REGIONAL INNOVATION SYSTEM AND THE BUSINESS SERVICE SECTOR

The Case of Catalonia

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This paper is dedicated to
Kimberly and Ricardo.

TABLE OF CONTENT

TABLE OF EXHIBITS

Executive Summary

The present paper analyses the situation of small knowledge intensive business services in the region of Catalonia. The role of the region for the innovativeness of these businesses if of special interest, as regional innovation policies are gaining momentum in the European Union. The guiding presumption of the paper is the following: the innovativeness of these enterprises in Catalonia would benefit much more from framework policies addressing crucial resources such as human resources and knowledge than from sector-specific policies.

Considering the difficulties to evaluate innovativeness in the service sector, the paper chooses a mix of quantitative and qualitative data in order to explore the topic. Theoretical considerations on innovation and the system approach are combined with empirical data from the region of interest. These insights are used as the analytical background for a qualitative case-study with a sample of five business services from the region. The interviews were conducted in July 2007, focusing on competitive strategies within the businesses, human resources strategies, and the role of the location for business strategies.

The analysis of the interviews confirms the importance of an educated and medium and high skilled labour supply. This is a major problem for Catalan businesses, as the educational system does not satisfy the demands of local industries and services. Consequently a reform of the framework policies in the region would already increase the competitiveness of the most innovative businesses. Considering the heterogeneity and dynamics of the service sector these policies would also reach a much broader audience then targeted sectorial programs.

Introduction and Hypothesis

Innovation is foremost an economical phenomenon, related to the competitiveness of enterprises in a challenging and fast-developing market. Globalization has expanded this market, increased competition, and, as a consequence, innovation has become more important than ever before. Although globalization brings markets, providers, customers, and competitors closer together, it has not offset location as an important factor for both politics and economics. Each individual firm takes advantage of combining its moveable productive factors with the region it is embedded into, to gain a unique starting point for innovative capacity (Keating 1997: 25).

Meanwhile, policy makers have become aware of the possibility to influence the development of their regions through targeted programmes and incentives or support schemes. Because just as enterprises are affected by the region's political and economical framework, so does the regional welfare depend on its enterprises for economic well-being. The interest in supporting innovation is thus present in both areas, although strategies vary between firms and regions alike.

In order to analyze these interdependencies, this paper will focus on the innovation framework in one particular region, the *comunidad autónoma de Cataluña* in Northern Spain. Within this framework, the focus will be on small service enterprises working with business customers. Considering that the service sector includes between 50% and 70% of all economic activity in most developed countries, it becomes clear that innovation is not only a requirement for industrial and manufacturing enterprises. Where both goods and services can be traded world-wide, due to an increase in communication speed and decreasing costs of establishing and maintaining these communications, innovation becomes a major factor in competition in all sectors of the economy.

Despite its economic importance, innovation in the service sector has been neglected by scholars and policy makers alike. As traditionally the manufacturing industry had been considered to be the main source of work and economical growth, the service sector had been labeled a mere appendix of the industrial sector. Services were supposed to take up technical innovations, but without contributing much by themselves.

The heterogeneity of the sector adds further difficulties in drawing up a concise framework on innovation in the service sector, or for an economy as such.

The present paper does not pretend to embark on this task either. Rather than attempting to construct a theory for all, the main objective is to understand how small business services in the region of Catalonia interact with government policies. In this context the role of culture and location will be highlighted, combined with the specificities of the chosen sector (Keating 1997: 34). The primary reason for this approach is my own interdisciplinary background, which has given me one clear insight: there is no one reality, nor is there one universal truth. All that science can do is decipher parts of reality, putting sense into data that mirror fractions of this reality, however without claiming to have found the only valid explanation or solution. The different results of scientific inquiries then might help to find new approaches to deal with reality which otherwise would not have become salient. Theories are thus helpful devices for real decisions, but must never be taken as the only possible device.

The focus of this paper will thus be one part of the service sector, namely the B2B sector, where businesses perform services for other businesses, and not to the individual end-customer. Within this section I will focus on knowledge-intensive services provided by small enterprises, such as consulting firms. I do not distinguish however, whether these services are delivered to small or big companies, although it is much more common for small companies to outsource their own services or to order certain consultancy services for their businesses.

