

INDUSTRIAL DEVELOPMENT

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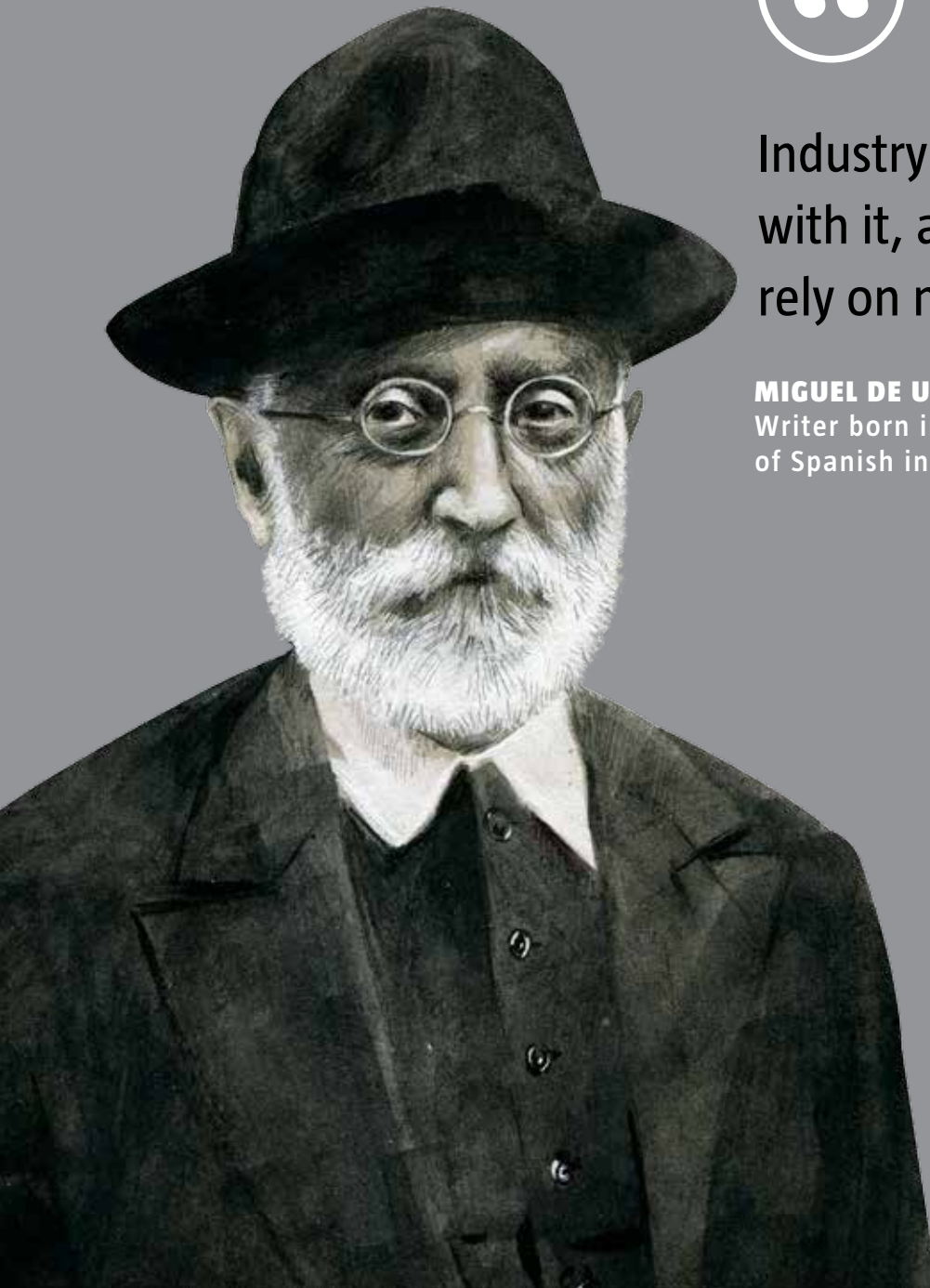
REINVENTING INDUSTRIALIZATION

Advancing toward a new productive model
should be more than just an idea.
It needs to be made a reality.



Industry brings trade along
with it, and manufacturers
rely on merchants

MIGUEL DE UNAMUNO (1864–1936)
Writer born in Bilbao, the heartland
of Spanish industry





FORD

The finishing touches are applied to a vehicle at Ford España's assembly plant (left)

thyssenkrupp Elevator Manufacturing Spain's facilities in Móstoles (right)

Reviving industry

A full recovery of the economy will not be possible unless industry enters a revival phase. Rather than bolstering certain sectors or enterprises, the state should create a favorable environment for industry in general.



Jesús Mota
Journalist and writer

Over the last thirty years, governments have attempted to provide an answer to the following loaded question, with responses that have ranged from the resounding to the pitiful. Should there be such a thing as an industrial policy, or should enterprises in the sector have to make do with whatever is allocated to them (and sometimes that is quite a lot) in fiscal policy? Since no satisfactory response has been forthcoming either in Spain or anywhere else in the world (except in the form of the consequences of other economic decisions), we might suppose that, in theory, there is no straightforward answer. It is clear that during its first term in power Felipe González's government implemented an invasive, direct industrial policy (I remind readers of his industrial restructuring strategy), while Mariano Rajoy's first term in office has been characterized by a more diffuse industrial policy. If no clear response has been found it is because answering such a question would involve entering into all sorts of economic constraints and circumstances that form a kind of garden maze in which it is

almost impossible to find the right path. For example, before deciding on the scope of any industrial policy, it would be necessary to examine the role industry is supposed to play in each country's pattern of growth (the present government seems to have opted for a service economy) or whether some markets for new technologies should be classified as industrial services, given that they fall outside of conventional classifications. The gross value added of Spain's industry—which is taken as indicating the contribution the sector makes to the economy—stands at 13.5 percent of GDP.

Seven basic assumptions

These initial precautions should be taken very much into account, and we can safely assume that a full economic recovery will not be possible without industry entering a revival phase (every euro of value added in industry generates almost 1.5 euros in other sectors). Given the above, and that the weight of industry in Spain as a proportion of GDP is also below the eurozone average, the aim must be to ensure that recovery from the crisis can be channelled through

a change in the pattern of growth. In other words, the driving force behind an increase in GDP must come not from construction but from industry and technological services. Thus, any guide to a new industrial policy for Spain should be articulated based on the following basic assumptions:

1. Any direct sector-based intervention should be ruled out (with the exception of the energy industry, as a stimulus for potential future sectors or markets). Theoretical and practical precedents in Spain and the rest of the world suggest that this type of sector-based policy is a mistake. Incentives using public money should be strictly focused on horizontal policies: the clearest and most obvious of these (although not the only option, as we shall see) is the promotion of R&D with public money. From this point of view, the tax breaks given to the car manufacturing industry seem extremely questionable, since they foster a dependence that conditions future sales. As soon as these special plans disappear, sales drop and companies clamor for new stimuli. Likewise, it is acceptable for the government to get involved in the case



THYSSENKRUPP

of those sectors or enterprises that currently show greater productivity, albeit while ruling out preemptive decisions as to which might be the "sectors of the future."

