



**Good Practices on Regional Research and
Innovation Strategies for Smart Specialisation**
Basque Science, Technology and Innovation Network

Basque Country (ES)

February 2013

Table of Contents

1	Basic Data of the Practice	3
2	Introduction: Regional Smart Specialisation Background	5
3	Description of the Practice.....	6
4	Monitoring and Evaluation	12
5	Lessons Learnt.....	14

1 Basic Data of the Practice

1.1 Title of the practice

Basque Science, Technology and Innovation Network (RVCTI).

It was established in 1997 to develop a market and client-oriented smart technological infrastructure for complementary and coordinated networking. It aims at providing an integrated, sophisticated and specialised technology offer to the Basque business sector.

1.2 Precise theme/issue/policy tackled by the practice

- X Clusters
- X Innovation friendly business environments for SMEs
- X Research infrastructures, centers of competence and science parks
- X Universities
- Digital Agenda for Europe
- Key enabling technologies
- Cultural and creative industries
- Internationalisation
- Financial engineering instruments
- Innovative public procurement
- Green growth
- Social innovation

In particular:

- X Open innovation
- User driven innovation

Process of regional change initiated:

- Transition
- Diversification
- X Modernisation
- Radical foundation of a new domain

1.3 Geographical range of the practice

Basque Country (ES) NUTS 2

Population: 2,162,944, extension 7,234 km²



1.4 Contact details

Name

Organisation

Telephone number and email

1.5 Sources of information

ABOUT the Basque Science, Technology and Innovation network

<http://www.innobasque.com/home.aspx?tabid=559>

<http://www.euskadinnova.net/es/innovacion-tecnologica/vasca-ciencia-tecnologia-innovacion/168.aspx>

(Spanish)

ABOUT the Science, Technology and Innovation Plan (PCTi2015)

<http://www.euskadinnova.net/es/portada-euskadiinnova/politica-estrategia/pcti-2015/112.aspx> (Spanish)

<http://www.euskadinnova.net/documentos/1818.aspx>

2 Introduction: Regional Smart Specialisation Background

The Basque Country is one of the most industrialised regions in Spain, and known for a successful industrial transformation. Over the last 30 years, the region has implemented its science, technology and innovation (STI) policy driven by a need to boost industrial competitiveness. R&D & innovation policies have been strategic for regional development during this period. The policy implemented since early eighties, has been translated through a long term innovation strategy based on the regional capacities and capabilities to promote science, technology and innovation as drivers of the Regional Development Strategy. The role of total factor productivity and innovation in driving growth was significant in the 1990s and declined in the early part of this decade, but appears to be on the rise again thanks in part to significant increases in public and private investment in innovation. The Basque Country has begun a transition from a model of incremental innovation in manufacturing to a model increasingly based on science and other forms of knowledge.

The Basque Region has proven its commitment to become an European hub for industrial competitiveness and within the last 15 years our society and institutions have shaped a consistent Innovation Ecosystem of companies, social actors, institutional initiatives and professionals focused on innovation and creativity as best sources to foster economic development and rebuild and transform our industrial structure. Thanks to this capacity to overcome critical challenges, the Basque Country has been able to recover from two industrial crisis in the last decades of the 20th century and now it has proven to be more resilient to the present crisis, facing current economic constraints with some strengths for recovery: a diverse and competitive industrial structure, a well-oriented network of science, technology and innovation jointly working with companies, a cohesive social and territorial system, a distributed urban system internationally accredited as knowledge and creativity hubs, etc.

This complete and on-going transformation relies upon a strong industrial cluster positioning and inter-cluster cross-sector strategies focused on a new smart specialization strategy that looks forward into the future to find niches where the Basque companies were able to exploit their own capabilities and public-private partnerships tradition to gain a solid global competitive position in new markets emerging from global trends connected to human challenges such as eco-innovation, aging or health. This region was one of the pioneer regions to apply Porter's methodology to detect potential clusters. Based on that, a cluster policy was defined which has resulted in eleven cluster associations.

The current crisis means that our industry will need to be even more active in renewing its capabilities to remain competitive and our efforts will need to focus on new inputs and ideas. Considering this background, the Basque approach for regional innovation relies on four strategic features which are considered the key driving forces of our specific challenge for the coming years:

- Driving Force 1. Hybridisation for industrial transformation.
- Driving Force 2. Need of policies aimed at fostering smart specialization.
- Driving Force 3. Basque scenario as a solid lab.
- Driving Force 4. Financial and institutional determination.

