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THE ROLE OF SPANISH'S STPS IN THE FRAMEWORK OF NEW ECONOMIC AND POLITICAL CONTEXT; EVOLUTION AND CHALLENGES OF STPs

PLENARY SESSION 1

Technology and business: balance and priorities in STPs and AIs

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The Role of STPs in the framework of new economic and political context, and own evolution and challenges. The case of Spanish STP

ABSTRACT

Current regional and national innovation systems are complex networks that exceed the traditional conception of the triple helix. Besides, the new territorial development models such as the smart specialization approach have redefined the traditional innovation systems governance where the SPTs develop their activities as intermediate agents for business competitiveness.

In this new context the STPs must themselves find their role in these new and complex systems, rethinking their relationships and linkages with agents already integrated into these quadruple/quintuple helixes, but also with new ones so that not only they contribute to innovation and business competitiveness, but also indirectly on the more ambitious smart specialization strategic approach.

All these factors make the reflection on the role of STPs in Spain timely and necessary. As an answer, APTE, as the leading association of STPs in Spain, has defined its strategy for the next six years.

Key words: science and technology parks, areas of innovation, smart specialisation

The Role of Spanish´s STPs in the framework of new economic and political context 2014-2020: Evolution and challenges for STPs

1. INTRODUCTION: STPs in the current European competitive context

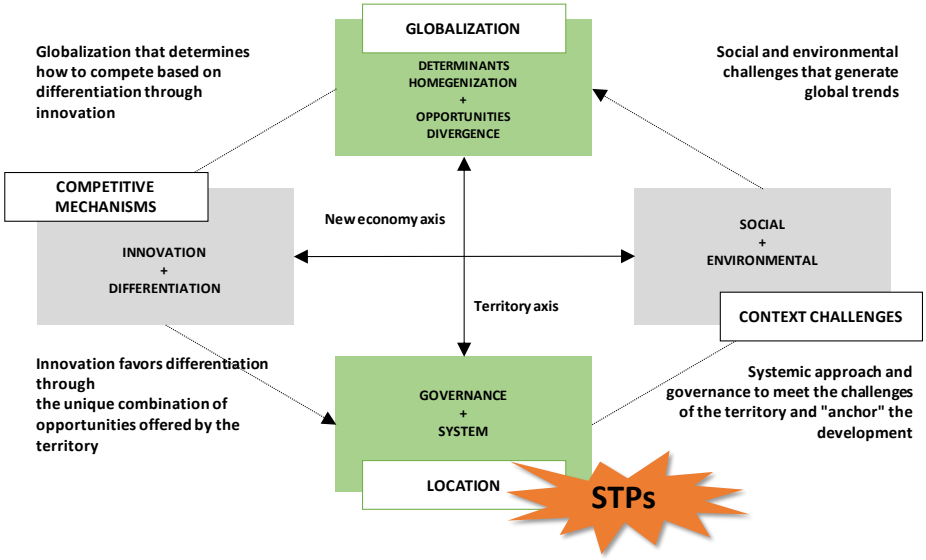
1.1. The current competitiveness model and smart specialisation

The territories are now facing an uncertain and complex context, characterized by globalization and economic, social and environmental challenges. In this context, competitiveness has become a central topic of academic, business and political debates, with regard to the ability of the economies to generate wealth and employment[1].

In developed countries, this leads to a continuous search for positioning through differentiation in order to maintain and increase the living standards of its inhabitants. Besides, as innovation has become the tool for differentiation and competitiveness, the new models focused on open innovation, networks and localization[2], has arisen as a key issue for business competitiveness and public policies.

Furthermore, given that innovation has public good characteristics subject to significant market failures, the key issue is how to generate the necessary conditions (social, cultural, institutional and territorial) in these complex processes, to achieve optimum levels. And it is here, when referring to the specificities linked to the territory and its governance, that STPs could play a central role as key agents of regional/national innovation systems. More specifically STPs are supposed to be one of the most remarkable actors within the R&D system and its governance: a key pillar as an asset of the territory.

Figure 1. The role of STPs in the current competitive context



Source: Del Castillo et al. 2013 "Territoral Governance in a context of smart specialisation"

Thus, current regional and national innovation systems are complex networks that exceed the traditional conception of the triple helix. Nowadays they are configured as quadruple (even quintuple) helix systems including other key agents such as funding agents, or society in general[3].

[1] Ketels, C (2006) "Michael Porter's Competitiveness Framework" Journal of Industry, Competition and Trade

[2] Chesbrough, H.W. (2003) "Open Innovation" Boston. Harvard Business School Press

[3] Landabaso, M. (2011) "Strategic guidance for the new EU Cohesion Policy 2014-2020 in the research and innovation field". Meeting on Smart Specialisation in Andalucia. Seville.