2. The exception of the energy sector stems from the strategic importance of fuel and electricity supplies, whether this is explicitly recognized or not. Governments are faced with a weighty consideration affecting industrial policy: is it necessary to have a ministry of industry as a decision-making one-stop shop for industrial sectors, or should an energy ministry be constituted once more to deal with a key industry that poses a specific problem within the Spanish economy? If we can accept that selection policies and sectorial incentives are superfluous, then perhaps we might also say the same of the one-stop shop model. The assumption that the state should take responsibility for maintaining the sectors that generate most employment with public money or tax assistance (this is what happens in the car

industry), can only be upheld where there are measurable trade-offs for the general public as a whole. In any case, this debate has always been suppressed, perhaps due to strictly bureaucratic reasons (such as an unwillingness to reduce civil service posts and workers), as well as to political reasons. It is no secret that one-stop shops constitute instruments for the concession of open or covert subsidies, which are very useful in avoiding social unrest (think of mining, for example) or winning some votes.

3. The fundamental criteria of industrial policy must be to increase productivity. If, as I argued in the first point, it is not desirable to design policies to support potential sectors of the future, then it is necessary to act in a horizontal way so that Spanish industrial enterprises can be more productive—or rather, more competitive. It is a complex proposition for various reasons. The first and most immediate of these is that with recovery still a long way off, the parameters of the Spanish econ-

omy have to be maintained in a fine balance. As a case in point, increased productivity acts against job creation: the greater the productivity, the fewer the jobs required. Competitiveness must stem from concepts now considered topical buzzwords in the modern economy: more human capital, more technological capital. It must also be remembered that in some cases the bases for this competitiveness already exist. Spain has some excellent professionals at its disposal (engineers, doctors, etc.) but it fails catastrophically at the last hurdle between research and the enterprise: securing investment. To put it plainly, there are no enterprises where Spain's excellent researchers can carry out their work.

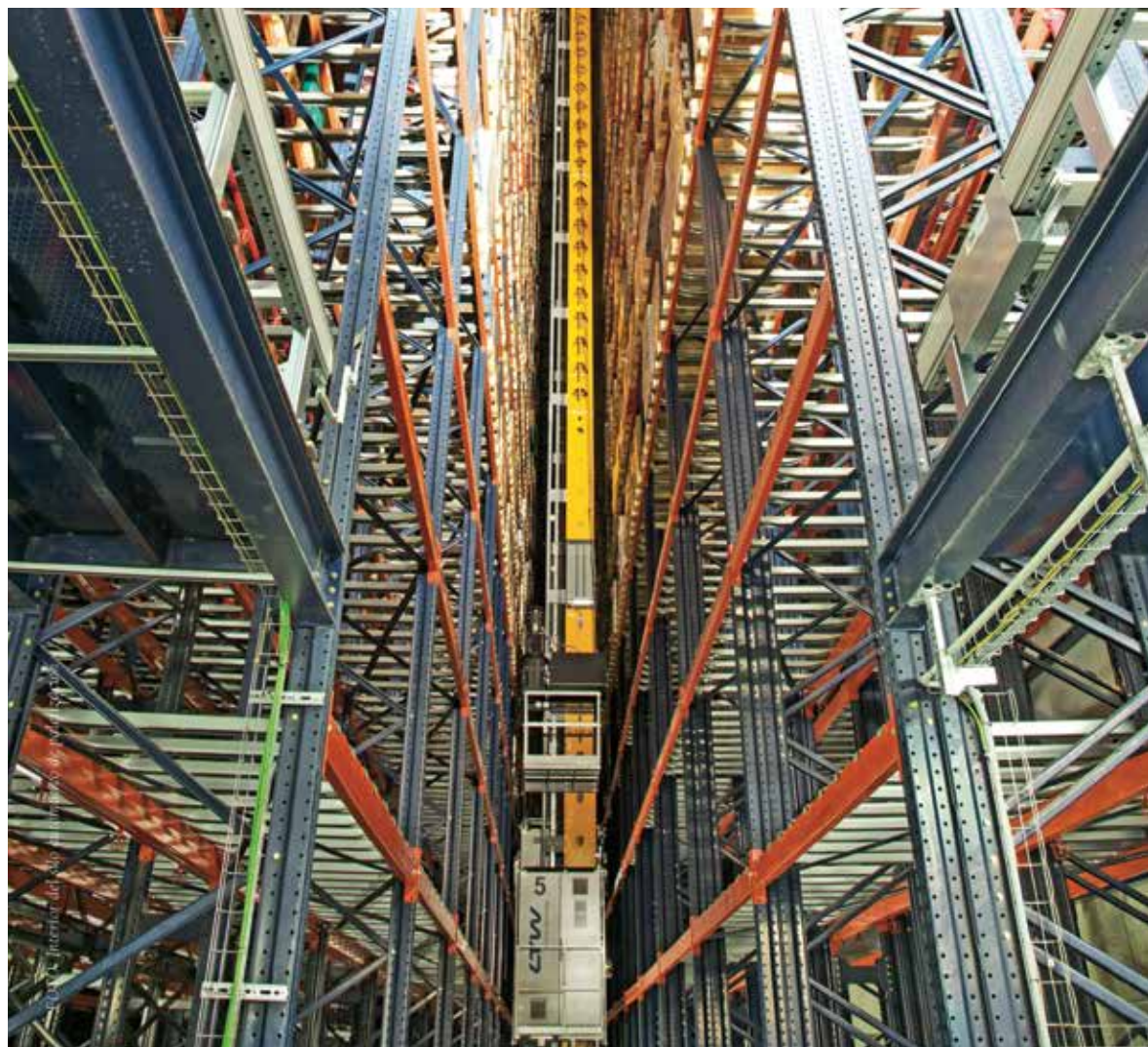
4. Catchwords alone are inadequate: the key concepts must be defined in detail. It is easy to say that industrial policy should be geared toward the intensive use of knowledge. But what does this mean? Well, it means investing in digitization (telecommunications no longer suffice), in-



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The recovery from the crisis can be channeled through a change in the pattern of growth. In other words, the driving force behind an increase in GDP must come not from construction but from industry and technological services



COFARES GROUP

FARMAVENIX, developed by Grupo Cofares, is Europe's largest pharmaceuticals logistics platform

corporating services into so-called traditional industries, linking up the various branches of industry, finding new sources of financing, and designing new approaches as to how activities are funded and developed. We also need to define who should be doing this, the ratio of public and private capital to be invested, what should be done in practice, the opportunity costs, and a reasonable calendar for action.

5. It is easy to list these objectives in theory, but achieving them is not possible while the institutional framework—which encompasses government and any other regula-

tory or financial systems—does not work well or simply limits its action to bureaucratic control activities (these are, nevertheless, essential to avoid the strangling of competition, something that does happen and merits discussion in its own right). It is not profitable for institutions to act as a senseless disincentive to entrepreneurial initiative. It is not just about facilitating the creation of enterprises or providing horizontal incentives for programs: it is also about injecting some order. It is a well-known fact that the Spanish government offers businesspeople a whole raft of economic stimuli when they embark on any kind of economic ac-

tivity. Unfortunately, however, the sheer number of government levels and stimuli available lead to duplication, overlapping, and, ultimately, confusion. Industrial policy requires an orderly application of public instruments. It is equally noteworthy that no one from among the dense network of levels of government in Spain (national, regional and local) has realized that one of the factors that conditions an enterprise's competitiveness is energy costs that are equal to or lower than those shouldered by the European companies they are competing with. And yet, the electricity consumed by Spanish industry is 30 percent more expensive



Spain has been configured as a service society in which an industrial future for the country is not officially recognized

than that paid by European enterprises on average. Before it can begin to deal with innovation and technology, an industrial policy should demand far-reaching reforms—in this case, genuinely structural in their nature—that might free up the markets and reduce costs.