The industrial production in the Basque Country is diverse: machine tool, automotive, metal, electronics are very important. However, other sectors, like the Chemical, petrochemical and refineries have a significant position within the GDP. Other sectors such as Biotechnology, nanotechnology and energy are high added value sectors. This calls for a fuller tailoring of R&D & innovation policy to the regional context and assets, based on a realistic assessment of what can be achieved with limited resources, as an alternative to a policy that spreads investment across several areas and sectors irrespective a late '90s.

3 Description of the Practice

3.1 Executive summary

The Basque Science, Technology and Innovation Network is composed by the Science System, the Technology System and Innovation Support System. The Network covers practically all organisations and institutional agents that carry out activities related to the creation and spread of information in the Basque Country, in particular those that support the business enterprise processes which later drive forward a large part of the country's economic and social development.

The Basque Technology Network (RVT) was instituted in 1997 in the framework of the Science and Technology Plan 1997-2000. Its aim is to foster and better co-ordinate the supply and transfer of scientific and technological knowledge developed by accredited non-profit institutions to the Basque productive sector.

Over the period 1997-2004, members of the RVT received more than half of the RDI support provided by the Department of Industry, with technology centres (TCs) receiving the larger share from the generic R&D programmes. Such an evolution reflects the emphasis put on the development and broadening of the scope of the S&T supply capacity of technological centres. In 2005, the scope of the RTV Technology Network was broadened and changed its name into the Basque Science, Technology and Innovation Network (RVCTI) which presently regroups more than 100 non-profit institutions including principally:

- 14 Technology Centres and the foundations that regroup them (Tecnalia and IK4);
- over 35 intermediary institutions involved in knowledge and technology diffusion;
- 7 co-operative research centres (CICs);
- 4 basic excellence research centres (BERCs);
- 3 public research centres;
- 2 health sector research units;
- 9 higher education institutions;
- over 40 enterprise research units;
- 6 certification and testing laboratories;
- 8 technological parks.

The network essentially serves two purposes. On the one hand, it provides an accreditation label required to benefit from certain support programmes or to participate in cooperation projects submitted by individual firms. A firm may choose to enter the network if it creates a separate tax-exempt R&D unit. If it is not able or chooses not to create a separate R&D unit, it may apply to other public programmes. The accreditation function most probably remains useful; but the distinction between support programme beneficiaries according to their membership to the RVCTI should be periodically reviewed for on-going relevance.

The Basque innovation system is distinctive among OECD regions for its strong institutions to support applied research, the degree of public-private collaboration, and low level of public research. Many of the most prominent innovation system actors are part of the Basque Network on Science, Technology and Innovation (RVCTI), with the notable exception of firms that have not created a private non-profit R&D unit distinct from the parent company. The three subsystems of the network include:

- Scientific and university sub-system (including universities and excellence research centres)
- Technological development and innovation subsystem (technology centres, firm R&D units, health R&D units, etc.)
- Support to innovation subsystem (technological parks, intermediaries)

3.2 Key features of the practice

- Very consolidated network (established in 1997)
- More than 100 Basque institutions network, working jointly to offer a comprehensive technological offer, specialized to the Basque industrial sector.
- It is a very important instrument of the Basque Science, Technology and Innovation System.
- Considered as “strategic line” in the different innovation plans of the Basque Country.
- In order to support the industrial sector and the Basque society in its innovation processes, the network is worldwide connected.
- The network internationalization allows the identification of global business opportunities, and their application in the Basque Country.
- The network encourages the participation of Basque companies, particularly SMEs, in European investigation programmes.
- A coordinated management of scientific-technological equipment of the network agents allows sharing the facilities among the members maximizing the use of them.
- It is an innovative network, which has assumed different changes according to the groups of actors considered to be included. The network has been regulated by different Decrees.
- The network groups public and private agents with the same objective to develop a technologically smart infrastructure.
- Actors work in a coordinated and complementary way from close to the Basque business fabric.