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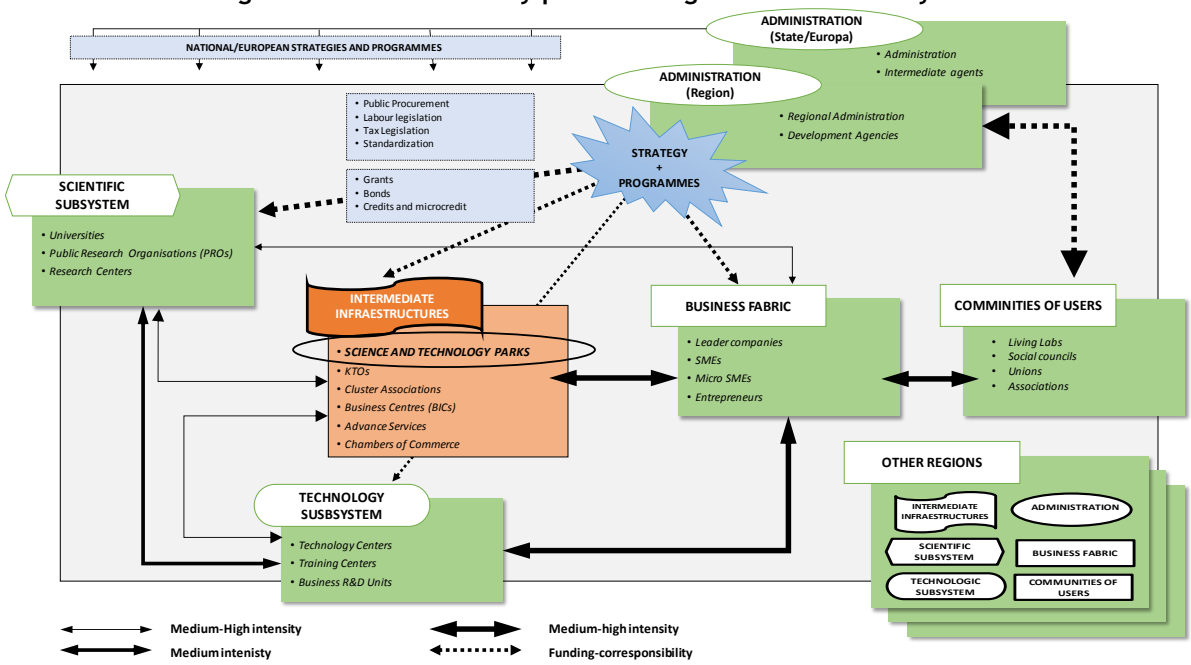
This new structure of innovation systems allows indeed the integration of additional dimensions such as the social and environmental ones, where STPs must focus their efforts too. This implies for STPs not only to consider wider range of actors but also to develop more promoting actions.

In this new context the STPs must themselves find their role in this new and complex systems, rethinking their relationships and linkages with agents already integrated into these helixes, but also with new ones so that not only they contribute to innovation and business competitiveness, but also indirectly on the other dimensions that make more attractive a territory. These models of innovation systems operate under the premise of open innovation, which should be internalized by the STP, favoring the generation of internal and global value chains in which its members participate.

Today, the growing importance of the "living lab" approach[4] and the models of open innovation[5], force to reconsider the regional system in terms of a quadruple helix[6]. Thus, they are incorporated into the analysis in the shape of user communities and society in general as important agents that influence the processes of innovation and governance of the entire system. This approach is also in line with the new developments regarding smart cities, areas and poles of innovation etc.

In the framework of smart specialization, the regional system would consist of the components and subsystems shown in figure 2, with a conceptual approach very close to what is understood as quadruple helix. That is clearly reflected by the European Commission in the current definitions of regional policy in the field of innovation[7].

Figure 2. The STPs as key part of a regional innovation system



Source: Del Castillo et al. 2013 "Territoral Governance in a context of smart specialisation"

[4] Bilgram, V.; Brem, A.; Voigt, K.-I. (2008) "User-Centric Innovations in New Product Development" International Journal of Innovation Management, Vol. 12, No. 3, pp. 419-458

[5] Chesbrough, H.W. (2003) "Open Innovation" Boston. Harvard Business School Press

[6] Carayannis, E.G. and Campbell, D.F. (2009) "Knowledge creation, diffusion, and use in innovation networks and knowledge clusters." Praeger

[7] Landabaso, M. (2011) "Strategic guidance for the new EU Cohesion Policy 2014-2020 in the research and innovation field". Meeting on Smart Specialisation in Andalucia. Seville

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As the Commission estates on its reports and guide documents, innovation facilitators such as STPs must operate in a climate of institutional trust and work to establish public private partnerships in the long term as the only way to ensure an open innovation like performance and to be successful at the regional level. In fact, collaboration between government, other public agencies, the business community and the agents of the innovation system is a key factor to avoid duplication and leverage synergies between common interests. Therefore, a strategic reflection for STP as members of these kind of innovation systems and models must consider at least 3 questions:

1. How parks can help companies to better compete in a context determined by these four competitive dimensions?
2. What is the role of the STPs in the new governance models for regional smart specialization systems?
3. And how do they ensure its own sustainability regarding the current financial environment, maintaining its ability to provide value added services to companies?