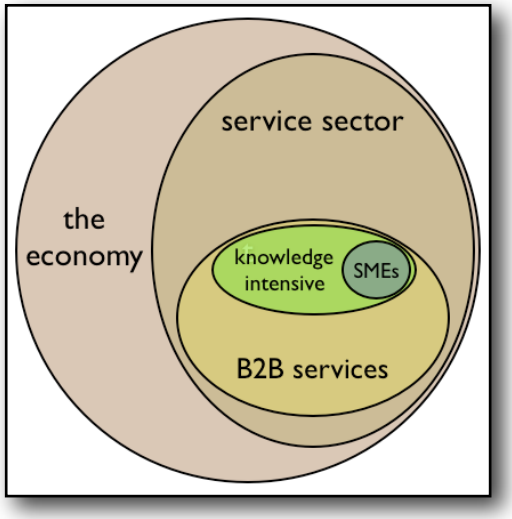

Exhibit 01: Fraction of the economy selected for analysis, personal elaboration.

Considering the importance of the region for these enterprises, an assessment of the innovation support capacities targeting this sector of the economy will be included. As it is difficult to design policies for "the service sector", the assumption holds that it is just as difficult to design concise policies for parts of this sector, especially when heterogeneity is only partially reduced by sub-dividing the business sector. The guiding question of this paper is thus:

The innovativeness of small enterprises in the business service sector in Catalonia would benefit far more from adequate framework policies addressing the main resources of the sector (e.g. personnel and knowledge), than from specific policies targeting selected characteristics of the sector.

Apart from scientific literature on innovation and competitiveness, the paper includes a case study with a sample of five selected business services. The analysis of how these selected enterprises innovate and perceive innovation as a competitive advantage will be based on the metaphor of the wooden stool, visualizing the essential ingredients of a successful innovation support framework within a limited geographical area.

The Wooden Stool-Metaphor

Both social scientists such as Keating (2001) and economic scholars such as Cooke / Leydesdorff (2006) point out different aspects that may influence the economic performance of a given region. It is the specific interplay of these characteristics that (I'm not sure if "that" is the correct word here, but this sentence is missing a word in order for it to make sense) built the constructed advantage of each region. The advantage is constructed insofar as it can be influenced by policy makers and other agents, although it cannot be controlled in each and every detail. The three characteristics adopted for this paper are: 1) the economy, 2) the role of institutions and enacted policies, and 3) cultural traits. Cooke / Leydesdorff (2006) adds still a fourth component, the knowledge infrastructure. However, as small enterprises, and especially small business services have only little interaction with universities and research centers, this aspect will not be explicitly included in this analysis.

The missing link between services and knowledge infrastructure is also the reason why the triple helix model (e.g. Etzkowitz / Leydesdorff 2000) will not be further explored within the scope of this paper. For the industrial sector the close interaction between industry - government - academia is of vital importance for a successful innovation support system. However, for the service sector the regional endowment seems to be more important than the university relationship (UMIST 2003: 73). It should be noted, however, that the relations between different players are no less complicated without an explicit inclusion of academia. The description of Etzkowitz / Leydesdorff (2000: 112) that "this network of relations generates a reflexive sub-dynamics of inten-

tions, strategies, and projects that adds surplus values by reorganizing and harmonizing continuously the underlying infrastructure" holds just as well for the interrelated relationships between region, economy and politics.

In order to facilitate the structure of this paper, a metaphor has been chosen to represent the support for a competitive economy using the three characteristics mentioned above. For an economy to be considered innovative a certain number of its enterprises, organizations and entities need to be innovative. Although innovation usually takes place on the micro level of the individual firm, the economy as a whole benefits from these innovations, for example through more competitive firms, more job opportunities, higher growth rates, etc. **Innovation on the micro level** is thus the first leg of the wooden stool of competitiveness.

The second leg is represented by the **policies and the legal framework** enacted in order to ensure the competitiveness of the economy. Although it might be argued that innovation on the micro level is an outcome of the legal framework, this is not entirely true. Innovation might also occur while (consciously or unknowingly) ignoring certain laws. Or, policies might have an impact insofar as to foster innovation in one part of the economy while deterring it in others.

The third leg represents the culture and location of the economy, which refers to the spatial dimension selected for analysis (e.g. a nation state, an administrative region, a cross-border region, a cluster), but also to cultural traits manifest within the population of this region. Differences in economic performance between regions and states are not only due to differing legal frameworks and distinct economic endowments fostering one or the other micro level activity. Cultural values such as trust (reducing transaction costs), networking (allowing quick spillovers of new ideas), and protection of in-group activities (excluding foreign firms), all have an impact on how the economy as a whole fares in international comparison.