3.3 Detailed content of the practice

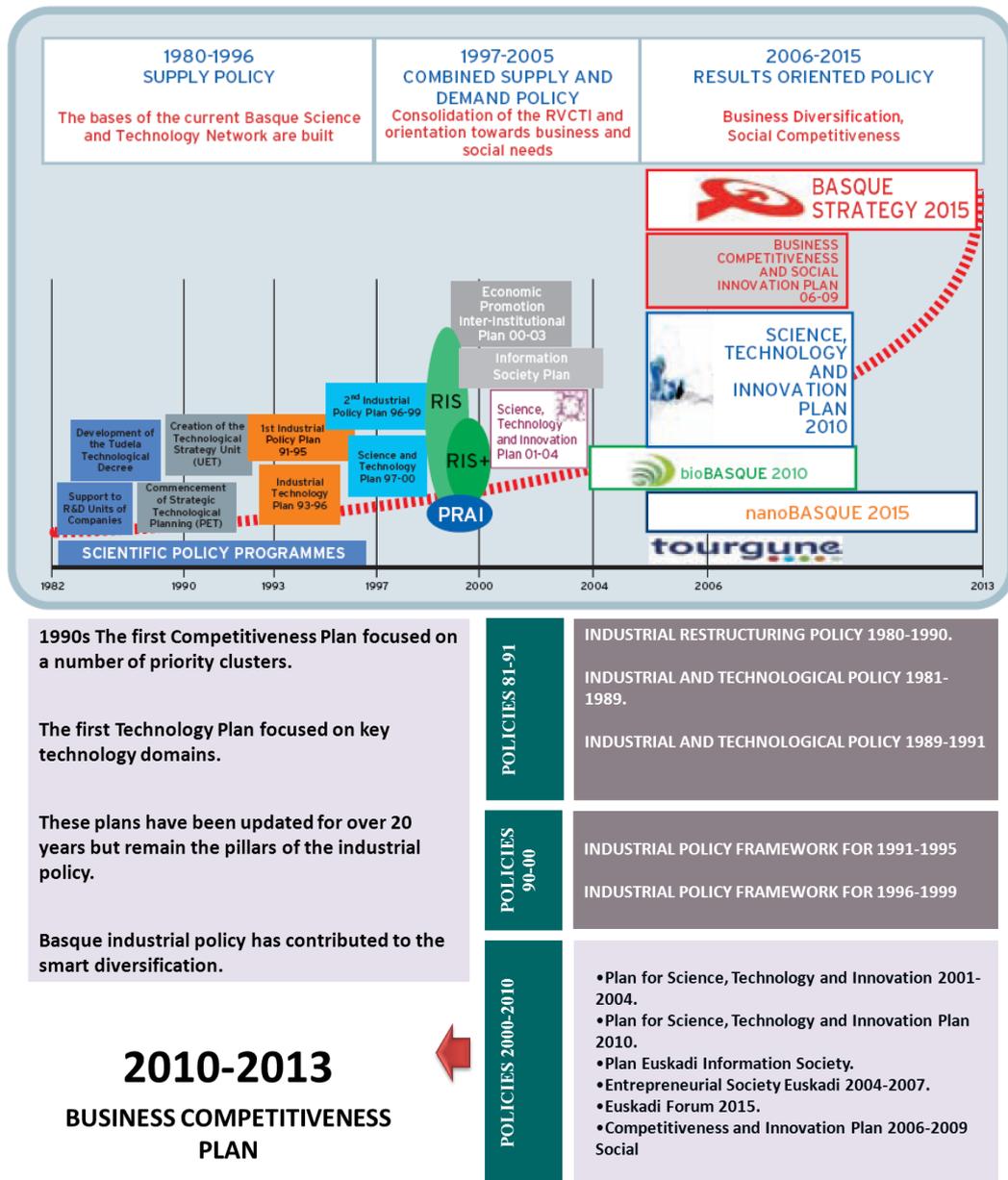
The Basque Country has a long tradition of industrial planning, translated into a long term regional development and innovation strategy. The lack of R&D in the traditional industry was object of a strong political support to increase the innovation in manufacturing industry. Since early eighties a long-term strategy has guided the transformation from traditional industry based economy towards knowledge intensive society with the support of the innovation system agents. The strategy has been grounded on four strategic priorities: technology and innovation, cooperation, quality and internationalisation which have been targeted in all the industrial sectors. As a result, from initially non-existent investment levels, the R&D expenditure level has reached European average. Since, mid 1990's the technology policies were transferred to take into account the interactions of different actors – policies supporting cluster creation as an example and through these three decades, the Basque strategy has been oriented to the creation of value, on the basis of innovation and on the capacity to anticipate future needs to reach higher level of competitiveness.

Initial policy efforts were concentrated in creating the *technology infrastructure* that would allow a competitive technology supply for companies permitting them to increase their competitiveness. This marked the foundation of the Basque science and technology system. That was consolidated step by step whilst incorporating into the agenda the need to systematically promote technological demand by companies and the production sectors. Policy was also oriented to address business and social demands in the biosciences, nanotechnologies and renewable energies has been pursued and relevant investments made in this direction (cooperative research centres, etc.). Other regions across Europe have followed similar paths.