The concept of smart specialization comes from reflection generated around the structural "gap" between Europe and the USA[8], as result of a lower economic and technological specialization and less ability to prioritize and to dedicate consistent efforts at the regional level.

From this reflection, this line of thought has been translated into the new approaches of European regional policy in the context of Europe 2020, and has also established itself as one of the conditionalities for accessing the European Regional Development Fund (ERDF) in the next programming period 2014 -2020[9] [10].

According to Del Castillo and others[11] "*Smart Specialization is the prioritizing that takes place, at a territorial level, in economic activities, scientific areas and technological domains that are potentially competitive and generators of new market opportunities in a global context versus the prioritizing that other territories carry out*".

From these authors' point of view, the concept can be broken down into three main points, to be:

- The prioritization of specific patterns of specialization in technological domains, scientific areas and economic activities. In them, the region is competitive and focuses its efforts with a high potential return thanks to their critical mass.
- Exploiting related diversity, from the relationships between different domains and sectors, maximizing externalities and generating new emerging activities with the combination of knowledge.
- The consistency of the whole process within the global context, where such specialization is configured as part of a global value chain in which the region is a leader and has a comparative advantage.

[8] Pontikakis, Kyriakou y Van Bavel (2009) "The question of R&D Specialisation: perspectives and policy implications". JRC Scientific and Technical Reports.

[9] EC (2011) "Regulation of the European Parliament and of the Council on Specific provisions concerning the ERDF and the Investment for growth and jobs goal" (EC) No 1080/2006

[10] EC (2011) "Communication from the EC: Regional Policy contributing to smart growth in Europe 2020". Brussels

[11] Del Castillo, J., Barroeta, B. y Paton, J. (2012) "Smart Specialisation Strategies RIS3: A quick guide". INFYDE Working Papers, Year 2, Vol.1

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So, following these three aspect defining smart specialization and the nature and objectives of STPs, the strategies between both can be summarized in the following table:

Table 1. Synergies between smart specialization and STPs

	Parks elements in relation with smart specialization	Elements of smart specialization treated in parks	Synergies between parks and smart specialization
GLOBAL CONTEXT (consistency)	Interconnection in the framework of international excellence (with other parks of the IASP)	• Generation of competitive advantage international • Promoting interregional networks under a business model	Parks are good channels for both the internationalization of companies and organizations, and for identifying trends.
PATTERNS OF EXPERTISE (Prioritization)	Promote Social Capital and internationalization among agents in the parks.	Creation of critical mass in a location	Parks are a reflection of the current pattern of regional specialization in high technology.
RELATED VARIETY (Connectivity)	Dynamics of multi-agent and intersectorial collaboration	• Use of the related variety within the parks. • "spill-over" effects and externalities	Parks facilitate relationships in the quadruple helix. Contribute to technological hybridization and generation of entrepreneurial discoveries.

Source: APTE Strategy

As it can be seen, in the new competitive and innovation context, STPs should play a greater and more proactive role with a much greater extent than in previous decades. This is because, under the new models of innovation focused on smart specialization, STPs can (and should) play a pivotal role in territorial development promotion that enable the region to participate in generating major innovations at European level with an international market orientation ("UPSTREAM" focus). On the other hand, they should also generate the absorption capacity of the results achieved at European level ("DOWNSTREAM" focus).

In other words, the STPs must act as intermediators from a triple geographical perspective of innovation:

- From a REGIONAL perspective: STPs must be understood as part of the Regional Smart Specialisation Systems (fostering regional excellence innovations generation capacities)
- From a national perspective: the role of STPs in the National Innovation System and the Spanish Strategy for Science, Technology and Innovation (fostering coherence between the regional and European priorities)
- From an European perspective: The role of STPs in the ESFRI (European Strategy Forum on Research Infrastructures), and as intermediators in Horizon 2020 and COSME.

