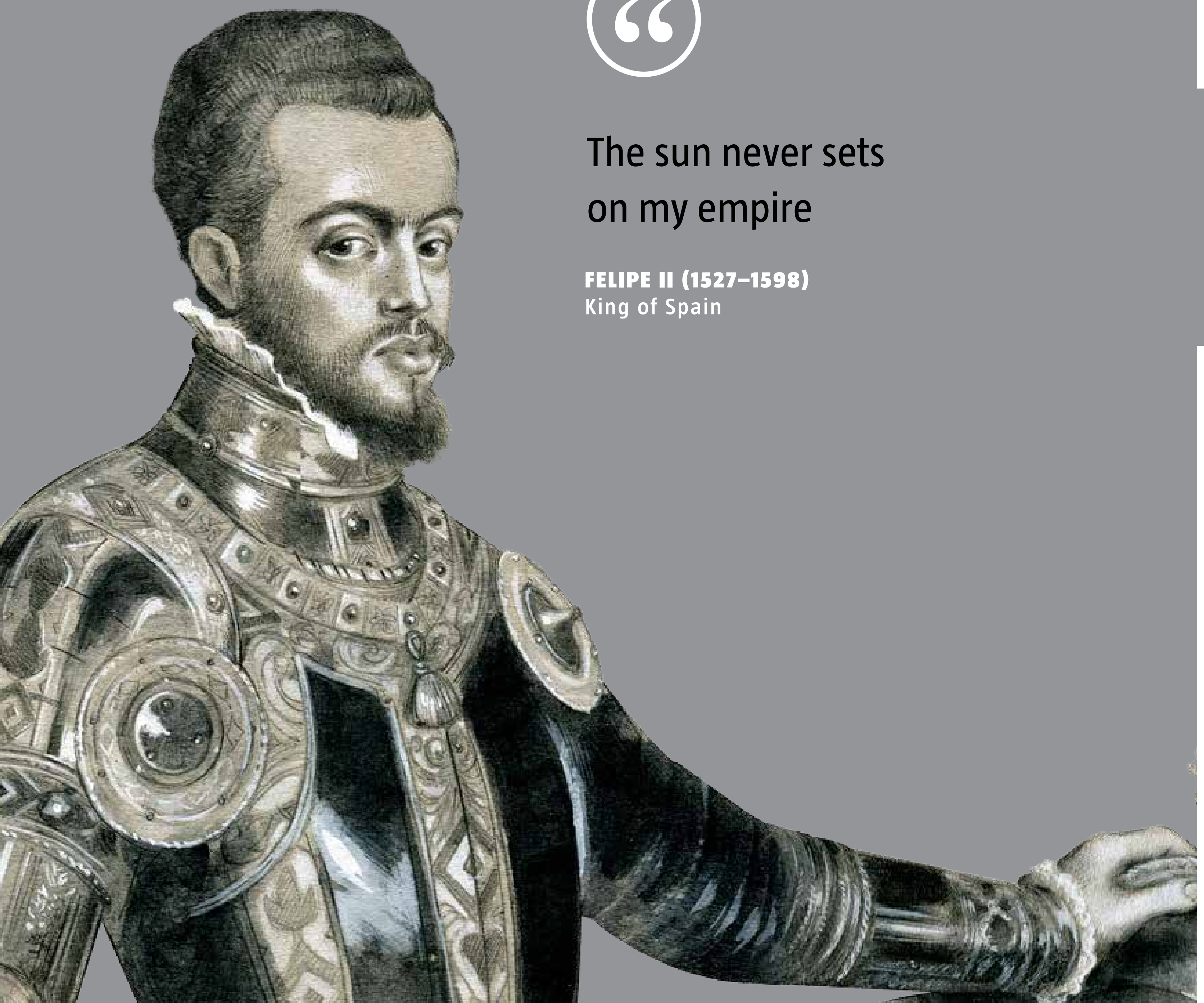

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The sun never sets
on my empire

FELIPE II (1527–1598)
King of Spain

STRATEGY SPAIN

DEFENSE POLICY AND INDUSTRY

03

DEFENSE: WE CAN NO LONGER DO MORE WITH LESS

Security and defense policy and industry must continue to be restructured in order to face up to some old and new threats and risks.

GENERAL DYNAMICS

Consolidating capabilities and the industrial base

By streamlining or transforming units and resources, or putting them on standby, Spain has been able to "do more with less." But this policy, which has been pursued by almost all members of NATO and the EU, is now entirely overstretched.

Andrés Ortega
Editor in Chief

Austerity in public spending has led Spain to reduce its defense budget, although it has begun to grow again in 2015. At less than 1 percent of GDP, Spanish expenditure on defense is among the lowest in NATO, and although one can add other budget items to this figure, such as spending on peacekeeping operations (there are currently 1,750 troops abroad on such missions), the total still falls short of 1.2 percent. Between 2016 and 2030, defense spending will significantly increase, but only because Spain needs to meet the payments due as part of the Special Armament Programs it signed up for in the 1990s, for systems that may not be exactly what we need in the future.

But all of this is numerical data, and the real question is: What capabilities does Spain need to face its risks, threats, and international obligations? Responding to this issue requires a truly strategic vision, the lack of which would hamper innovation, both in the sphere of military supplies and in other areas. During the Cold War, Spain had to deal with some risks and threats particular to southern Europe, but apart from that there was just a single vector. Now, the vectors have multiplied, and Spain has its own specific risks to consider: the country must attract its partners and allies to assist in solving them. This paradigm shift has other implications for the West in general: today, massive invasions into military operating theaters such as Afghanistan and Iraq can no longer be used to project military power.

