines that can be summarised as follows:

- ▶ Fostering cooperation projects between companies, universities and technological and research centres, also at international level, by adopting a wider and more strategic perspective.

- ▶ Promoting the different technological networks already in operation as well as technological promotion, valuation, commercialisation and monitoring at sites creating knowledge.
- ▶ Strengthening competitiveness of mature clusters and fostering internationalisation of industries threatened by foreign competition.
- ▶ Support to innovative and technology-based entrepreneurs at all stages of their business projects, from creation to implementation, growth and internationalisation.
- ▶ Offer of first-level programmes to support internationalisation of Catalan companies.
- ▶ Encouraging a new generation of Catalan multinational companies.
- ▶ Encouraging innovation in all its aspects (both technological and non-technological).

These action lines come together as a result of a policy that has evolved and still is doing so ac-

ording to the needs of Catalan companies and has also followed each step of economic, political and social development in Catalonia in the last years.

The Catalan Business Internationalisation Plan 2005-2008 on the one hand and the Research and Innovation Plan 2005-2008 on the other have set the pace to respond to the increasing needs for rethinking the Catalan internationalisation and innovation models.

However, as has been said, the new challenges are now increasing the need of linking these two crucial aspects of competitiveness of the Catalan economy and the future of our society.

It is now time to go forward, to look towards the future and build it in a solid way.

We altogether need to take on the challenges of the global economy, work for the future and the competitiveness of the country and lay the foundations for the prosperity of a competitive Catalan economy in the coming years.

CARME BOTIFOLL

Industrial engineer (UPC) and master in Local and Regional Development (UB).
Director general of ACCIÓ CIDEM-COPCA at the Ministry of Innovation, Universities and Enterprise of the Government of Catalonia.



Notes

1. *Economic Policy Reforms: going for growth 2006*. OECD, February 2006.