6. But even with a clear idea of what the new model of Spanish industry should be, decisive problems still persist, such as the resistance among actors (businesspeople, investors, workers) to change their modes of entrepreneurial activity. There is also a lack of resources to guide businesses in the direction required to increase competitiveness. The example that is usually proffered is that of bank financing, perhaps because since 2008 the Spanish economy and, in particular, small and medium-sized enterprises are surviving in an environment where credit has drastically contracted. But other substantial obstacles loom large: individual investors are resistant to operating in risky activities, and businesspeople are reluctant to expand by hiring qualified technicians in order to raise the value added their business offers over the medium term. In other words, enterprises are in need of institutional reforms to their composition and functioning in order to break away from certain outdated practices and habits. One example can be found in the inexplicable fact that directors and board member positions are always accessed via more advanced studies or degree qualifications, when vocational training might also provide capable and successful candidates for such roles.

7. When we turn to examining the causes of productivity, apart from technology and training the most important factor is the size of the enterprise. Spain is a country of small—indeed, tiny—business groups. We might refer to the statistics, while bearing in mind that they do not always offer an entirely reliable reflection of the true situation. Of the approximately 3.2 million societies surveyed, 99.9 percent are small or medium-sized enterprises (with less than 250 workers). Of these, almost 96 percent are micro-enterprises, companies with fewer than nine workers. In industry, some 85 percent are micro-enterprises. It is difficult to apply innovative industrial policies in the context of this kind of business structure, since it is a well-known fact that the smallest businesses have more difficulties finding finance and, of course, cannot afford to invest in innovation. This means that introducing innovation policies in industry requires a previous step: that of increasing the average size of companies. This is a long and complex process that involves introducing stimuli (tax incentives, for examples, but also conditional assistance) to address the small size of companies.

Conclusions

It is difficult to extract any optimistic conclusions from all of this. It is not enough to know what we have to do; we also have to know how to do it (with a consensus involving government and enterprises), who should do it, and how much should be spent on the task. In the case of Spanish industry, the task requires

political tenacity, entrepreneurial patience, and flows of financing willing to take on entrepreneurial risks. But Spanish society is not known for its patience; there is little fondness for risk and the financial system is only just beginning to emerge from a traumatic experience (caused from within) which has served to further sharpen an aversion to any innovative process. With regard to political tenacity, past experience tells us that this is a fantasy. First, Spanish governments since 1996 (and even before then) have punctiliously refrained from designing specific industrial policies. When attempts were made to articulate such policy, they were undermined by the financial crisis of 2008 and subsequent recession. The line taken by the current government's decisions implies a de facto rejection of regional industrial policy, the regimented repression of funding for the development of technological innovations in enterprises (a process which, as we have said, requires decades to reach maturity) and the acceptance of a supranational order in which industrial development must simply take place in other countries. Effectively, Spain's current economic policy means that the country has been configured as a service society in which an industrial future for the country is not officially recognized, and is consequently not supported with intense and persistent horizontal financing in the form of public money. Ultimately, this is the change called for with a view to offering an innovative industrial policy: a change in policy direction.



Jordi Catalán

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University of Barcelona

POINT

The Spanish state has something worth promoting

A medium-sized country like Spain should concentrate on sectors well positioned in the global market to increase its advantage and capacity to generate knock-on effects.

England was able to gain world economic hegemony at the end of the eighteenth century, and held on to that power until 1913. The United States snatched the title during the second technological revolution. In the industries of the third technological revolution, which have been the most important to our development during the twenty-first century, the United States has been at the forefront once more. In crucial innovations—such as computing or the Internet—the boost provided by federal intervention has been key. In 1943, the United States Army signed an agreement with the University of Pennsylvania to create the pioneering computer that would be ready for use three years later. Similarly, the birth of the Internet is linked to the willingness of the U.S. Defense Department to create an agency (ARPA) that would, among other things, work to advance the interconnection of computers. The first message to be received by the twenty-three computers connected on the ARPANET went out some ten years later.

One might think that committing to industry can only yield results when such a policy has emerged during the early stages of an industry's development, and in countries that are good candidates for technological leadership. But that is by no means the case. Let us examine some relevant examples from emerging countries to support this argument. Embraer was created by the Brazilian government to construct small aircraft. It is now the world leader in its speciality. India has protected its drug manufacturing industry with a lax patent policy that has allowed its laboratories to achieve a leading global position in the production of generic drugs. The conglomerate or chaebol Samsung has obtained permits and grants from the South Korean government throughout its history. It currently yields uncontested global power in liquid screens and mobile telecommunications. China embarked on its reforms in around 1980, with the yuan's value closely pegged to that of the dollar. In 2001, when it entered the World Trade Organization, China had devalued the yuan to almost eight yuans per dollar in order to favor its industrial exports. That is how China was able to flood the world with manufactured consumer goods and become the industrial colossus of the twenty-first century.

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Competitive advantage

A medium-sized country like Spain cannot develop all its sectors, given that its capacity to take advantage of economies of scale is limited, as is its budget. However, Spain should commit to promoting those sectors in which its competitive advantage can generate externalities. This country should therefore focus on sectors in which it either has a good position in the world market to increase its advantage or where it is capable of creating knock-on effects. These externalities include impacts on R&D, wages, employment and restoring regional balance. Spain must also ensure that ownership remains in national hands in order to reduce the impact of relocations.

In the case of Spain, it is the car industry that fulfils the greatest number of the requirements above. Although it lacks domestic brands manufacturing the vehicles themselves, Spain does have small multinationals producing car components, such as Antolín, Gestamp, Ficosa, and

Zanini. SEAT and Nissan represent important centers for R&D in Spain. Moreover, they have vital knock-on effects for all other activities. Finally, although it is a product from the second technological revolution, the car requires components from the third revolution such as navigation systems and new materials.

Comparable to the car industry, albeit to a more limited extent, are the effects of naval construction and aeronautics. These sectors must also be considered worthy of support. The aeronautics industry, which incorporates space equipment, requires high numbers of staff in R&D tasks, registers a high number of patents and its regional effects in Spain extend to Madrid, Andalusia, and the Basque country. The sector should be considered strategic because it also benefits from technological convergence with other industrial activities. One historical example of this is the company Gamesa. The knowledge acquired by this Basque enterprise in the supply of aviation components to Embraer served to reinforce its competitive advantage in the manufacture of wind turbines. That is how the enterprise became a landmark in this speciality on a global level. In turn, it contributed to strengthening the competitive advantage that Spanish engineering and energy companies achieved in the construction of wind and solar energy farms (Iberdrola, Abengoa, Acciona). Equipment manufacturing in industries where Spain has a significant competitive advantage—such as tools and machinery, railway parts, solar energy, desalination, and telecommunications equipment—can also make the most of Spanish ownership of technological convergence and should, therefore, be the object of preferential government attention. Companies such as Telefónica in Madrid or Abengoa in Andalusia head up the lists of patents in their respective autonomous regions.

Pharmaceutical laboratories are, in geographical terms, fairly concentrated in Catalonia and Madrid, but their activity is of particular interest since it employs very highly qualified staff, pays high wages and, above all, has a privileged position in terms of the number of patents the sector produces. Given these advantages, and a growing aged population in Spain, support for this industry should be complemented with support for biotechnology, hospital technology, body care, and over-the-counter pharmacy products.