Dwindling resources during the crisis meant military units that could no longer be trained, ships that could no longer sail, and planes that rarely took off the ground. In this respect, the situation has improved somewhat in recent years. The Spanish Armed Forces currently has 122,256 active soldiers (a figure just above the target of 120,000 on active duty set by the Defense Policy Directive). At the last Summit of the North Atlantic Alliance in Cardiff, the Spanish government committed—together with the other member countries—to move toward a 2 percent target in defense spending for 2024 (with 20 percent of that spending being invested in new equipment). A process is under way to transform Spain's Armed Forces with the establishment of a new Joint Forces of sixty-seven thousand troops (with a core of twelve thousand permanent troops and fifteen thousand each for the Army, Navy, and Air Force for rapid response or contingency operations). Moreover, Spain is to lead the NATO Very High Readiness Task Force in 2016, supplying a brigade of three thousand troops along with the Bétera Barracks in Valencia, which will contribute another one thousand troops.

By streamlining or transforming some units and resources, or putting them on standby, Spain has been able to "do more with less." But this policy, which has been pursued by almost all members of NATO and the EU, is now entirely overstretched, and even more so given the new and more complex geostrategic context.

AIRBUS DEFENSE AND SPACE 2015

PIRANHA 5 armoured vehicle from Santa Bárbara Sistemas, recently selected by the Spanish Ministry of Defense as its latest generation 8x8 military platform (left)

Airbus A400M military transport aircraft (right)

Some experts are of the opinion that Spain passed the point of where it could continue to do more with less two years back. The secretary general of NATO, Jens Stoltenberg, has asked Spain to make greater efforts both in terms of spending and in effective capabilities. Over the coming years, Spain will be expected to do more, but with more funding. The exact amount of expenditure required must be dealt with as a strategic consideration, despite the fact that political logic tends to generate a rivalry between the various budget items.

Spain's defense spending suffers from a chronic structural problem: some 70 percent of the budget is spent on staff salaries. This means that spending on materials is insufficient. There is also a lack of strategic plans for the future of the industry in the style of those drafted by France, Italy, and the United Kingdom, a fact that has even been pointed out by the main Spanish trade union confederations, Comisiones Obreras (CCOO), and Unión General de Trabajadores (UGT).

A domestic defense industry

Spain needs to have its own defense industry for various reasons linked to its strategic nature. For a start, there is no doubt that the country has to cover the needs of its Armed Forces and security forces, including some critical technologies that are of exclusively Spanish interest. But the defense industry is also important due to its turnover (1 percent of GDP, with almost fifty thousand employees, 50 percent of whom are in qualified employment), and because it contributes important knock-on effects in innovation: some 10 percent of defense revenue is invested in R&D and innovation. Without sufficient investment, Spain's Armed Forces could become obsolete in terms of their competitiveness. We cannot afford to lose five years in vain. This is not a commodities industry. Planning times for new defense systems are protracted, often up to twenty years. Moreover, it is an industry that needs public demand, and this has been reduced by 50 percent in Spain since 2008, although it is now gradually on the increase. The lion's share of investment goes to aeronautics (which accounts for 75 percent of its total revenue and 80 percent of employment), followed by the Navy. To this we can add the importance of exports, which account for 60 percent of the industry's trade, while 40 percent serves domestic demand—figures that have been inverted during the crisis. NATO and EU countries are the primary destination for these exports. Nevertheless, the products exported incorporate a great deal of foreign technology and therefore contribute a lower level of value added. This industry requires Spain to provide a stronger and more competitive technological and industrial base.

The crisis in the European defense industry is generalized. Orders have dwindled in almost all of the European states (-19 percent from 2001 to 2010), while investment in R&D in the sector also fell by 20 percent between 2005 and 2010. Thus, the Spanish case falls within general trends. Given the sector's fragmen-


Soldiers of the Spanish Armed Forces

National Police helicopter

tation, the bigger states with strong industries have proposed industrial consolidation in Europe, while the European Commission advocates liberalizing acquisitions to make progress toward a common defense market, which, depending on how it is approached, could be detrimental to Spanish interests.

Spain's defense industry has some strong points in its favor: advanced specialization, in particular in surveillance systems but also in air traffic control and simulation, and ample export capacity. SMEs have a crucial role in supporting innovation. Spain has a strong engineering sector. Nevertheless, it is increasingly common for emerging countries such as Brazil and India to demand technology offsets on Spanish exports to their countries, since their industries also want to learn. Some of Spain's weak points in the sphere of defense include fragmentation and the aforementioned dependence—in many cases, excessive—on foreign technology.

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> The public sector should promote the restructuring of the Spanish defense industry, consolidating the industrial base required to ensure this country's security

An end to full military autonomy

No European country can now expect to enjoy full military autonomy, either in capabilities or in the industry, and Spain may face some risks and threats that are not shared with other countries. The "Europization" of defense is inevitable, even though it is likely that future cooperation will still be between sovereign states that defend their national interests in this sphere. The question is how progress can be made in a fragmented market when competing with a sector that, in the United States, boasts a genuine economy of scale.

In terms of capabilities, a "European army" is a long way off. The true collective force is still with NATO, although the EU is making gradual advances. We cannot rule out new measures being taken between the EU states, making use of the so-called enhanced cooperation procedure at the heart of the European Union if the British refuse to participate. It is also necessary to revitalize the European Defense Agency, currently under the political direction of High Representative Federica Mogherini and Spanish executive director Jorge Domeq, following the stagnation of previous years.