Industrial activities were traditionally centred on steel and shipbuilding; activities that decayed during the economic crisis of the 1970s and 1980s, giving ground for the development of the service sector and new

technologies. Today, the strongest industrial sectors of the Basque Country's economy are machine tool, aeronautics and energy.

Since the 1st Competitiveness Programme in 1991, the 1st Industrial Technology Plan in 1993, the Basque Country has updated its regional strategy on competitiveness and innovation as it can be seen in the following picture that shows the trajectory of a continuous planning.



During the last two decades, the Basque Government has developed a **policy on science and technology** aimed at supporting the Basque Country's existing industrial fabric and preparing it to face the challenges of the future.

The current Strategy on Competitiveness and RTDI is based on a common regional vision and operationalized in different strategic documents that pursue the goals of a smart, inclusive and sustainable development. The most important documents are:

- Plan for Science, Technology and Innovation (PCTi 2015)
- Plan for Entrepreneurial Competitiveness 2010-2013

The Basque Science, Technology and Innovation network is a well-established practice within the Basque strategy. The origins of the network are due to the initial efforts of the Regional government to build the science and technology infrastructure to situate the Basque Country region in better productivity trajectory. First attempts to create the network were already through the government supported the *science network called EITE* (1986) basis for the existing technology and science centres of the region. Lately, the network evolve to a new network the *Basque Technology Network (RVT)*, instituted in 1997 (Decree 96/1997, establishing the characteristics of the members to be part of the network) in the framework of the Science and Technology Plan 1997-2000. The Decree was modified in 2000 to create the *Basque Science and Technology Network* (Decree 278/2000), and finally the *Basque Science, Technology and Innovation Network* (Decree 221/2002).

Nowadays, the *Basque Science, Technology and Innovation Network* aims to foster and better co-ordinate the supply and transfer of scientific and technological knowledge developed by accredited non-profit institutions to the Basque productive sector.

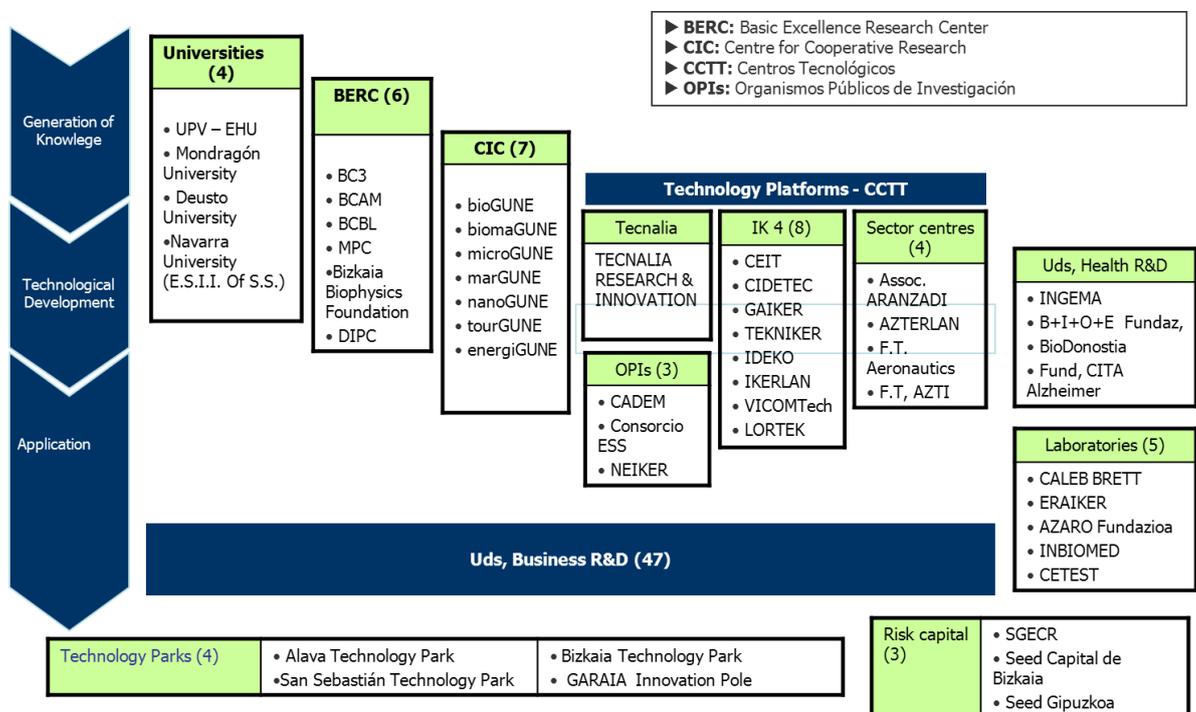
According to INNOBASQUE (Basque Agency for Innovation) *the Network aims to develop a technologically smart infrastructure, which networks in a complementary and co-ordinated way, from a market viewpoint in close proximity to the customer, capable of providing an integral, sophisticated and specialised technology offering to the Basque business fabric. Based on the Science, Technology and Innovation Plan (PCTI 2015), Innobasque's actions concerning the Basque Science, Technology and Innovation Network consist of:*