Other industries

The formidable competitive response from more traditional industries such as fashion, food, or construction

materials in Spain in the twenty-first century suggest that any commitment by the Spanish state to an industrial policy must combine the promotion of industries with the capacity to lead new technological challenges with support for those companies willing to bring about a revolution in more mature industries. There may also be a niche for public action in the interactions between these industries. From a remote corner of Finisterre in northwest Spain, Amancio Ortega demonstrated a tremendous capacity to revolutionize the textile manufacturing industry. Other entrepreneurs and brands such as Mango, Camper, Sfera, and Desigual have followed suit. Spanish fashion has shown a capacity to offer Mediterranean quality of life at affordable prices. Spanish industrial policy should expand on this idea, which can be applied to other traditional industries such as food or construction materials. Freixenet and other brands have demonstrated their ability to produce sparkling wines of a quality to rival the *méthode champenoise* at a much more competitive price than the French. Wines from the Rioja or Ribera del Duero and oils from the regions of Andalusia and Bajo Aragón offer a quality comparable with Italian products at far more attractive prices. Basque and Catalan chefs vie for Michelin stars, and ceramics from the province of Castellón have managed to displace Sassuolo producers in some of their traditional markets. Industrial policy can help to maximize these renewed traditional industries and spread their impact throughout the Spanish peninsula. The argument is worth repeating: Spanish industry offers a Mediterranean quality of life, like France or Italy, but with a better price ratio.

Finally, Spain has in the Castilian language—as well as the other languages of the peninsular—an asset over the long term that should be catapulted by public policy. Grupo Planeta has managed to establish a position as the eighth most important publishing house in the world, becoming a multimedia group and conquering vast portions of publishing markets in Spanish, French, and Portuguese. At the end of the twentieth century, Spain was the fifth country in the world in terms of publication numbers, not far behind giants such as England, China, Germany, and the United States. Worldwide promotion of authors and products, the fight against piracy, support for fixed book prices, and favorable tax policies should help to maximize this industry with a secular competitive advantage, helping to reposition publishing so that it can keep up with advances in information processing and transmission technology.

COUNTERPOINT

Ten proposals for reindustrialization

The Spanish economy's growth model has run out of steam, and it is now essential that a new environment is created to foster reindustrialization, a move that is being promoted as an urgent and collective task in the most highly developed countries of the world.

Spanish industry is currently facing various challenges, the most important of which is productivity. The disappointing progress made in this area is attributed to specialization in demand products with a low technological content (accounting for some 60 percent of industrial employment) as well as the small average size of companies in the sector. This, combined with low-quality education, a vastly insufficient level of spending on R&D, and the barriers to accessing credit that hamper SMEs, is creating serious problems for the competitiveness of our industry.

At the center of these concerns is the deindustrialization of Spain, which can be understood as the simultaneous drop in the contribution made by the industrial sector both to GDP and employment in the country. This is pretty clear: over the last fifteen years (1999–2013), the total percentage of employment in industry dwindled from 20 percent to 13.6 percent, while gross value added fell from 18.5 percent to 12.2 percent.

The deindustrialization of Spain sums up the negative consequences of the structural defects affecting the sector. But the real problem is that the Spanish economy's growth model has run out of steam, and it is now essential that we construct a new model based on reindustrialization, a move that is being promoted as an urgent and collective task in the most highly developed countries of the world.

In embarking on this mission, Spain would not be starting from scratch. On the contrary, there are sectors and enterprises that have shown themselves to be extraordinarily dynamic and very well integrated into international production networks. This is worth remembering when one feels tempted into reaching any fatalistic conclusions. But the need to achieve figures similar to those yielded by the manufacturing sectors of the most ad-

vanced nations, and to maintain First World living standards means that we have to undertake far-reaching reforms in various spheres. These include the following:

1. Labor market. Spain is under threat from a situation of structural unemployment over the medium term with levels approaching 15 percent of the active population. Shocking levels of unemployment currently constitute the most important reason why there is so much international mistrust toward the Spanish economy.

The European Commission opened discussions during the past decade on the desirability of making labor markets more flexible—the “Flexicurity” debate—given that the changes made to legislation governing recruitment and dismissal conditions were not sufficient to ensure advances in innovation unless accompanied by significant changes to collective bargaining processes. Such a reform is worth undertaking, considering the proven lack of neutrality in labor legislation in the sphere of innovation.

2. Education. If we are to implement a new production model in Spain, the principal problem in need of a resolution is education on all of its levels. A broad pact on education between the main political parties is essential to making decisive progress on all fronts. The lack of such a pact is an insufferable scandal.

Spanish vocational training, for example, does not offer either suitable qualifications or training in the skills required by businesses. According to the OECD, in 2012 Spain had less than half the number of citizens with vocational training qualifications (22 percent) than the average for the whole of the EU (48 percent), while the number of students that only reached basic secondary education level was almost double the EU average of 25 percent, standing at 47 percent in Spain. The European

Commission has lamented the fact that in the last decade the number of students in higher education in science fields has dropped by 27 percent. This is a serious hindrance to Spain's potential to innovate.

3. Size. Spain is a country of industrial micro-enterprises (with an average of 8.4 workers, compared with 25 in Germany), and this brings numerous problems concerning productivity and competitiveness, such as an insufficient capacity to assume high levels of capital investment, take advantage of scale economies, or access credit, R&D activities or internationalization.

Boosting the size of Spanish companies can be achieved by restricting the public grants available to SMEs that do not have expansion plans and/or exercising positive discrimination toward those that do have such plans. The creation of sectorial clusters might also favor this goal.

4. Spending on R&D and innovation. Spending on R&D must be increased as an urgent measure, achieving levels above 2 percent of GDP (compared with the current 1.3 percent of GDP) to match EU (28) averages. This is the responsibility of public authorities and, in particular, enterprises, given that both of these have shown themselves to be extremely shortsighted with regard to competitiveness in this area. The Spanish R&D and innovation system requires an increase in the human resources available, the creation of national consortiums to improve coordination between agencies, changes to research careers and an independent evaluation of public investigation bodies.

5. Internationalization and presence abroad. The Spanish economy has a high level of openness but participation of the products manufactured in goods exports (69.5 percent) is 10 percentage points below the EU (27) average and 15 points behind Germany. In 2014, it was estimated that 2,300 Spanish enterprises had 4,500 subsidiaries abroad. The aim should be to double these figures over the medium term. To this end, public assistance and legal reforms should be devised to promote partial relocations of industries.

6. Creation of centers of industrial development (in the style of the manufacturing hubs established in the United States by Obama's government), with the active partic-

ipation of central government, the respective governments of autonomous regions, private enterprises, and university research centers. These hubs would have the mission of promoting new and innovative industrial projects in which the public sector would act, along with the rest of the players involved, as a risk-capital entrepreneur.

7. Electricity. One of the most important factors in price setting in Spanish industry is the cost of electricity. According to Eurostat, since 2006 electricity prices have increased by 60 percent for industrial consumers, meaning that in 2014 prices were 21 percent higher than the EU-27 averages. This jeopardizes competition and even the very existence of high consumers of electricity in vital sectors such as steel working, chemicals or metalworking.