In terms of industry, there is—still—no common European market for armaments or defense systems. States want to protect their industries and markets, and purchasing times are different in different countries, something that ought to be brought into alignment. The European Commission is pushing for liberalization in this sphere as part of its general Europe 2020 strategy. European Council meetings in December 2013 and June 2015 dealing with this matter yielded poor quality practical conclusions, although they did open the door to partial financing via European funds, in particular those dedicated to research, which could feed R&D and innovation in the sector in order to compensate for diminishing budget allocations on the national level. Nevertheless, despite the existence of some programs in which various European countries participate in a range of different structures, at present there are limits to such collaboration.

The problem for medium-sized industries such as Spain's is that the bigger industries such as the United Kingdom, France, Germany, and Italy are keen to maintain their dominance of sectors that yield value added, as well as the European funds that feed them. But it is not advisable for the Spanish defense industry to settle for acting solely a subcontractor or becoming the assembly plant for these countries, although this is what Spain has done with considerable success in the car industry, with a strong R&D component in Spain in the form of Nissan and SEAT. Neither should Spain exchange value added for production. But our country does have to commit to a European policy in the defense industry and set its sights on multinational projects in line with the country's interests that offer excellent opportunities for internationalization without destabilizing the technological and industrial bases of national defense. The industry should specialize more and focus on technological areas where it can assume a leading role, as well as reinforce its industrial bases with integrations between national companies or in cooperation with other international enterprises.

Dual-use technologies

The distinction between the military and civilian spheres is increasingly blurred, as evidenced by the surge in dual-use technologies. One way that Spain can advance is by increasing investment in this area. Dual-use technologies feed into cyber defense and cybersecurity, areas whose importance has grown in economic terms, providing protection to businesses and government buildings, as well as critical infrastructure. This is reflected in growing numbers of attacks. The first Spanish Security Strategy of 2011 and the subsequent National Security Strategy of 2013 included cyberattacks among the main risks and threats to national security. The year 2013 saw the approval of the Spanish National Cybersecurity Strategy. The strategy was produced by the National Cybersecurity Council, made up of representatives of the Cabinet Office, the ministries of the Interior, Foreign Affairs, Industry, and Defense, and spokespersons for other ministries and secretaries of state. A total of eleven ministries are represented in the Council. Previously, new bodies had been established such as the Joint Command of Cyber Defense of the Spanish Armed Forces or new tactical and operational cyber capacities created since 2005, including the Computer Emergency Response Team (CERT) among others.

In 2014, the European Commission designed a European strategy in this field, containing objectives and deadlines to be included in national cybersecurity plans, which Spain is also to produce. The EC warned that the large majority of ICT used in the EU are imported, a fact that might compromise European security and its industrial base.

But while the concepts are clear, even for Spain, the resources are not there to accompany them. Cybersecurity, which offers much in terms of industry, is not contemplated as a field of opportunity in the Industrial Agenda approved in Spain in 2014. Some attention is given to the sector of military R&D, which is also contemplated in the Spanish National Plan for Scientific and Technical Research and Innovation 2013–2016. The Spanish National Cybersecurity Institute (Instituto Nacional de Ciberseguridad, INCIBE) estimates the domestic market in cybersecurity in 2014 to be worth some €140 million. These are conservative figures when you take into account that the global value of the business reaches some €160 billion (and 8 percent of that total is accounted for solely by Israeli businesses). The defense industry in Spain faces various challenges, including the small size and scattered distribution of the majority of the country's enterprises. But there is also a huge capacity for growth in this area, given the necessary resources and correct management. One of the key concepts within the cyberspace technologies industry is the dramatic reduction of industrial cycles. In most cases, cycles lasting more than a year end in obsolescence. This represents a significant challenge in itself.

In short, the public sector should promote the restructuring of the Spanish defense industry, consolidating the industrial base required to ensure this country's security. A domestic defense industry must nevertheless be based on a strategic concept and culture of security and defense, with the identification of risks and threats within public authorities and the general public, in a country that lacks a security culture. The understanding and support of the general public will be absolutely essential to this task.

DEFENSE POLICY
AND INDUSTRY

Julián García
Vargas

Ex-Minister of Defense and Honorary Chairman of the Spanish Association of Defense, Aeronautics and Space Technology Companies (Asociación de Empresas de Defensa, Aeronáutica y Espacio, TEDAE)

A Spanish strategy of European dimensions

Spain does not want to depend entirely on foreign supplies, but the size of its Armed Forces and economy mean that the country cannot go it alone.

The Spanish defense industry is affected by some problems that it shares with the rest of our industries, and other issues that are specific to defense. There are few large local companies, production runs are small, and the number of products on the market is large. One portion of the sector is dominated by multinational enterprises, principally by Airbus in the aeronautics industry.
Spain has experience in exports: more than 65 percent of the country's production is sold abroad, and Spain is the world's fifth largest exporter in defense, mainly in transport aircraft. However, the country has not achieved sufficient sophistication in its marketing, and as a global brand Spain is less well known than Israel, France, or the United Kingdom. In the past, domestic public acquisitions did little to favor Spain's visibility as an exporter or promote a dual-use focus on technology, both of which have happened only recently in this country.
Among the country's strong points are its excellent capabilities in engineering, design and implementation; a notable specialization in important niche markets (simulators, radar, transport and refuelling aircraft, ship design, air defense and control, coastal and border controls, and so on); experience in international programs; a specialized workforce; and competitive costs. This is a pretty impressive list, given that Spain's is a medium-sized industry.
But like other countries, Spain is facing a contradictory situation. On the one hand, it does not want to depend entirely on foreign supplies, while on the other, the size of the country's Armed Forces, economy, and technological capabilities mean that it cannot guarantee an entirely independent supply.
This contradiction is less acute in Europe thanks to the continent's vast experience with multinational programs and the single market, which is also making headway in this area by means of European Commission initiatives. Nevertheless, and as one might expect, no one wants to forego a sector that, apart from having strong links to national sovereignty, generates advanced dual-use technologies that drive a sophisticated industry.