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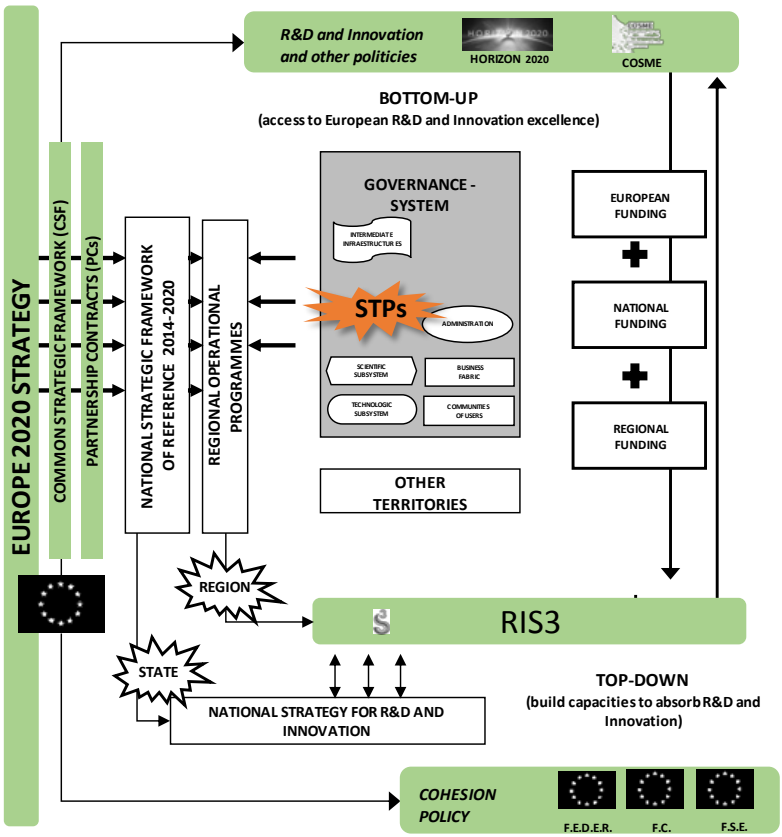
Figure 3. The STPs within the European, national and regional strategic framework: the bottom-up vs. top-down approach



Source: Own elaboration

To sum up, smart specialization approach specially the fact that the RIS3 is an ex ante condition for the Cohesion Fund 2014-2020, leads to the need of reconsidering the STPs role in the following sense:

- Promoters and facilitators of technological specialization and regional prioritization
- Tools for identification and promotion of key enabling technologies within the business fabric
- Tools for facilitating networking among different regional actors and with other regions and countries (key issue of the open economic dimension of RIS3)
- As policy and interface agents (instruments for RIS3 implementation)
- Promoters of innovation in an open economical framework, favoring the model of collaborative innovation (Open Collaborative Innovation)
- Instruments to ensure a participatory governance, and a dense network of relationships between the public sector, the scientific community and the businesses.

1.2. New typologies of STPs: 3rd generation of STPs and Areas of Innovation

1.2.1. The evolution of STPs

From the late 1950s to the present, there are three generations of science and technology parks. Each model, with its peculiarities, is still a valid approach that covers equally the particularities of each region, the characteristics of business sector and its innovation system. According to Rowe (2013)[12], the three STPs generation characterizes by the following elements:

1st generation of STPs (the 80s):

- Good soil and infrastructure availability
- Relationships with one or more universities
- Technology transfer to companies as a differential service offered by STPs

2nd generation of STPs (the 90s):

- A wider range of services for companies in STPs:
  - Entrepreneurship support services (start-ups) using incubators and accessing to networks for entrepreneurs
  - Facilitating the access to innovation networks as well as their generation and consolidation (involving innovation agents and companies located in the STP)

3rd generation of STPs (the 2006-…):

- STPs include the features developed in the second generation but conceived in a wider focus/approach, favoring the attraction of talent, creativity and the development of innovations through collaborative open spaces.

This third generation of STPs is called to play a significant role within the new model of smart specialization. According to the table 2, the main characteristics of them are the following:

Table 2. Main characteristics of the 3rd generation of STPs

CHARACTERISTICS	DESCRIPTION
Innovation Culture	Shared values and common identity among the actors of the innovation system to address traditional barriers and failures related to cooperation and entrepreneurship
A more complete and comprehensive range of additional support services to innovative activities	The physical environment offered by STPs is important, but so are the services offered by them because focused on responding to the real needs of companies located therein. The STPs should generate an attitude of confidence with their tenants by offering a range of services tailored to their actual needs.
Role of the entrepreneurial university	Make easier the interaction between generators and users of science and technology to design and develop new products and processes
Importance of the territory	The unique assets of a territory that also contribute to stimulate innovation culture and entrepreneurship
"Hubs" and networks:	Local cooperation networks tend to be competitive when the STPs operates as an integrated and coherent local/global network of other firms and supporting institutions
Model of integration	The integration of new STP models as smart cities, increasing relationships with the rest

[12] Rowe, D. (2013) "Setting up, managing and evaluation EU science and technology parks"

	of urban agents.
STPs as global actors	STPs as global actors, but maintaining their local/ regional roots. The STPs should play an important role in defining the image and brand of the city or region.
STPs as part of the community (social and environmental dimensions)	STPs stimulate the development of skills, new technologies and the development of communities working and living within the same location. The design and architecture are acclaimed not only by planners and architects, but by those who work there and live near/within the STP.
Management Leadership.	STPs should take advantage of visionary leadership, an optimal account management, brand development and strategic marketing etc.