8. Entrepreneurship. Spain offers a large number of programs and almost infinite specific measures to assist entrepreneurs to embark on or develop their activities. But there is no genuine policy in this respect. It is essential that there is coordination between programs, while a private-public support network should be created that is capable of ensuring multisectoral assistance to accompany new enterprises from first contact to the end of their second or third year of activity.

9. Financing for SMEs. According to the European Central Bank, Spain is the EU economy where there is the biggest difference between the financial costs shouldered by large companies and those of SMEs (almost 280 basic points). The European Central Bank (ECB) claims that in 2014, Spanish enterprises paid an average of 4.6 percent on their loans, while in Germany this figure stood at 2.9 percent, and at 2.3 percent in France. In the future, it will be necessary to reduce the almost total dependence of SMEs on bank financing by strengthening the until now anaemic alternative stock exchanges: the MARF (Mercado Alternativo de Renta Fija) and the MAB (Mercado Alternativo Bursátil).

10. Coordination of industrial policies with the Autonomous Regions and their links to the smart specialization platforms of European regional policy, as well as with regional programs in innovation, technology, and competitiveness, as set out in Horizon 2020 by the European Commission.

Roberto
Velasco

Professor of Applied Economics
at the University of the Basque Country



TALK ABOUT THE FUTURE

Rosa María García

President of Siemens Spain



Does the Spanish economy need to advance toward a new economic model?

Yes, most definitely. Spain needs to rethink the type of country it wants to be. Thank God we have a lot of strengths such as the tourist industry. Unfortunately, in other economic areas like construction a bubble was created that must never be repeated. Spain ought to have an economic outlook based above all on innovation, differentiation, and industry. The industrial sector has dropped some thirty basis points since the 1960s, and a great deal of employment has been destroyed during the crisis. This has left industry accounting for less than 15 percent of GDP, compared with those countries that have better weathered the crisis, where industry accounts for at least 20 percent of GDP.

Does Spain need to have an industrial policy?

We should base the development of our industry on various factors. The first of these is the capacity for differentiation. Rather than giving way to the “pound shop industry,” we should create something with high value added” investment in R&D companies. If we compare ourselves to countries like Germany, we can see that our businesses invest 1.2 percent less than their German counterparts. Increasing private R&D is one of the most important areas in which we are lagging behind. We have to create a “pull effect” among the large multinational

companies based in Spain (whether they are Spanish or foreign) by means of an open innovation method that will allow us to innovate at a faster rate, involving smaller companies and favoring the incorporation of innovation processes into these companies.

Given that we are 34 percent less productive in our industry than the rest of Europe’s nations, we have to allow enterprises to boost their size and productivity. It is important that we find a less bank-focused way of funding industry, encourage exports, and improve technological investments, since these are now antiquated. Promoting key industrial areas for the consumption of Spanish industrial products and assisting in their internationalization is also an important task.

Are Spanish markets in need of further liberalization?

More than liberalization what is needed is a single market, but this will continue to be a chimera while EU laws—and even municipal laws—continue to be so different, something that makes doing business more complicated. We also need stability in our regulatory framework. In the case of energy policy, for example—and, above all, in renewable energies—an image has been projected to the outside world that conveys a lack of stability in terms of the agreements and regulations established in the past.

Why is Siemens investing in Spain?

We have found that there is ample talent in Spain. Our collaborators are very competent in technical matters. They strive for excellence and take good care of our clients, who recognize this fact. They are tremendously innovative. We work closely with some of Spain’s large engineering companies, such as Abengoa, Técnicas Reunidas, and Isolux, and we enjoy very satisfactory and productive business relations with them. Thanks to Spain’s geographic location and the capacity for integration of the large international companies we find here, we are able to take our technology to Latin America, Africa, Australia, and Canada. Moreover, the country’s climate, the fact that it is a welcoming country, and the legal security it offers are important factors that have encouraged Siemens to invest in Spain.

“Rather than giving way to the ‘pound shop industry,’ we should create something with high value added”

Jorge Sendagorta

President of SENER



What changes do you think should be made to the sectoral distribution of economic activity in Spain?

I personally am not very keen on the idea of a country that depends excessively on climate and tourism—no matter how favorable the weather—or the restaurant trade, although recently food is a truly extraordinary and innovative industry that is experiencing a colossal boom. Industry and technology are very important, and they are areas where Spain has lagged behind somewhat. In a world that is changing at an extraordinary speed, we should not be in a position where we merely assimilate technologies developed by others because we are behind, although there is no doubt that we are trailing less in technology than before. But it is terrible that countries like Korea, China, India, or Mexico can snap up opportunities that we have not been able to take. Industry is the source of high-quality employment: these are jobs that require more training, and are better paid and more stable than those created in other sectors. We have some decent sectors that are pretty well developed but they do not have a sufficient weight overall to yield adequate industrialization. In fact, the weight of industry within the Spanish economy has fallen considerably over the last 15 years. I would like us to return to levels of at least around 20 percent of GDP.

Do we need a reindustrialization policy or a new industrial policy to achieve this?

It’s all very well to let the market do its job, but the truth is that in many sectors the countries we are competing with do not leave everything up to the market, intervening in

mitment to helping industries develop a series of next-generation products, while the industries themselves also pledge to make significant investment. In Spain, the state has had much closer ties with construction or energy companies, for example. Meanwhile, its links with industry have been very, very weak.

SENER’s market is increasingly international. Does this create a problem of dimensions and capacity when competing abroad?

Not having a domestic market is an enormous problem over the medium and long term. It is true that Spain made a generally extraordinary effort to develop infrastructures and equipment between 2000 and 2012, approximately, with new airports, high-speed rail, LNG terminals, combined cycle power plants, renewable energies, updating all of the country’s refineries, and so on.

“In Spain, the state has had much closer ties with construction or energy companies than with industry”

one way or another. For example, in France the state has very strong ties to industry. There are other measures that aren’t to do with protection or complicity but rather with direct promotion, and we also have to compete with countries that use those kinds of measures. For example, the United Kingdom has an aerospace technology training program that we really envy at SENER because it is a long-term commitment, over ten years, with state com-

This has created a store of knowledge and know-how, a whole catalogue of recent references, that has placed Spanish industry, engineering, and construction in an optimal position to compete abroad. But we need opportunities in Spain if we are to commit to new undertakings. And this lack of opportunity will be felt, eventually. We hope that this situation doesn’t last long, but it is already noticeable.

TALK ABOUT THE FUTURE

Fernando Carro

President of Arvato (Bertelsmann)



How important is the cultural industry to Spain?

Spain is one of the most important countries for Bertelsmann, along with Germany, the United States, the United Kingdom and France. What's more, apart from the economic relationships we have with our companies and businesses in Spain, which employ more than eight thousand people, there is also a strong affection and emotional bond. The cultural industry continues to be very important to Spain and could become more important still; but equally it could also come close to disappearing. This is because Spain is, unfortunately, the European country with the highest level of digital piracy. If the cultural industries are truly going to develop on the digital level—such as in the United States or other countries—then we run a serious risk of losing a substantial proportion of this industry, unless we make efforts to tackle digital piracy. Some 80 percent of Spaniards admit to having downloaded pirate contents. It is an issue that requires education and awareness raising. Without a doubt, people here do not understand or believe that they should have to pay for something that has a value.

Is it significant that an increasing proportion of this cultural industry is the property of foreign companies?