The effects of the budget crisis

The defense industry has had a particularly difficult time in Spain over the last six years. The economic and fiscal crisis has reduced defense spending by some 80 percent in Chapter VI of Actual Expenditure from 2008 to 2014. This drastic reduction is all the more important given that for some years now defense spending has been excessively low: in 2013, it stood at 0.94 percent of GDP, one of the lowest levels in the developed world. This situation has delayed the development of new programs.
These restrictions have hit especially hard because they have coincided with the maturity and settlement period of the so-called "Special Programs." These programs undertaken in the 1990s had the right approach, combining the modernization of armed forces with industrial and technological development. They involved the purchasing of fighter and transport planes, ships, and land equipment to maintain army capabilities on a par with our allies.
This issue has been the subject of some controversy. It is possible to argue over whether the exact number of transport or combat planes acquired and the pace of their delivery were well judged, but the global focus of these decisions was nevertheless the right one. The government is therefore right to make the payments due with extraordinary budget appropriations.
Spain has important duties in collective security, and one must not forget that this kind of program requires two decades to define, design, produce, and implement. During this period, some security situations may change, with a shift in needs and in the economic or budget framework, as has been the case in Spain.

POINT

European Commission initiatives

The European Commission cannot get involved in the sphere of defense, but it can intervene in the spheres of industry and public procurement in the form of restrictions that shape the special nature of the defense industry and its relations with national sovereignty. The EC's initiatives have led to the Public Procurement Directive of 2009, which imposes European standards for public procurement on the security and defense markets.
The directive is potentially detrimental to Spain when set against other more powerful manufacturers such as France or the UK, although this problem could be overcome with an industrial strategy based on specialization and the preservation of industrial and technological capabilities. Spain might also benefit from access to regional funds for dual-use technologies.

The foundations of a Spanish strategy

Spain needs a strategy that combines the realism of military objectives and national security with a view to the future, the country's budgetary options, and a firm commitment to specialization. Budget commitments are difficult to establish at this time, since Spain has signed up to a Financial Stability Program with the eurozone, which shall remain in force until 2017 and commits the country to reducing the deficit, and thereby to austerity in public spending. Nevertheless, it is possible to work on potential scenarios for the remainder of this decade and the next.
It is possible to start boosting specialization by defining a Spanish Strategy for Industrial and Technological Capabilities in Defense and Security, with a long-term framework for policies concerning the defense industry. The central pillar of this strategy comprises lines of action in three key areas:
1. The industrial and technological development of strategic sectors for Spain in the sphere of security and defense. This involves the drafting of a catalogue of industrial sectors and strategic areas, to be updated on a regular basis. This document would be used to create plans to support R&D and innovation and reindustrialization, financing instruments, and purchasing and maintenance.
2. Protection of industrial assets considered to be irreplaceable. This consists of drawing up a list of assets and technological areas considered to be strategic in the form of a catalogue.
3. Acquisition of systems and services also considered to be strategic. This would involve establishing a strategy for the award of contracts with regulations on the definition and purpose of acquisitions and the exceptions to the general principle of competition, based on the reference framework of the catalogue of strategic areas.
Documents of this kind have been drafted in most European countries with a significant defense industry, although this fact has not been widely publicized. This list would not need to contain everything Spain produces; rather, it should list the items considered to be relevant to our security interests.
As a very general guideline, the following items should be included: technological capabilities for the design and production of ships and integration of associated systems; the design and integration of systems, new materials, and the maintenance of aircraft; sea and land border control, the control of airspace, and critical infrastructures; intelligence, surveillance, and reconnaissance; cybersecurity and cryptography; command and control, coordination, and communications; training systems (simulation) and maintenance and modernization.
The future of Spain's defense industry lies in extending and increasing the sophistication of its offer to encompass the sphere of security, taking advantage of the area where security and defense and the country's positive experiences in these fields coincide (Military Emergencies Unit, Civil Guard). It also involves taking advantage of Spain's excellent and competitive engineering sector, which has a proven capacity to define and design, as well as the niche markets where the country has achieved results, such as simulation and new materials. In order to maximize the potential of these possibilities and of Spanish exports, it would be necessary to build a more far-reaching, detailed, and stable collaboration between domestic companies and the multinationals present in our country.
Finally, there will be few programs in the future that do not entail a certain level of cooperation between European countries. It is essential that Spain is prepared to achieve a maximum presence in such programs.

COUNTERPOINT

Enrique Fojón

Sub-Director of the Cyber Security Think Tank THIBER

A greater focus on the fifth domain: cyber technologies

A national industrial fabric is fundamental to Spain's security and economy. Cyber defense is a growing sector capable of generating numerous highly specialized jobs.