Source: APTE Strategy

1.2.2. A new concept in STPs: areas of innovation

In line with the new developments proposed by the 3rd generation of STPs approaches, smart specialization and smart city concepts, a new idea of STP is emerging nowadays: the innovation area. Thus, linked to bigger metropolitan areas the concept of "innovation area" related to STPs seems to emerge from the French "technopolis" phenomenon, and the STPs phenomenon related to cities and districts.

In these new models under an "OPEN INNOVATION" performance of different actors (universities, BICs, centers and research institutes, enterprises and other organizations) integrated these into a model of quadruple and even quintuple helix with an important urban focus (or "smart city").

The innovation area tries to build up an environment capable of integrating all the agents of the different phases of the innovation process (from design, development, testing and marketing):

- Universities and colleges of excellence
- Programs to attract talent, companies and resources to support innovation
- Different types of very specialized infrastructure (incubators, laboratories, offices etc.)
- Generating a friendly environment not only for business but also for people living there

Therefore, the concept of an area of innovation goes beyond the quality of life in this location: relies on a strong connection between universities, research centers and companies.

This evolution towards a knowledge society with low environmental impact is in coherence with the new urban dynamics, where economic activity and personal life take place in the same place.

These locations are especially attractive to talent and creativity, assets that tend to be located in some districts of the city, but not in an isolated STP: the quality of the place is indicative of the ability to provide an environment in which talented creativity and knowledge tends to be localized.[13]

[13] Jacques Vidal and Pierre Bèlanger. Sherbrooke Innopole: building an innovation city. 29th IASP World Conference 2012. Tallinn

2. METHODOLOGY: how the Strategy was made

All these factors make the reflection on the role of Technology and Science Parks in Spain timely and necessary. APTE, as the leading association in the development of Technology and Science Parks in Spain, has faced the challenge and developed its view and strategy for the development of the Spanish System of Technology and Science Parks in the next six years.

APTE's strategy has been defined taking into account the following issues:

- How STPs can help companies to compete in this new context?
- What is the role of the STPs in the new model of governance in regional innovation systems?
- How do the STPs ensure their own sustainability in a complicated financial environment, maintaining their ability to provide value added services to companies?

For the elaboration of its view and strategy, APTE conducted a participatory process of consultation among its members:

1. Consultation through personal interviews with the managers of the Spanish Technology and Science Parks, the personnel of APTE, and other external experts.
2. Drafting of a proposal for a Strategy for APTE
3. Presentation and debate on the proposal among the Parks members of APTE, and with public authorities and other key stakeholders
4. Agreement on final version of the Strategy for APTE.

The identification of the strategic lines and activities for APTE was derived from an analysis of:

- The opportunities and the role of Spanish STPs in the framework of new European policy context for 2014-2020 (Europe 2020 and RIS3) and in the framework of Spanish R&D&I policy context for 2014-2020.
- To analise international trends of STPs: Third generation SPTs.
- The role of STPs in the framework of the new instruments, agents and mechanisms for R&D&I: incubators, smart cities, living labs, etc.
- To analise the economic impact and innovative performance of Spanish STPs
- To identify the main difficulties and success factors of Spanish STPs as instruments of innovation policy
- To identify the main challenges of Spanish STPs.
- SWOT analysis of APTE
- The Role of APTE in the framework of new economic and political context, and the evolution and challenges of STPs

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3. CONTENTS: the APTE Strategy

3.1 Some preliminary data from the strengths and weaknesses analysis: the starting point of Spanish STPs

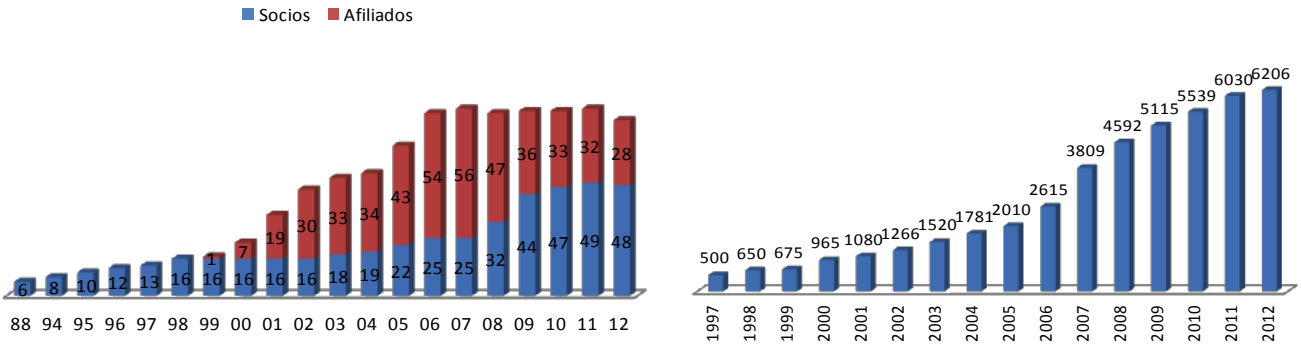
Although in the past 20 years the number of members of the APTE has been growing, in 2012 a slightly decrease has been experienced. Since the crisis started in 2008-2009, the number of companies and institutions occupying the SPTs has grown by 35%, although in the last year more moderate growth is appreciated.