I don't consider the industry to be mostly, or increasingly, in foreign hands. And even if this were the case, I wouldn't see it as a bad thing, considering that the world today is much more globalized. Rights are ever more global, and for the world of the Spanish cultural industry, stronger relations with the rest of the globe are a good thing. This is, above all, true of the Spanish language, which is a great asset whose value must be recognized. Perhaps foreign and Spanish capital together can sell more worldwide than Spain can on its own.

What do people ask you about Spain when you go to Berlin?

What they are puzzled about—and they ask me about it again and again—is why there is a 50 percent youth unemployment rate. This is what worries them. As a German company with eight thousand workers in Spain, we try to create projects to further promote youth employment, whether by employing talent from the university, supporting vocational training both as an enterprise and as a foundation, or with the project "Tú eres tu futuro" ["You are Your Future"]. This is what most worries German company directors when they come to Spain.

Language is essential, but aren't we focusing too much on Latin America?

Spain undoubtedly has a great advantage in its language. It is very focused on Latin America (which is a good thing), but it is missing a greater emphasis on Asia, for example. Asia concentrates the greatest number of inhabitants and the greatest proportion of the world's GDP. And Spain does not have a strong presence in Asia, either in the cultural industry or in any other kind of business sector.

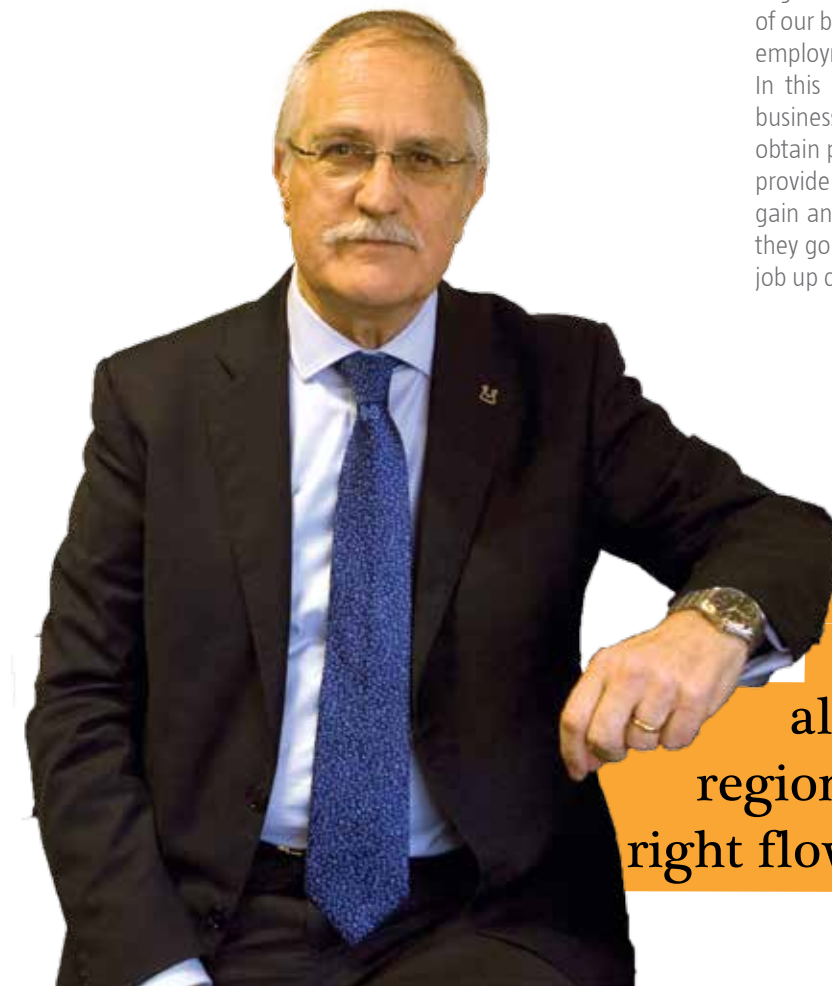
Is there a strong enough work ethic in Spain?

No, there isn't. And we have to demand a work ethic of our young people. I tend to tell the young people with no education or experience that we have taken into our company that they will never get anywhere without hard work and effort. There has been a bit of a proliferation of the "big break" culture, the get-rich-quick scheme, money for nothing, getting on in life because of the contacts you have as opposed to the work you put in. I am a fan of getting somewhere based on merit.

"The cultural industry is very important to Spain. It could become even more important, but it could equally disappear because Spain is the European country with the most digital piracy"

Javier Sotil

President of MONDRAGON Corporation



Do we need less industry in general and more clusters?

The concept of the cluster also has a sectorial aspect. It consists in the development around a certain sphere or activity of enterprises that seek to find their place and their way of participating in the sector. So in the end, the whole of the value chain ends up situated in this sphere or activity. The Basque Country has experience of this, and although clusters aren't always going to work just by definition, they have yielded some very interesting results, such as the car component cluster in the Basque Country, which is a global landmark in its field.

Should we focus on certain sectors and regions when developing our industry?

A good understanding, industrial culture and years of experience in each and every one of the activities that make up the value chain of any particular sector cannot be achieved merely through investment. There are regions and nations that are particularly well-prepared for industry to proliferate. It would be a mistake to try to boost industry in all of Spain's autonomous regions. Industrialization cannot just be a political objective: it requires a culture and infrastructures that take a long time to build

up. We have to plant the right flower in fertile soil. If we invest all our efforts in places where there is no industrial fabric or culture, 50 years might pass before we achieve a solid starting position from which we can compete. Meanwhile, if we focus on any given industry without training the professionals that we need and without the appropriate industry culture, it will be very difficult for us to be competitive. We must focus our efforts on developing industry in places where there is an industrial fabric, supporting and specializing in those sectors in which we are or can be competitive, working to move up the value chain. We are the world's biggest olive oil producing country, and yet Italy is the country with the best sales figures. Each region has to carry out an in-depth analysis of its value chain and think about how it can move up the scale by playing to its strengths.

Should we place a greater emphasis on technical and science degrees?

Of course. In Spain there are no engineers to hire, and it is generally difficult for us to find the professionals that we need. If I need 200 engineers and they give me 200 lawyers, it's a bad start. What is needed is further development of dual vocational training, as well as efforts to align the professions we train students in with the needs of our businesses. Such alignment would help to improve employment rates and the level of training achieved. In this sense, better contact between universities and businesses would be a good thing, given that in order to obtain professionals in the jobs required we first need to provide a professional perspective, allowing students to gain an idea of the job itself. And this is achieved when they go to work in a company and get experience of the job up close.

"It would be a mistake to try to boost industry in all of Spain's autonomous regions. We have to plant the right flower in fertile soil"

TALK ABOUT THE FUTURE

Javier Targhetta
CEO of Atlantic Copper

What is an industrial policy? Does it mean supporting sectors or leaving them flourish on their own?

I am more in favor of creating favorable conditions to strengthen industry and encourage new investment, both to help existing companies expand and encourage new companies to open, whether under foreign or national ownership. Favorable conditions mean conditions that generate competitiveness, not just in terms of costs but also in terms of regulatory competitiveness, in the sense of ensuring more stability and security in the legal system. In general, investments in industry tend to be very long-term affairs, and this means that numerous changes to regulations can generate disquiet, mistrust, and the withdrawal of investment. Of course, political stability is essential to ensuring that domestic and foreign investors can feel confident.

Do Spain's energy prices erode our competitiveness?