Twelve years have passed since the presentation of the Strategic Defense Review. While the majority of its provisions will soon be forgotten due to the fact that it was launched during the last year of the parliamentary term, along with the change of party in government at the start of 2004, some of the achievements of this review will serve to guide the transformation process in which our Armed Forces are currently immersed in an attempt to adapt to a world that is constantly changing. Three parliamentary terms later, and following numerous changes in the strategic framework, Spain's domestic situation, and the state of technological development, the timeline for the implementation of that document has already passed. In this context, it would be advisable for whatever government emerges from the next elections to develop a new route map with the highest possible level of parliamentary support based on the general lines set out in the National Security Strategy of 2013 and the National Defense Directive due to be published in 2016. Any new government should also define the pillars of defense in our country and the model of Armed Forces for coming decades.

Following the landmark launch in 2012 of the Spanish Security Strategy and the drafting of the first sectorial strategies (in maritime and cybersecurity), now is the time to continue with the construction of a security network that will bring us up to speed with our neighboring countries.

During recent years, the Armed Forces have been immersed in crises and conflicts of different kinds, from conventional operations to a wide range of stability operations, military support for reconstruction activities, counterinsurgency, or counterterrorism. They have entered into combat with similar adversaries, from regular armies and a range of special or hybrid forces, and have seen military technology evolve (in terms of intelligent weapons, systems manned by remote control or artificial intelligence, nanotechnology, or cybernetics). At the same time, our Armed Forces have seen the increasing dependence of advanced armies on cyberspace, since its capacities in reconnaissance, observation, target acquisition, command and control, communications, or missile guidance are carried out online, and therefore depend on broadband, making them vulnerable to physical destruction and cyberattacks.

In this sense, the growing convergence between Armed Forces capabilities and their dependence on information and communication systems has not only led to the emergence of cyberspace as the fifth domain of operations (after land, sea, air, and space); it has also led to the emergence of a new cybernetic and electromagnetic battlefield.

Given the consolidation of cyberspace's position as an environment enabling military operations or a battlefield in itself, it is fundamental that our Armed Forces acquire cyber capacities that will permit them to operate efficiently in this dimension. Today, Spain's Armed Forces capabilities depend on cyberspace, but they require further integration and have not yet reached a sufficient level of maturity. Consequently, any new government route map should include cyberspace in the new structure of the Armed Forces and within the set of capabilities to be developed, taking into account at all times that cyberspace is a domain in its own right that assists military operations.

Indeed, practically all modern military technologies—from unmanned systems to combat robots or intelligent weapons—use cyberspace to transmit the data required for them to function efficiently. Therefore, when planning it is not only necessary to take these needs into account: we must also consider requirements related to connectivity, the resilience of systems and networks, and even the broadband required for these systems to operate.

The last of these items is particularly important because the Armed Forces must be consolidated as a single and joint force in order to operate efficiently in cyberspace or use it to facilitate military operations. In fact, since the entry into force of Organic Law 5/2005 on National Defense, significant progress has been made in consolidating this structure. Moreover, the launch of the Joint Forces last year and the more recent Ministerial Order on Defense 166/2015 governing the development of the basic organization of the Armed Forces, are positive moves in this direction. In fact, this standard consolidates the integration of the Joint Cyber Defense Command (Mando Conjunto de Ciberdefensa, MCCD) within the joint structure, since it is considered to be a command in its own right within this new Joint Force. From now on, any Spanish military operation will also be planned and guided in cyberspace.

Nevertheless, it is important to highlight that, given the long and complex process required to develop military capabilities, the resources available to our country in terms of military cyber defense are still very limited and barely operational. Moreover, important corporate stumbling blocks remain to be overcome in order to consolidate a Joint Force, and these have a negative impact on the connectivity of the Armed Forces. In this sense, it is crucial that we have a more numerous and better prepared cybernetic force at our disposal.

Finally, the domestic cybersecurity industry represents another hurdle in the consolidation of cybernetics in both the Armed Forces and for the rest of players involved in our country's security. A national industrial fabric is vital for various reasons not solely economic in nature. Cybersecurity is a growth industry capable of generating many highly specialized jobs, reducing the brain drain of Spanish talent to other countries. It is also a strategic sector whose weaknesses compromise both national sovereignty and security. Nevertheless, today's reality is quite different. On the one hand, the Spanish industrial fabric is thin and fragmented: there are an estimated one hundred Spanish companies providing mainly cybersecurity services with a total turnover of almost €120 million in a global market that moves some €140 million a year. Meanwhile, there is no clear or stable industrial or defense policy to provide these domestic companies with a trustworthy brand under whose auspices they could grow and establish themselves with the aim of creating an independent Spanish cybersecurity industry that is competitive and capable of providing the services and systems our country may need in this area. Moreover, in contrast to other industries, R&D and innovation and implementation cycles in cybernetics are unusually short, meaning that many products can become obsolete in a matter of months. Consequently, the national cybersecurity industry not only needs to make significant efforts in technological innovation, it also needs to be sufficiently flexible to manage changes and provide appropriate and timely technological solutions.

All of this means it is essential for our country to issue a new Strategic Defense Review that covers both the disruptive potential of new technologies and the dimension of cybernetics. This is the only way that Spain can establish parameters for action over the long term that will allow the country to acquire advanced cybernetic capacities and incorporate them into Spain's military operations on land and sea, and in the skies.

TALK ABOUT THE FUTURE

Fernando del Pozo

Admiral of the Spanish Armada

“We have not reached our limits. We need to spend more and in a different way”

Have we reached the limits of doing more with less? Or do we need to do more with more, or less with less?