The sector that brings together the largest number of businesses in STPs members of APTE is the ICT with 22.7 %, followed by Engineering Consulting and Counseling, with 15.3%. The number of foreign-funded enterprises in 2011 reached the figure of 233 (3% of total companies), 19% less than in 2010.

The STPs included in 2012 in APTE, account for a total of 890 companies in incubation, which is 13% more than in 2010 and 14% of total enterprises.

STPs accounted for a total of 21,587 million euros, 7.1% less than the previous year in 2012. The turnover of the STPs representing approximately 2 % of Spanish Gross Domestic Product (GDP).

Figure 4. No. of members in APTE (left) and No. of companies in APTE´s STPs



Source: APTE Strategy

The volume of employment generated in the STPs of Spain amounted to 146,669 workers at the end of 2012, representing 0.85% of total employment in Spain. The volume of employment generated in the STPs decreased by 5% compared to fiscal year 2011. Since the crisis started in 2008, there has been a evident slowdown in employment generated by businesses in the parks.

Despite this fact, the R&D employment is increasing, which shows the commitment of the companies and institutions of the STPs to innovation and the increasing of competitiveness.

In 2012 a total of 29,296 persons performed R&D activities in the STPs in APTE. Thus, the R&D employment increased by 3% compared to 2011. Besides, personnel engaged in R&D activities and projects in the STPs of APTE assumed 13.2% of total staff dedicated to R&D in Spain.

During 2012 companies in the members of the APTE invested 1,054 million euros in R&D, representing 7.4% of total expenditure on Spanish R&D. This data showed a drop of 12% over the previous year, however, this negative figure is related to the 25% cut in the State Budget for R&D and innovation for 2012.

In 2012, a total of 313 patents were registered in the STPs (representing 9.3% of total patents registered in 2012 is Spain), 30 % less than in 2010.

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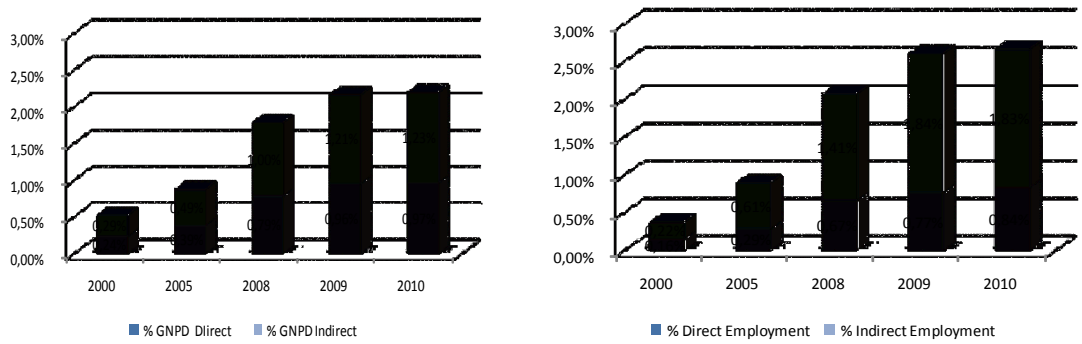
Figure 5. Direct and indirect impact of APTE´s STPs in Spain



Source: DG REGIO "Estudio sobre la contribución de los Parques Científicos y Tecnológicos (PCT) y Centros Tecnológicos (CCTT) a los objetivos de la Estrategia de Lisboa en España ". INFYDE. Septiembre de 2011

Table 3. Strengths and weaknesses of Spanish STPs

STRENGTHS	WEAKNESSES
• Ability to place STPs as catalysts of Spanish Innovation System.	• Small staff and limited financial resources of APTE
• Consolidated innovative companies, R&D infrastructure and training organizations, as well as other intermediate organizations in the innovation system	• The interface with the public scientific field (especially universities and CSIC) is not well developed yet in some locations.
• Ability to interconnect the STPs´ technicians to take advantage of potential partnerships between business and technological research centers from different places	• APTE has not so far developed to its full potential role of representation/ mediation against the AA, other ministries and European institutions.
• Good institutional relations at Spanish government level.	• Some services from APTE as internationalization and technology transfer between parks do not yet have the necessary critical mass.
• Excellent relations with other international networks such as the IASP.	• In some Parks the activity is very focused on space brokerage.
• Professionalism, dedication and commitment of the technical team APTE.	• APTE has not evolved to integrate the evolution of the STPs (third generation).
• Stable Network of contacts between managing bodies of STPs and APTE.	• Negative impact of finantial problems on the image of the Parks

Source: APTE Strategy

3.2 CHALLENGES OF THE STP IN SPAIN

STP AS THE ECOSYSTEM INNOVATIVE INSTRUMENTS. The Spanish STP must promote the internal value chains, within the framework of open innovation, but also the global ones in which their members are involved. This requires, considering the parks as a hinge piece of other instruments that share objectives like clusters and living labs, technological centers, enterprise centers, collaboration networks and so.