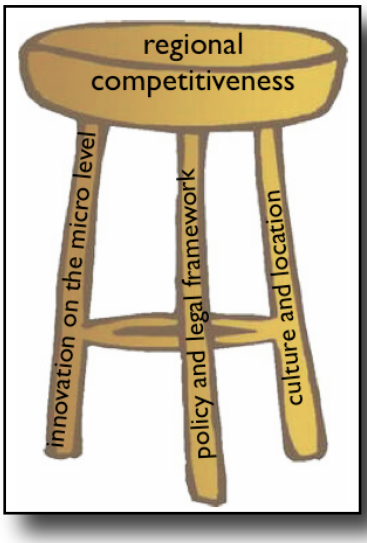

Exhibit 02: The wooden stool of competitiveness, personal elaboration.

The picture might appear too static to represent competitiveness in an economy. However, just like all theoretical models, it is not meant to depict reality as it is, but to highlight certain links. That said, the metaphor is useful in clarifying some important characteristics: first, the stool is made from wood. The material it is made from has grown. When putting together a stool, the carpenter has to follow the grain of the wood in order to ensure maximum stability. She cannot craft the stool without considering its material, as it would lead to unnecessary instability. This also holds true for economic systems. Innovation on the micro level can be influenced, but it cannot simply be ordered from above, as it is the individual enterprise that decides whether and in which way to innovate (though this might be an unconscious decision). The legal framework might be altered, but it is always based on what was there before. Cultural traits need to be considered to ensure that initiatives are accepted rather than opposed for "irrational" reasons.

Structure of the Paper

Inspired by the wooden stool metaphor, the paper is divided into four main chapters. Three chapters are dedicated to the analysis of the three "legs" supporting the seat of performance of the B2B service sector. First, the role of innovation on the micro level and its effect on the macro level are reviewed. Second, the legal framework and policy approaches towards innovation get closer examination, followed by, third, the consideration of culture and location, using the example of the Spanish *comunidad autónoma* of Catalonia. Once these facts and figures have been established, the fourth chapter presents voices of the business service sector in the form of an analysis of five semi-structured interviews with managers from selected small enterprises. Contrasting their viewpoints with the general information beforehand will help to better understand the needs, necessities and challenges of small business enterprises at a specific point of time and in a specific region. The paper ends with a section of concluding remarks.

Innovative firms - the driving force of modern economies

This chapter focuses on the basic condition for a competitive economy: a variety of businesses competing on the market, offering goods and services to either businesses or individuals through the use of the three productive factors of labour, land, and capital. This competition is not restricted to the service or good offered, but also includes price tactics, additional offers, brand images, and diverse marketing strategies. Whether an economy is then deemed competitive or lagging behind in international comparison is mainly due to the combined effort of all its economic actors, even though these actors work predominantly for themselves, instead of considering consciously what would be better for the economic framework.

Developed societies tend to have a comparably high wage level combined with a full-fledged welfare state imposing taxes and other fees on its companies. Thus, a competition based on the production costs alone is not viable for enterprises in Western Europe. With trade barriers falling within the enlarged European Union, with many multi-nationals relocating their production sites further East or into Asia, European small enterprises need another strategy to remain competitive. They are forced to differentiate their offers based on something else than just prices. In short: companies need to innovate to stay ahead of their competitors, and this is valid for all three sectors of the economy, not only for the industry sector.

Traditionally, innovation is linked to products, considered as one input for finding solutions to new demands voiced by customers. Innovation management then is the art of entrepreneurs to scan the market for signals by customers or even competitors, select the right opportunity, invest into R&D and finally bring the new product to the market (Tidd et. al 2004). However, innovation can be much more. Further, it needs to be much more if the service sectors is to be included in the analysis.

This chapter thus offers a framework to understand innovation as a driving force of the economy. Offering different approaches to classify and operationalize this entrepreneurial phenomenon, the strengths and weaknesses of different interpretations of innovation will be assessed. There is a special focus in the discussion in the second part of the chapter, where the importance of innovation for small business service

firms will be used to broaden the traditional conception of innovation as a product-related management tool.

The Changing faces of innovation

Originally, the word innovation stems from the latin word *innovatio* which means renewal or change. In everyday life this description is still valid. Someone is innovative when she has many ideas .A product is innovative when it is completely new. However, in academic literature, the meaning of innovation is not as all-embracing. Joseph Schumpeter, often cited as the father of innovation theory, distinguishes between innovation and invention in his Business Cycles (1993). The American Heritage Dictionary of English Language defines invention as "a new device, method or process developed from study and experimentation; a discovery, a finding", from Latin *invenre*, which means to find. Following Schumpeter, an innovation is simply an invention that has been brought successfully to the market. There are many inventions, but only those that enter the business world and are used as economic differentiations qualify as innovations. The process of diffusion is thus an integral part of the definition of innovation, not only for Schumpeter but also for recent discussions on innovation management and innovation systems (Lundvall 2007, Tidd et al. 2001, Fagerberg et al 2005 and others).