We have not reached our limits. Defense spending of 1 percent is half of what all the allied nations (and not just Spain) have pledged on a regular basis for years. We are very far from meeting our basic needs in matters of defense. Expeditionary forces are more expensive than conventional forces, but we need them because what we’re facing at the moment or will face in the near future is not conventional warfare. We will have hybrid warfare and expeditionary warfare, and defense will have many functions that are not strictly war as such, but none of these will be the traditional warfare of the past involving conventional forces on our own territory or on borders. We need to spend more and in a different way.

Do we need to concentrate more on spending or capabilities?

Capabilities. There have been various attempts to specialize, but this has never been achieved because all nations maintain their sovereignty and nobody wants to have to depend on another ally, who may decide not to participate at any given time. Nevertheless, the truth is that the community of interests that we have in Europe is striking, and it is likely that something that interests Italy will also interest Spain. We could even include the Scandinavian countries in this circle of countries.

What should be the priorities of Spanish defense policy?

They are no different to those of our other allies or other members of the European Union. What we need to be able to do is sustain expeditionary interventions in relatively small, distant places. One manageable objective would be to have the capacity to engage in a couple of light expeditionary operations at the same time, with the possibility of immediate participation. It’s not cheap, but it is within the limits of acceptable costs. The English have coined a very interesting term: “establish presence without occupation, coercion without embroilment.”

Some 70 percent of Spanish defense spending pays for staff. Is that excessive?

Yes, without a doubt. The majority spend around 50 percent. I am not saying that we should pay staff less; rather, that more should be invested in equipment, which should account for a significant proportion of the budget.

Do we have to be more competitive in the defense industry? Do we need an increasingly European framework?

The various mono-national industries that had the monopoly on fulfilling all aviation needs at the national level have ended up coming together as Airbus, which is pan-European and tremendously competitive. Nothing similar has happened in the naval industry, which is surprising, and a shame. We still have “national champions,” which is terrible because none of these companies have international stature. This has happened because the naval industry is more staff-intensive and labor-intensive than others. And, of course, nations do not want to see the most intensive part of the work go to another because unemployment is a significant problem. There isn’t a European champion in the land-based sector either, but there the problem is different because there is a far greater diversification of systems. The naval sphere should find it easy to follow the example of aviation, and we should concentrate on making that happen. We need to make a sacrifice now if we want to reap the rewards in some years’ time.

Is it possible to keep doing more with less?

When you compare what we are doing now with what we were doing five years ago, you realize that we all do an infinitely greater number of things these days. We send more emails, we make more calls, and so on. We are condemned to always doing more with less, I’m afraid.

In my eyes, the important thing is to do more with less but also to do it differently and quicker. The world is changing at breakneck speed. Who would have thought five years ago that the problems facing the world today would be DAESH, or immigration from Syria?

If we continue developing our materials via the same cycles and timeframes as we have done up to now, we will miss the bus. We need to focus on doing more with less–and faster, taking advantage of technology.

What does Airbus and its industry contribute to Spain?

It allows the country to be at the cutting edge of technology, with access to the most innovative technologies and composite materials, as well as markets and all of the associated industrial fabric. We are not alone: there’s also the whole industrial fabric that we generate around us (support enterprises, subcontractors, and so on). But not a lot of people know that. I can’t count the times that we have brought people to visit the Getafe plant and they are absolutely amazed at what we’ve got here: the technology, the know-how, the highly skilled people... All of this excellent know-how enriches the country and generates employment. There are twelve thousand people working in our group in Spain.

Which comes first: civil technology or military technology?

We have the capacity to produce six hundred aircraft a year, as we do already. This is a technology that cannot be improvised. The production chain, the supply chain, the coordination of logistics: this is all know-how. From this point of view, in technological know-how in production chains for complex products, the civil branch is ahead of the military branch.

But when it comes to pure systems and equipment technology, the military side certainly has the edge there.

What role can Spain play in defining this European industry?

It is part of the Airbus Group, which is the biggest European defense company. We have Spanish directors in high-ranking roles in the group. There isn’t an Airbus Spain, an Airbus France, an Airbus Germany. There is just the Airbus Group. The headquarters of the military division are in Spain and the headquarters of the commercial division are in France. But our military aviation isn’t Spanish: it’s European.

Do you think Spain needs a new industrialization policy?

Of course. We have the skills here; we have young people, and their knowledge and training, and I would like Spain to have a role in the world as an industrial country. We have everything we need to create powerful industry, and I’d like to see a resurgence of that Spanish industry, contributing what we have at Airbus to that effort. I think it is crucial that the aerospace sector is understood to be a strategic sector in Spain. Although this has often been said, it has not yet been acted upon in any concrete way.

Action has been taken in other countries with evident success. Efforts are being made in this direction, and I hope that an important agreement will be reached between the sector and the government in the form of a “Guide to the Aeronautics Sector.” This would be a vital first step on the road, but there’s a long way to go and it will be up to the next government to make sure things happen.

Fernando Alonso

President of Airbus Spain

“I think it is crucial that the aerospace sector is recognized as a strategic sector in Spain. Although this has often been said, it has not yet been acted upon in any concrete way. Action has been taken in other countries with evident success”

TALK ABOUT THE FUTURE

Emma Fernández

Director-General of Indra*

What does it mean for Indra to be a company working not only, but also in the defense industry?
Indra is fundamentally a technology company. Moreover, we deal with very complex technology that takes in the communications sector, IT, electronics, and now contents and process operations. Through defense and security the company has learned how to manage very complex, real-time technologies that we have applied to other sectors of activity over the years, including traffic, transport, infrastructures, and even energy and the financial sector. In the case of a company like ours, the defense and security sectors have given us some very important knowledge and capabilities in basic technologies, methodologies, and the development of highly qualified professionals, as well as in spheres of innovation that have also been decisive in terms of their applications to other sectors of activity.