To be successful at regional level, the STP must operate in a climate of institutional trust and establish public-private collaboration in a long term. The collaboration among government, other public agencies, companies and the agents of the innovation system is a key factor to avoid duplication and to take advantage of synergies with common interests

Likewise, the parks must contribute to the awareness-raising of the local community to the innovation.

PARKS AS PART OF THE KNOWLEDGE ECONOMY: at a time of critical opinion with real-state transactions, the STP should promote its image as instruments of knowledge economy and technology transfer. The STP must play its role of interface with knowledge-generating institutions such as Universities, Technology centers, and Institutions that support innovation

PARKS AS AN ESSENTIAL ELEMENT OF SPANISH INNOVATION SYSTEM: Parks must play an important role in the new R&D&I Spanish strategy as one of the core of the innovation system, and in any case, as the generator of high connectivity.

STP AS PART OF THE SMART SPECIALIZATION: The STP can play an essential role in the articulation of the regional smart specialization, as they can support the process from the generation of knowledge to its commercialization.

STP FINANCIALY SUPPORTED: STP must ensure their financial sustainability beyond the specific contributions of capital. For that, they must have a real strategy of enhancement of its assets, offer services and participation in projects that generate economic return

Thus, the STP must use their national and international contact networks (particularly in Latin America) to sell services (expertises) and participate in international projects.

For the new period 2014-2020, parks need to be able to use the new funds of the European Regional Policy for their specialization, to be different and to develop into tools to promote scientific and technological excellence in the context of globalization.

In addition, the parks must combine these funds with funds from the European R & D program Horizon 2020, so that with both funds should be able to co-finance their activities

The STPs must **ENHANCE THEIR INSERTION IN LOCAL AND REGIONAL NETWORK T**o explode the externalities inherent to open innovation models, and thus contributing to improve the competitiveness of their companies at international level

Therefore, the STP must be **APPROPRIATE TOOLS TO SUPPORT THE ENTERPRISES IN THEIR PROCESS OF INTERNATIONALIZATION**

- The STP are interface tools for the enterprises, especially for SME face to support them to reach other government agencies or potential sources of funding. Networks in which they participate (particularly IASP, and in Spain APTE) support in a natural way the search for partners in innovation projects; and also facilitate the soft-landing on the processes of internationalization of firms.
- The work of lobbying undertaken by the STP is a tool for channelling the enterprise demands to national, european and international level

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- The STP are attractive ecosystems to attract companies from outside, investment and talent. The STP can play an important role in attracting scientists, R & D&I activities and innovative companies

Parks as **ACTORS OF THE INNOVATION ECOSYSTEMS IN THE CITIES** should make its experience available to local government to promote this type of urban ecosystems "SmartCities.

So the parks could expand their capacity of acting beyond their own physical limits

3.3 Challenges of APTE (The Association of Science and Technology Parks of Spain)

In this economic and political context, APTE faces new challenges:

- Intermediation in real state to sell land supply
- Intermediation in innovation and technology.
- Intermediation of talent (talent supply to companies)
- Intermediation in markets (internationalization)

In the European framework, APTE should get, together with IASP, that parks are considered as one of the key elements of the transfer and innovation processes in the Regional Policy Funds as well as in the Research and Innovation Policies.

APTE must work in positioning Spanish Parks as strategic tools within the innovation ecosystems. For this, it must boost the Parks as central nodes of the knowledge economy and networks generation, and of technology transfer.

Also, the APTE should take advantage of its institutional recognition, so that the parks system is the interaction point among the innovation system agents.

- To use its territorial network to improve the coordination among the different administrative levels, and so to improve the efficiency of the Spanish innovation system, taking better advantage of the synergies and avoiding duplications.
- To boost the parks integration in local, provincial and regional networks, to achieve a broader linkage of innovative, creative and entrepreneurial capital diffuse in the society, with the processes developed in the Parks.
  For that, Parks must be positioned as key agents in the new innovation support instruments such as living lab, innovation areas, smart cities, cluster, open innovation, etc..
- To boost the collaboration among Spanish parks and provide them with the necessary tools and methodologies for the optimal development of their activities.