There is no doubt about that whatsoever. Energy prices for large-scale consumers are not competitive, and this is particularly true for businesses that have very high electricity consumption. Energy is considerably more expensive in Spain than in France or Germany, for example, our two most important competitors when it comes to major energy consumers. And here we find at least two paradoxical facts. For one, Spain probably has one of the best energy generation mixes both within Europe and worldwide, since our supply is incredibly varied and balanced. Second-

ly, spending per inhabitant on electric energy in Spanish households is one of the lowest in Europe, standing at €1.30 per inhabitant per day, the equivalent of your daily coffee. In general, when you ask people how much their electricity bill is, they don't know because it is very little. Clearly there are people for whom the smallest expense represents a lot of money, but this is not the case for the large majority of the population. In Spain there are two favorable conditions that mean the country's residents do not need to use a great deal of energy: a good climate (it isn't horribly hot in summer or horribly cold in winter) and a good hydraulic infrastructure with a very strong renewable energy component. We come in behind Germany, which has the biggest renewable segment in the world, and this is a good thing.

What priorities must Spain take on board when it comes to protecting the environment and sustainability?

We have to be at the forefront of the cleanup of industry and cities, and, of course, I'm referring to emissions into the atmosphere as well as the waste that ends up in our water. We also have to lead the way on the fight against climate change, reducing greenhouse effect gases (and specifically CO₂) and the application of the Best Available Techniques (BAT) set out in the provisions of the Integrated Pollution Prevention and Control (IPPC) Directive issued by the European Union, which is, in turn, based on the application of the best available technologies both in manufacturing and in environmental protection processes.

Do you think that Spanish markets need further liberalization?

This country is not very liberal, and there are some sectors that are not at all competitive, to put it mildly. Liberalization of markets is healthy and encourages people to put their skates on. Competition is the mother of all virtues, while oligopolies and monopolies—whether state or private—are the mother of all defects: they are terrible.

THE IMPORTANCE OF INDUSTRY

Many businesspeople agree with **Núria Betriu, CEO of Acció Invest in Catalonia**, that "the essentially industrial economies have better weathered the global economic crisis." This is why, she says, "we must work to revitalize industry as the most solid path for emerging from the recession, creating jobs and guaranteeing stable, long-lasting growth." **Betriu** believes that "our industry must offer more value added, more technological content in the future." **Alejandro Bengoa, Director-General of IK4 Tekniker**, thinks that "Spain should have a much clearer and more compelling industrial policy that will allow us to progress toward a much more powerful industrial model than the one we have now. Every job generated in industry generates three or four jobs in services."

Jorge Estévez, COO of thyssenkrupp Elevator for Europe and Africa, takes the following view: "Industry should be a fundamental part of our drive for sustainability in the Spanish economic model, since industry generates jobs that offer better quality, knowledge and competitiveness, and are more sustainable than the jobs found in services." He continues, "It has a pull effect on services, since many of these stem from or feed off the activity of the industrial sector." Nevertheless, he also points out that "Spain is not big enough to do everything, so we have to focus primarily on the sectors in which we already have some strengths and a high level of competitiveness, such as in the car industry, railways, aeronautics, infrastructures, construction and tourism. As a secondary focus we should try to capitalize on our so-called national champions. We have some leading companies in the spheres of banking, insurance, telecommunications and energy who can pull the whole underlying industrial fabric along with them."

But **Jon Azua, President of e-novating lab**, thinks that "there is no lead industry in Spain, only companies that are leaders. There has been some response to the demands of certain leading companies, but no action has been taken or strategy formulated to deal with 100 percent of the issues affecting these industries as a whole."

José Longás, CEO of BSH Electrodomésticos España, observes that in this country "there hasn't been an industrial policy since the industrial restructuring carried out by the Socialists at the start of the 1980s. Since then, industry's weight as a proportion of GDP has declined. It currently stands at 13 percent. And it is said that anything below 20 percent is a disaster. A plan has been created but nothing has been done. And during the crisis we saw that industry was reasonably capable of surviving such economic problems. Industry is what drives R&D. Tax incentives should be provided to encourage mergers between small companies. And promote R&D instead of cutting it back, instead cutting social costs for enterprises. Nobody has touched them. Nobody dares. And then we've got low wages. You can't live on €800 a month. You can't make a country like that. I would opt for reducing social costs and increasing those wages."

Nevertheless, faced with the question of whether the state should promote industry in general or specialize, **Aner Garmendia, Director-General of EGA Master**, thinks that "neither the state nor institutions have the capacity to make the right choices when it comes to deciding which industry requires the most support. The first thing they have to achieve is a reduction in energy costs, which constitute a huge competitive disadvantage for Spain compared to our French neighbours, for example. Then they can turn to improving infrastructures, given that despite the significant advances of recent years,

there is still work to be done in this area. Finally—and, in my opinion, most importantly—they should focus on training and education. It is very likely that in 2017 Spain's GDP will be back to where it was in 2008—only with two or three million more people in unemployment. That is to say, production will be at the same level but with the input of two or three million fewer people. So there has been an astonishing increase in productivity. But what does this say about our previous model and the general level of training in Spain? How can we incorporate into the labor market all of these people who do not have the training they need to get on in enterprises that compete on the international level?"

"Spain needs to advance toward an economic model in which the sectors with the best prospects of international growth are given the greatest weight," says **Ignacio Mataix, Director-General of ITP**. "Industry must become the focus of growth once more." He cites civil aviation as a good example: "one of the few sectors in which there was no slump in investment in R&D and innovation during the crisis." As in the case of the United Kingdom, Germany or France, "a country demonstrates its commitment to an industrial sector when it is capable of maintaining R&D and innovation policies in difficult times, providing the sector with the budget it needs to continue industrializing, growing, and creating employment and wealth."

INDUSTRIAL POLICY

If we want to reach the European Commission target of a 20 percent industrial contribution to GDP by 2020, "we need to implement significant industrial development programs, make a selection of the sectors in which we really want to be competitive, and invest the necessary human, economic, and knowledge resources to achieve this objective," says **Antón**

THE BUSINESS PERSPECTIVE

"We have to create the conditions that will encourage new investment in order to expand existing companies and establish some completely new ones"



THE BUSINESS PERSPECTIVE

Valero, President of Dow Chemicals. Meanwhile, **Ángel del Valle, Executive President of Duro Felguera,** believes that “industrial policy has to focus on very competitive products offering a great deal of value added. If not, then it becomes impossible to defend our exports against products coming from other markets such as India or China.”

But do we need a reindustrialization policy? Not everyone is so sure. “We don’t want to be something we are not. At a time when history or time is beginning to speed up, we can’t do what other countries were doing 25 years ago, countries that have invested a great deal of effort over many years, for example in the space industry in which I work now,” comments **Elena Pisonero, President of Hispasat.**

In the opinion of **José María de la Torre, President of Hewlett Packard Enterprise,** “changes in society and in citizens’ behaviour in the technological sphere are producing a new economic model. The digital customer has had a greater impact on the technological agenda of the majority of organizations than any other ground-breaking element since the industrial age. This change in users and their way of consuming technology is the defining feature of the digital transformation.”