Do we need to move toward a greater European concentration of defense industries?
The only formula for survival is precisely that of internationalization, of size and competitiveness. In a country the size of Spain, it is clear that this cannot be achieved in all spheres of activity. The army that is being created from a selection of essential capabilities and long-term strategic planning may offer us the possibility of sustaining competitiveness in selected segments. However, when it comes to the set of activities that are required to maintain the defense and security of our country, Spain is already dependent on its allies and partners in NATO (Europe and the United States), and that is where we need to continue to forge industrial alliances that are sufficiently powerful to allow us to maintain some essential capabilities.

Is it possible to continue to do more with less?
We are kind of reaching our limits. We have been experiencing a period of dwindling budgets since 2008. That's seven years, and that's almost like losing a generation from the point of view of the development of new programs, and defense projects demand long timeframes. If we do not make it our vocation to develop this new generation, it will be difficult for us to make the grade and be at the cutting edge, not just in order to compete with other companies but even to be able to collaborate with other countries and regions. There have been some encouraging forecasts, with a certain budget increase predicted for 2016. Over the long term, I would reiterate the idea that we are still not ambitious enough.

Why do we need to have our own defense industry?
Because there are a series of threats that are Spain's responsibility, or linked to its geographic position, that we have to address. Our own industry allows us to tackle these issues with a greater degree of agility, quality, speed, and security. Having a sufficiently strong defense industry allows you to be able to sit around the table and discuss certain geopolitical issues with greater knowledge and skill.

Do we do enough in the fifth dimension, in cyberspace?
No. We are unaware of the extent to which our knowledge and assets are unprotected. This is a sphere in which we need to invest, since it costs money to be protected in the fifth dimension.

> "The defense and security sectors have given us some very important knowledge and capabilities in basic technologies, methodologies, and the development of highly qualified professionals"

*At the time of this interview.

Antonio Bueno

Vice President of General Dynamics in Europe and Director-General of Santa Bárbara Sistemas

What does a company like Santa Bárbara Sistemas contribute to Spain?
It contributes sovereignty and autonomy for our Armed Forces so that they have at their disposal now the technology and capabilities that will always be available in the future. It contributes technological value, since we are developing new and innovative products with a very advanced industrial base. We also produce a pool of professionals in the spheres of engineering and management, as well as a highly qualified workforce that provides a source of development for the rest of our industries in the future.
When thinking about what the defense industry can contribute to other sectors, we should mention quality, for example. There are some tremendous examples of quality in our sector. Defense calls for some unique specifications that also contribute a great deal to the civil world. We are talking about advances in personalization or customization, of needs involving short production runs, which mean that we have to design and manufacture with these complex requirements in mind. We are talking about systems that are subjected to very intense theaters of operations and that have a useful life of 30 years or more, something that is probably very specific to our industry.

Have we reached the limit beyond which it is no longer possible to do "more with less"?
We're talking about the efforts required to reach 1 percent of GDP right now. The NATO target stands at 2 percent. In order to ensure a sustainable industry that can maintain capabilities and make the grade in terms of technology, we need greater investment, but also—and above all—stability and financing. We always call for visibility and a certainty over the medium or long term that will allow us to support projects into the future. Our projects take a long time to mature and we need to be able to invest with visibility.

What role can Spain play in the definition of European industry?
A very important one. Spain is the fifth largest country in Europe in defense, and in order to maintain this position we must keep pushing forward with the conviction that we should be landmark in the sector. We have the industry, the knowledge, the talent, and the technology (or at least a good part of it) which make us an important player in all areas: air, land, and sea.

The Spanish defense industry exports some 65 percent of its production.
The defense industry cannot live on either its exports or its national market in isolation. There must be a combination of the two, which feed into each other. Both are good for clients and the industry itself. The export market in our sector is not like that of other sectors. It requires a great deal of institutional support. The national market is also fundamental because it adds trust and provides the necessary foundations for continued export activity.

Do we need a Spanish strategy for the defense industry?
It is fundamental that there is a clear state policy that goes beyond the Ministry of Defense and allows us to plan our next steps, as well as organize ourselves to respond to demands. State policy requires commitment and financing, support for export activity, a planning strategy, and, above all, the establishment of the open and fluid dialogue between government and industry, which is always going to be needed to achieve this strategic visibility.

> "We need greater investment, but also—and above all—stability, visibility, and financing"

TALK ABOUT THE FUTURE

Adolfo Menéndez

President of the Spanish Association of Defense, Aeronautics and Space Technology Companies (Asociación de Empresas de Defensa, Aeronáutica y Espacio, TEDAE)

What does the defense industry contribute to Spain in industrial terms?
We represent 6 percent of industrial GDP, which stands at 16 percent in Spain. In this context, we are relevant. But I think that the qualitative aspect is the most important thing, and that is where we represent everything—or almost everything. There are other industries, but the defense industry is the one that contributes the cutting edge of knowledge in all spheres. Any nation that did not have this industry would be dead from the point of view of industry. You need to be on the cutting edge of knowledge in order to compete with your rivals.

Spain is among the NATO countries that spends least on defense.
When NATO or the European Council sets a benchmark of 2 percent of GDP, the logical thing to do is to reach this target because it is the right thing to do and because it is the threshold for the required investment. Secondly, given the nature of the industry, we ask states for clarity, continuity, and celerity. In other words, we need them to tell us clearly what demand is like, as well as ensure that there is continuity (given that the periods needed to amortize such investments are very long) and that decisions are taken quickly. We do not induce demand; rather, we serve it.