3.4 The strategic core of the APTE´s Strategic Plan

From the initial reflection carried out, APTE has defined its strategy based on the mission of APTE to become Spanish Science and Technology Parks REFERENCE for positioning them as key players in the Spanish Innovation System, providing networking services not only to the Parks but also to their businesses and agents located in them.

On the other hand, the vision of APTE´s Strategy is to become a network of interconnected STPs, and by extension, for all those agents of the Spanish Innovation System linked to innovation and

competitiveness promotion, making possible the linkages among their members and with those in global channels.

The APTE´s Strategy has included also a number of specific objectives linked to more operational actions to be carried out in the next years:

- Strengthening representation and mediation activities of STPs members of APTE throughout Spain, Europe and internationally
- Moving towards setting up a partnership model that takes into account the different models of STPs and the best contribution to the development of their environment.
- Generating information useful to enable STPs to generate added value for its members
- Greater development of the activities of providing services to the STPs´ network, and extending the scope of STPs in their respective territorial contexts
- Take place in the new policy frameworks for R&D and innovation at regional level (Strategies RIS3), national (Strategy for Science, Technology and Innovation) and European (2020, Horizon 2020, COSME etc.)

3.5 The actions lines and initiatives of the APTE´s Strategic Plan

3.5.1. Strategic positioning and intermediation for STPs (Strategic line 1)

The objective of this line is to position STPs as a hinge element for R&D and innovation support at regional, national and European level, in line with the approach of RIS3 and ESFRI (European Strategy Forum on Research Infrastructures). Besides, to contribute to ensure the legitimacy of the APTE representing the Spanish STPs system

Therefore, APTE seeks to become an effective player in planning, designing and implementing public policies on R&D in this period, particularly in the new RIS3 framework to improve the absorption capacity of funds to support R&D and innovation.

Sub-Strategic Line 1.1- Positioning at national and European level

Sub-Strategic Line 1.2- Positioning at international level

3.5.2. Association model (Strategic line 2)

The strategic objective of this line is to continue improving the governance structures of APTE, ensuring a good representation of the diversity of STP models that are currently integrated into the Association. In this sense, it will use the model of participatory governance as a mechanism to further facilitate and strengthen collaborative work (networking) between different STPs within the APTE, taking advantage of the diversity of territorial specificities.

Sub-Strategic Line 2.1- Participatory governance

Sub-Strategic Line 2.2- APTE´s STPs characterization and modeling

3.5.3. Strategic and prospective information (Strategic line 3)

The general objective of this strategic line is to provide ongoing information to STPs integrated in APTE that may enable them to provide a differential value to their services and their general performance. The objective is also to develop a monitoring system in the field of science and Technology Parks that cover the following areas: Science, Technology and Innovation, Business

Creation and incubation, limitations regarding inhouse investment, EU and national support programmes and trends in the STPs models.

Sub-Strategic Line 3.1- Technology and competitive foresight

Sub-Strategic Line 3.2- Spanish STPs system monitoring

3.5.4. Value added services (Strategic line 4)

Finally, the objective of this line is to maintain a portfolio of services in line with the traditional needs of STPs and their companies, while adapting (and where appropriate develop new ones) to meet the challenges of the new global trends and the evolution of STPs models.

Sub-Strategic Line 4.1- Identification and launching of strategic projects

Sub-Strategic Line 4.2- Collaborative dynamics between STPs (co-working)

Sub-Strategic Line 4.3- Training and capacitation of Human Ressources.

Sub-Strategic Line 4.4- Commercialization of advance services for the STPs enterprises and promote the collaboration in projects

4. CONCLUSIONS: the role of STPs until 2020

The purpose of this Strategy is to serve as roadmap for the development not only of the APTE as an association, but of the whole Spanish System of STPs, with a shared view on the role they are called to play in the promotion of a economy based on innovation and activities of high value added.

In particular, with the Strategy for APTE, the system of STPs accepts to take a leading role in the Spanish Innovation System regarding:

- The role of STPs within the new economic development model focused on Smart Specialization and RIS3 strategies
- The role of STPs within the whole logic of European R&D+I at regional (RIS3 strategies), national (Spanish Innovation and ST Strategy) and European (Europe 2020 and Horizon 2020).
- The role of STPs in supporting their hightech enterprises (specially the smallest ones) to enter and participate in global frameworks to increase their overall competitiveness at international level.
- To promote the creation of OPEN INNOVATION spaces to facilitate the promotion of the transfer of knowledge, creativity and innovation.
- To facilitate the mobility of highly qualified staff and knowledge workers.
- Supporting the global dimension of firms
- Supporting the creation and consolidation of new technological firms
- The promotion of the intersectorial collaboration in R&D+I to exploit the related variety and the opportunity behind the entrepreneurial discovery processes
- The promotion of innovation outside the Park, and beyond its limited space.
- To support the creation of Living Labs and demonstration spaces for the application of technologies.