- *Fostering effective co-ordination and collaboration of all agents in the fields of science, technology and innovation.*
- *To facilitate interaction between agents in the Basque Science, Technology and Innovation System and to articulate the demands of the production fabric with the skills in the system.*

The Basque Science, Technology and Innovation Network, it has (both in the past and nowadays) an important role in this career path, contributing to create spaces for connection and exchange of knowledge. Some of the main agents of the network are:

- **BERC:** 6 Research Centres of Excellence (BC3, BCAM, BCBL, DIPC, Biophysics, Material Physics) have been founded by the Basque Government to achieve excellence in science.
- **CIC:** 7 Centres for Collaborative Research (CIC biomagune, biogine, margune, nanogune, microgune, tourgune, energigune) have been also founded by the Basque Government in specific priority areas, clustering the regional efforts on achieving excellence in science and technology.
- **Network of Technological Centres:** The first technology centers were created by Industry Department (Basque Government) in 1982, through which universities and companies could collaborate. They help to integrate R&D actors with companies. In addition, networks and alliances of Technology Centres, such as TECNALIA and IK4, help to exchange information, coordinate R&D and become more efficient. Mechanisms to link Technological Centres and alliances to the Regional Authorities are important to assure strategic action.

- **Network of Technology Parks:** There are 4 Technology Parks which give mostly high-level employment to more than 14.000 people, in the Basque Country. They are connected within a Regional Network. The Zamudio Technology Park was created in 1985, the first of such parks in Spain.
- **Clusters:** There is a strong tradition of cluster organisations in the Basque Country. A strong model based on triple helix approach (business-knowledge-government) where all these parties cooperate and establish links to increase overall regional competitiveness. Currently there is a tissue of 12 priority clusters in the Basque Country, most of them with more than 15 years of experience. There are cluster in the traditional industrial sectors (Electro-machines, Machine Tool, automotive, ICT, Port,) as well as in emergent sectors (Audiovisual, Environmental Industry, logistics). Cluster associations help to disseminate valuable information and to create trustful relationships with other spheres (universities, administration, financing).



All in all, the best practice consisting of the Basque Science, Technology and innovation Network is linked to the Smart Specialisation Strategy, as it is a means to better co-ordinate the agents of the system providing smart infrastructure in a coordinated way. The network structures the system in being a strategic pillar of the different innovation plans included in the Basque regional Strategy. It is already more than 15 years that the network is operative, and it has been in continuous evolution according to the requirements of the different moments, the network has been adapted as well as its legal framework. We understand that it is a very important instrument that permits to articulate a complex system of regional agents (more than 100).

3.4 Bodies and stakeholders involved

The Basque Science, Technology and Innovation Network arranges in three sub-systems:

1. Scientific and University

- Universities
- Cooperative Research Centres (CIC)
- Fundamental and Excellent Research Centres (BERC)

2. Technological Development and Innovation

- Technology Centres
- Sectorial Centres
- International Centres for Technological Development and Transfer
- Certification Authorities and Laboratories
- Public Research Organisations
- Business R&D Units
- Health R&D Units

3. Support to Innovation

- Technology Parks and Business and Innovation Centres
- Intermediate Organisations for Innovation

3.5 Timescale and maturity

The Basque Science, Technology and Innovation Network (RVCTI) has its origin in 1997; initially named Basque Technology Network (RVT), in 2005 its scope was broadened and changed its name into the Basque Science, Technology and Innovation Network (RVCTI), which presently regroups more than 100 non-profit institutions.

3.6 Legal framework

The network, established in 1997, is currently regulated by the Decree 221/2002¹ that updated its basis.

The main purpose of the new regulatory decree is to strengthen the network in order to take advantage of the synergies and connections among the diversity of agents that take part of the network. For this reason, a more simple structure has been established, providing a more flexible, dynamic and competitive network at global level.