> "Any nation that did not have this industry would be dead from the point of view of industry"

What role can Spain play in the definition of European industry?
We are the fifth most important country in Europe in quantitative terms. Qualitatively, we have an even better position due to our development capacity. In my humble but frank opinion, we can contribute a great deal. Our engineers and industries are perfectly competitive. We need to observe how the wider context is changing and adapt ourselves to the situation.

We export some 65 percent of what we produce in defense. What are our strong points?
Our strong point lies in the quality of our products and our capacity to cover other markets. Institutional support is of prime importance to the latter. For example, the previous government introduced mechanisms for government-to-government export. When we participate in a trade fair we receive the appropriate support. The Ministry of Defense has increased and reorganized its support for export activity. These strengths do not represent a limit but a target. There are also weaknesses: if Europe or Spain exports 70 percent of its production this means that its domestic market is constrained. There should be a balance between the domestic market and exports. The United States exports some 15 percent. Here we have to find a balance.

Should the state control the defense industry?
The state should set out the demand that it is disposed to commit to so that companies can adjust their plans to these needs. This would be the most practical and functional mechanism. The opposite would mean going back to the dark ages. What's more, we need to remember that we have to be profitable. If the demand is taken care of, we'll make sure we adapt to it.

Do we need a Spanish strategy for the defense industry?
It is a good thing. Important steps have been taken and we are working on further steps with government authorities. Industrial capacities have been established by the Ministry of Defense. It is necessary to have a strategy that involves both government and industry. The more solid the collaboration from each of these in their respective role, the more efficient the industry in the long run.

THE BUSINESS PERSPECTIVE

EDUCATION

"Spain continues to be hampered by past isolation, and it is difficult to convince people of the defense needs arising from foreign threats," claims **Eduardo Serra, President of Transforma España** and former defense minister. "After Luxembourg, Spain is the country in the Atlantic Alliance that spends the least on defense, and this shows little respect for our allies. Furthermore, the USA has said that it is not going to protect those who do not spend money on protecting themselves. At the NATO meeting in Cardiff in 2014, a target was set at 2 percent of GDP. But we don't even reach 1 percent. We need to educate people and raise public awareness of the importance of investing in defense."

"The greater our investment in the sphere of defense, the better our situation will be within the European context," states **Benito Vázquez, CEO of Everis**. "It's a problem of quality, not quantity. We need a coherent strategy that will allow us to develop unique capacities and, above all, execute this strategy in a consistent way. That's why it is crucial that we are able to find a balance between the role of larger companies and SMEs."

Ignacio Mataix, Director-General of ITP, is of a similar view, asserting that "as a country, in recent years we have had to implement policies involving cuts in the sphere of defense. Today, we all agree that current levels of spending are insufficient. We must rethink these policies for the coming decade. We have to focus much more on the products and services required by our Armed Forces to sustain their international missions, and although the government has already promoted an essential set of enterprises that can provide the capabilities we need, industry has to be capable of coming together to offer these products and services."

CYBERSECURITY

Perhaps the aspect that most concerns and worries businesspeople working outside of the sector is that of cybersecurity, something to which companies dedicate ever more resources. "The figures show that Spain is very behind," comments **Juan Chinchilla, Director-General of Lenovo**. "We are the country that suffers the most attacks, and people are also less averse to the risk of a cyberattack due to a lack of awareness of the problem. This is demonstrated by the fact that more than 60 percent of software licenses in Spain are not legal, for example. We have to invest more in our security and raise awareness among domestic and business users of the risks that exist in the fifth space." **General Manager for Southern Europe of NTT Communication, Roger Vilá**, agrees with this view: "A very high percentage of businesses have been attacked and they don't even know it. Cybersecurity is a complex matter, but it isn't impossible to achieve it."

"Although more work is still needed to raise awareness, those in charge of government authorities and boards of directors are beginning to understand that they have to protect themselves in the digital world just as in the physical world. Nevertheless, the management level is still lacking the training it needs and still tends not to know how to protect itself, partly because we are not talking about digital natives," says **Diego Navarrete, CEO and Director-General of Panda Security**. "Online threats no longer come from a bunch of kids who want to show everyone how clever they are. Now we are facing a whole industry that seeks to profit from cyberattacks and/or cyberterrorism, in the case of attacks on states. Our organizations' most prized assets have become digitalized, even those of the bakery on the corner. Our lives are digital; therefore, without sowing the seeds of fear, we have to provide the means to ensure peace of mind and security. Digital security requires comprehensive solutions. We have to be aware of the fact that we are not protected just because we have encrypted our information in a database or installed an antivirus. Who is responsible, how do they do it, and what data can they access? The answer to this question has to be found both within and outside organizations, which must seek to control the flow of people, applications and data."

"The openness of the Internet has encouraged some carelessness on the part of individuals," says **Francisco Román, President of Vodafone.** Who is responsible? "Ensuring security in this area is the responsibility of both society and the state, as well as operators," according to **Enrique Tellado, CEO of EVO Banco**. "As in all other areas, the state has to set basic but sufficient rules of the game and provide the level of security that corresponds to it: that of avoiding mass attacks by international pirates, and so on." However, he says, "the rest is down to the business itself, which has to guarantee the security and integrity of the information it handles." He adds: "We believe security to be crucial because there are two very important assets that almost all businesses have to manage: the trust or credibility our brand represents—which is destroyed very quickly by any incident involving a breach of security—and human capital."