Schumpeter states in his chapter "Theory of Innovation", that the act of innovation usually goes along with something he calls creative destruction. Innovative products (and services) often challenge the existing market. Through a combination of existing products into a new one or through the substitution of an older product with a new one, innovation has an impact far beyond the innovation process in itself. It is this effect that Schumpeter recognizes with his concept of creative destruction.

It should be noted that Schumpeter did not entirely restrict his understanding of innovation to products. His definition is comparably broad and embraces products, services, processes and organizations alike. The important distinction is the one between invention and innovation. The innovation needs to have an impact. It needs to come to the market in order to be considered as such. In this context, he divides economic history into waves of economic development, triggered by major innovations that had an impact not only on a small sector, but on the economy as a whole. The First Indus-

trial Revolution was thus triggered by steam power. The Second Industrial Revolution based its success on electricity, etc. However, as Bruland et.al (2000: 351f) rightly criticize, the reduction of different epochs to one or two dominant innovations obstructs the analysis of the transformation these innovations brought with them. Changes in economic structures involve changes in institutions and work organizations, which in itself might result in even more innovations in order to keep up with a changing reality. What is often overlooked in this context is that the steam engine or electricity did not only change the products brought to the market and the way these products were produced. From the very beginning, these changes required an adaption of society through an adjustment in public institutions, e.g. the school system, welfare system, family structures, etc. To understand the origins and the impacts of one single innovation consequently always requires a close look at its broader effects on other, perhaps not even immediately related, sectors.

Another historically rooted connotation of innovation is its mix of genius-driven and science related origins. During the First Industrial Revolution the inventors (though not necessarily the innovators, which brought the new products to the market) were usually individuals, working either alone or within large enterprises (Bruland 2000: 355). Teamwork was not very widespread and the typical inventor might have been someone like Disney's depiction of Gyro Gearloose, who in his backyard boils up the most interesting inventions. It is only during the Second Industrial Revolution that Industrial Research becomes popular, resulting in more inventions being turned into innovations, as companies had an interest in commercializing findings done within the organizational limits. Chemical laboratories in Germany, as well as similar entities in the US, did not only invest into planned research, they also lobbied for changes in the educational system, which was one reason for the reform of the US patent policy in the early 20th Century. Through this reform, which entailed a strengthening of the patent-holder's rights, in-house research became institutionalized in many producing industries. (ibid 360).

Whether today we still see part of the Third Industrial Revolution based on electronics and information and communication technology or if a Fourth Revolution (though not necessarily an Industrial one) is on its way, will be debated later. What is clear, however, is the huge impact of the advances in electronics technology since World War

II. The cold war was, at least in the US, the main reason for huge governmental investments into R&D related to computer systems, software, and semi-conductor elements, as the military was also the main consumer of computer-related products. However, with falling prices, rising performance and the invention of the micro processor, the new industry leapt from military usage to industrial usage and soon personal computers were part of most major enterprises. The internet later opened yet another strand of opportunities to what was by the 1980s already widespread use of desktop computers. Furthermore, the network idea was subsequently widely employed in big enterprises engaged in in-house research, such as chemicals and pharmaceuticals.

The shift from the Second to the Third Industrial Revolution also entailed a shift of input for R&D through all industries. While innovation before World War II was very much linked to natural resources and their availability (within a country or at least in its colonies), the Third Revolution shifted the main ingredient from physical endowment to the availability of trained scientist and researchers. The knowledge base of different economies became more important, even though part of this resource could also be imported from elsewhere (e.g. foreign researchers at US research laboratories). Innovations are much more likely to stem from laboratories or technological centers than from individual backyards, at least when considering product innovations.

Systematizing Innovations

Although, innovation does not necessarily mean the alteration of a physical product. It may also be based on the production process or the organization around this process. The common denominator of different forms of innovation is quite simple, but not necessarily less difficult to manage: innovation always includes change. With a focus on the product industries, this change can either be technical, leading to product innovation or organizational, resulting in process innovation. (Tidd et al. 2001: 6). Some scholars also choose to distinguish between organizational and process innovation as two different kinds of innovation. The exact borderlines between these three are often blurred (e.g. in the service industry), however, for the sake of analysis it might be helpful to classify the wide range of innovations.

Product innovation is used to designate the invention and marketing of new products (or services) that have not been there before. Process innovation refers to an alteration of the production process, for example in saving time, cost or other resources in order

to produce an already familiar product. Organizational innovations are often either a result or the predecessor of process innovations. They occur when organizational practices and standards are changed in order to, or as a result of, alterations in the production process. Organizational innovations are thus more difficult to measure. They are difficult to detect from outside the directly affected firm, and they are usually not protected (and thus published) via patent applications or trade mark registries. In most cases, organizational innovations include at least as much change as other forms, and probably are even more difficult to put into place, as this often includes the delicate task of redefining responsibilities and "the way things are done around here".