All the agents 'typology defined will have clear eligibility rules, in line with the results expected from them, in order to take advantage of cooperative work. Enterprises will have an increasing role in the network governance, focusing on the configuration of an open and attractive system for foreign scientific-technological capacities.

3.7 Financial framework

The Basque Science, Technology and Innovation Network was initially created as a private non-profit organisation.

1 http://www.euskadi.net/cgi-bin_k54/ver_c?CMD=VERDOC&BASE=B03A&DOCN=000043657&CONF=bopv_c.cnf

4 Monitoring and Evaluation

As mentioned before, the Basque Science, Technology and Innovation network has its origins in 1997 with the RVT (Basque Technology Network). Along with its creation, different programs and procedures were established for granting refundable grants, in order to involve the technological agents within the network to follow the action lines defined in the Basque Government's Plans.

Eligible activities were mainly the following:

- "Generic Research Projects" demand-supply projects on technological research that has a strategic interest for companies and business clusters.
- "Specialization Programmes" aimed at deepening those priority technology areas.

The next tables reflect the generic research projects of the Basque Science, Technology and Innovation network during the last years (number of projects and support in euros):

Year	Generic Research Specialization	Generic Research Demand/Supply
1997	56	131
1998	63	133
1999	67	126
2000	62	139
2001	76	126
2002	118	134
2003	140	132
2004	182	115
TOTAL	764	1.036

	1997	1998	1999	2000	2001	2002	2003	2004
Generic Research Specialization	5.496.905	6.171.409	7.291.130	8.170.153	6.996.230	13.804.510	12.681.480	18.492.030
Generic Research Demand/Supply	9.512.261	9.341.405	9.166.468	9.592.388	7.923.390	9.182.070	8.932.920	6.330.860
TOTAL	15.009.166	15.512.814	16.457.598	17.762.541	14.919.620	22.986.580	21.614.400	24.822.890

The launch of the Science, Technology and Innovation Plan 2001-2004 (PCTI) was a reformulation of some of the measures and the development of new initiatives, introducing aid projects for strategic research. With the approval of the Science, Technology and Innovation Plan 2007-2010 (PCTI 2010) new funding parameters were introduced, with the focus on results orientation. Therefore, the old classification of projects based on specialization or generic research loses force, whereas now all the Network actions are results oriented.

The next table shows the projects evaluated as well as the support given to the R&D&I projects of the Basque Science, Technology and Innovation network.

	2005	2006	2007	2008
RVCTI Evaluated projects	382	335	337	295
RVCTI R&D&i projects support (€)	61.528.823	40.974.968	62.195.954	80.603.801

5 Lessons Learnt

1. One of the lessons learnt during the development of what is now the Basque Science, Technology and Innovation Network, is that it has managed to re-adapt itself during the years. What began as a network of technology centres (EITE), later evolved to the Basque Technology Network, constituting nowadays the Basque Science, Technology and Innovation Network.
2. During this evolution the type of entities that have been part of the Network has been extended: from the initial technology centers to universities, CICs, BERCs, etc., which constitutes a true example of open innovation.
3. A good example of open innovation in the Basque Science, Technology and Innovation Network is the project OpenBasque (www.openbasque.net), a strategic research project funded by the Basque Government, with the participation of four members of the Basque Network (Basque Country University, TECNALIA, MIK and Ikerlan). OpenBasque aims to maximize opportunities for value creation for individuals, organizations and Basque society as a whole by overcoming current endogenous innovation model for a new open one and network distributed.
4. The Basque economy is largely driven by industry. The service sector has grown rapidly in the two last decades, but a closer look shows that production oriented services double consumption oriented services. The shift to more knowledge intensive sectors (e.g. biotechnologies, nanotechnologies, energy) indicates a promising future for services. This evolution is also somehow reflected in the change of member typology of the Basque Science, Technology and Innovation Network (from technological centers to CICs, BERCs, Universities, etc.). As a result of the effort and collaboration done by different stakeholders the Basque Science, Technology and Innovation Network, the Basque region (with Canary Islands region, Emilia-Romagna, Luxembourg, Northern Ireland and Upper Austria) was selected in June 2012 as model demonstrator regions on service innovation. For further information:

http://ec.europa.eu/enterprise/newsroom/cf/itemdetail.cfm?item_id=6289&lang=es

http://www.europe-innova.eu/c/document_library/get_file?folderId=961021&name=DLFE-13714.pdf