Jon Sierra, CEO of Ikor, considers that “the model is changing: we are shifting from organizations with fixed departments to process models in which the workflows increasingly touch upon other sectors. We need to encourage the development of hubs, partnerships, synergies and technologies that cut through the sectors of our economy in a context of specialization.” **Inés Juste, President of Grupo Juste,** calls for “more promotion of collaboration and association. These are hugely powerful: ultimately, in the industrial sector, the more control you have over the value chain, the greater your capacity to compete.”

Rocío Hervella, CEO of Prosol believes that “we still don’t have a value-added production model in Spain or policies aligned with that concept. We should undertake a benchmarking exercise of the country’s competitive advantages to determine the skills that we have and the skills we need to develop in order to be competitive. Starting from there, we can roll out all of our policies following a model of collaboration between the public and private sectors in the form of business associations.”

“Spain’s car industry must be strong. And why is that?” asks **José Manuel Machado, President of Ford Spain.** “Well, for two reasons. Firstly, we have been manufacturing these cars for many years and we know how to do it. The second reason has to do with our strategic location. Spain is no longer located at one end of Europe; rather, it is at the centre of many places and close to the transport routes of many components. We no longer only produce for the whole world but also are called upon to contribute innovations to corporations in a wide variety of markets.”

THE BASQUE EXAMPLE

Take the example of the Basque Country. “Everything fell to pieces here some 20 years ago,” **Asier Atutxa, President of the Port of Bilbao,** explains. “And since then, thanks to an industrial policy consisting of a well-defined strategy that could be sustained over time, we have achieved a balance between industry and the service sector which is much more similar to the models adhered to in the north. This example could be useful at the state level when trying to consolidate greater diversification in our sectors.”

So there is a regional dimension to the issue. “The development of industry should be based on the strengths of Spain’s regions, which have solid industrial foundations, promoting development in the sectors where we have most potential,” explains **Ale-**

jandro Bengoa. “Madrid, Catalonia, the Basque Country and the area of Seville are the Spanish regions with the strongest industrial base, the places with the best position in Spain to develop a solid industrial sector. They are home to Spanish multinationals capable of competing on the international level with a pull effect on SMEs and the development of a whole network of enterprises allowing the synergies that one should find in an industrial hub. It isn’t a coincidence that graduates in the Basque Country are qualified to a much higher level than the Spanish or European average. The Basque Country has a thriving industry that requires highly qualified people, and education ends up adapting itself to meet these needs.” Also from the Basque Country, **Javier Sotil, President of MONDRAGON Corporation,** points out that “industry is found in very few places in Spain. And where it is present, it isn’t a coincidence; rather, it is the fruit of generations of tradition. And efforts should be focused on these places.” He adds, “This has happened in the Basque Country, but the concept of the cluster has not been developed in Spain in general. We can’t all be looking in different directions. It is very important to learn from each other and share what we know, since this is what can help a set of entities complete and lead in their sector at the global level.” **Aner Garmendia** also thinks that giving some thought to clusters “is another matter yet to be resolved in this country, where everyone tries to fight their battles on their own and we have not been very good at collaborating, exchanging experiences, or tackling projects together.”

OTHER INDUSTRIES

Industrialization has new dimensions. **Óscar Leiva, President of Ebioss Energy** refers to the example of waste, the main contaminant emitting CO₂ into the atmosphere, the elimination of which “is a global problem that

people are now beginning to become aware of. The technology that we have developed here makes us pioneers. There are important needs to be covered on a global level. In areas such as the Middle East, uncontrolled urban development has been carried out without taking into account waste generation and its environmental impact, and this places us at an advantage that we must make good use of.”

Carlos Antón, Deputy Director at Egeda, is of the opinion that “the audiovisual industry and the development of carefully designed projects that offer high profitability are just some of the strategies that we are missing out on when we fail to cultivate and promote the activity of those who create audiovisual contents and an industry that isn’t understood.”

Juan Ignacio Vidarte, Director-General of the Museo Guggenheim Bilbao, believes that “the cultural industry should be considered a stamp of identity, something for Spain to be proud of, a fundamental sector: it is a strategic area within our economic activity and one of the spheres where Spain can have a competitive advantage. We should give a greater priority to, and further professionalize, the promotion and good use of our culture.” And, of course, it isn’t possible to talk about Spain’s culture industry without mentioning cinema. “People watch more movies than ever, but they also pay less than ever, although progress is being made in the fight against piracy,” says **José Luis Rebordinos, Director-General of the San Sebastián International Film Festival.** He also thinks that “the key lies in finding an alternative way for people to pay to watch movies. Until now, this possibility had not been fully explored, although many people were willing to pay. But the success of platforms like Netflix is changing perspectives.” In any case, “the best weapon against piracy is education.” With regard to the health sector, which, like many others, sits on the

fence between industry and services, “the solution lies in public-private collaboration,” claims **Iñaki Ereño, CEO of Sanitas.** According to Ereño, today “a privately-run hospital costs a local government less than paying for one out of their own pocket.” In order to put an end to the current inefficiencies in the health system, three changes are required: “It is necessary to unify and standardize the health service at the national level to eliminate imbalances; raise awareness among citizens of the fact that the health service costs a lot of money and that money must be used wisely; and bring management strategies in line with the private management model.” And while, until now, “health has been seen as welfare, as the provision of care for the general public,” he continues, “it has economic power, the capacity to generate innovation and create a new economic sector that is very important and has not been taken advantage of as yet.”

“A broad consensus is needed between the country’s politicians. The broader health project must come from public-private collaboration, since it is the only way of guaranteeing the sustainability of the system,” **Carlos González Bosch, President of Grupo Cofares** insists. And in relation to his sector, pharmaceuticals, he adds that “it has always had an image problem because it was thought that the medication supply chain generated a great deal of money for the pharmaceutical sector with excessive returns, and it isn’t like that. Medication is regulated to the millimetre, and that includes margins. Medication isn’t a cost but an investment in health. If we want to eradicate the most prevalent diseases, we have to allow enterprises to carry out research and innovate, and that costs a lot of money. So it’s legitimate and good for these enterprises to make some profit.”

One of the sectors offering investment opportunities abroad is the agri-food industry. In this sector, **Juan**

Luis Cañas, President of Bodegas Luis Cañas is clear that “we need to promote wine tourism,” although he also calls for the creation of a whole culture of gastronomy, as has been done in the case of culinary schools and culinary centers at universities, and support to consolidate Spain’s leadership in the sector. “Public support should be given to bring enterprises together, creating synergies that will allow us to further develop our viticulture industry.”

ROBOTIZATION

There is another aspect to be taken into account when it comes to industrial restructuring, and that is the increasing automatization and robotization of some industrial activities, and even services. For **Santiago Íñiguez, Dean of the Instituto de Empresa (IE) Business School,** “there is always a fear of innovation, but Moore’s Law also holds true, in that the increasing proportion of technological development means that work is being replaced at an unprecedented speed. Will Google’s new translation services replace simultaneous interpreters? It is possible that they will in the future.” Íñiguez suggests that “the problem is whether all of this development will lead to increased inequality, given that all this knowledge and power sits in the hands of just a few companies. It would be a good idea to promote competition and avoid excessive corporate concentration.” But “taking into account all the benefits provided by technology, it should be seen as offering an opportunity for human development as opposed to replacing it. We have to work out how we can construct a society where no one goes hungry, where there is a reasonable level of equality, spiritual or moral motivation.” He concludes, in a rather transhumanist vein, “I am confident that technology will form part of man. We will have a chip in our brains and artificial skin. We will be part-robot. Technology is not something disconnected from us.”