While the above mentioned division into product, process and organizational innovations describes the receiving end of the innovative activity, the distinction between radical and incremental innovation is more concerned about the amount of novelty involved. In this context, innovation may either result in doing something *better* (incrementalist approach) or in doing something totally *different* (transformation). These forms of innovation are by no means exclusive, although an incrementalist approach might be favored by firms and organizations which are more risk-averse than others.

An example of an incrementalist approach is the integration of digital cameras and mp3-players into mobile phones. Even though the new photo-taking and music-playing telephone is new in itself, all three elements existed previously. Both incremental and radical innovations have their advantages and draw-backs. The biggest advantage of a radical innovation is the new markets where no competitor has been before, thus giving the first mover a distinct advantage over its followers. However, these markets might need to be developed first, as many potential users might not be aware of the existence of the new solution. In this case the advantage of being the first user crucially depends on the speed of teaching potential users the new product to overcome their hesitancy over trying something new.

Incremental innovations are usually easier to be adopted, as users already know the basic concept that has been improved. However, the market is already filled with potential competitors who might just introduce the same change as well. Furthermore, existing (not-incremented) products or services might discourage potential customers. Somebody who just bought a cell phone without a camera is likely not to jump at a cell-phone camera, as it would mean a double expense on the cell-phone side. All the

same, as incremental innovations are much easier to manage and to implement, they make up the major part of innovations in all three categories of innovation. (Oke 2007: 570).

Although innovation is usually linked to companies introducing a new or different product or service into the market, the process of innovation is by no means restricted to the firm and may also be influenced from the outside. It should not be underestimated that innovative firms usually draw on external links, cooperation, unconventional ideas, and personnel who have to be trained at local universities. Tidd et al (2001: 39) propose the following way to successfully manage innovations: 1) scanning the environment for opportunities and threats of change, 2) deciding on which of these signals is important for the individual firm, 3) discover and allocate resources to respond to the new challenge, 4) implementing the project of innovation. Finding the right signals is thus the most important factor for the innovative firm. These signals are very likely to come from outside, including innovations of competitors, innovations in other sectors, new legislation, sudden change in price and/or availability of raw material and other resources, and changes in labour supply. This is then, where the systemic view gets its merits, and where innovation policies might have their place.

In the end, however, it is the individual enterprise that will put the innovation to market (independently if it has been developed in-house or adapted from the outside), and the above mentioned distinctions do not necessarily help to decide where to invest or where to start looking for possible opportunities. Considering these difficulties, Erich von Hippel advocates yet another systematization of innovation. His book *The Source of Innovation (1988)* presents his complete argument on the importance of where innovation actually comes from and how to use these sources for both the management in an innovative firm, as well as politicians who try to enhance innovativeness within the economy. Already 20 years ago, van Hippel challenged the mainstream tactics of breaking down innovation into different subcategories before analyzing its effects. This practice always fails to include some variation of innovation, exactly because innovation trajectories cannot be foreseen and may change unexpectedly. A firm that focuses only on product innovation may thus fail to realize important process innovations due to a false understanding of what innovation means. Consequently, van Hippel does not ask where innovation goes to but rather where do these ideas come from.

What he calls the source of innovation can be understood as the main origin of input for an innovative product, process, service, organizational change, etc. This origin can be tracked relatively easily through observation and investigation, and once identified, it can be stimulated to foster more innovation.

Innovation research, the organization of innovation and R&D management, as well as policy proposals, have been shaped by the assumption that innovation is something done by the firm alone, sometimes even singled out into the R&D department. However, following von Hippel's argument, depending on the industry sector, other sources of innovation might be of much higher importance. The main input might come from users (user-driven innovation), which in terms of company strategy should lead to an active involvement of the user community in the innovation process. In other industries the main input for innovations may come from suppliers that might be able to offer different (cheaper, more resistant, more flexible) working material if asked for their opinions. In other situations the in-house research group, the university contacts, or the regular networking meetings might be the most important sources of innovation. Interestingly, although van Hippel developed his approach based on data from manufacturing firms, the idea is not restricted to product innovation, as the source of innovation does not determine the later development of an innovation, but rather serves as the first spark. Detecting this spark thus is of crucial importance for companies. However, as soon as managers know where to look for it, the task of scanning the environment for suitable signals (Tidd et al 2001) is much easier.

Similarly, it can be argued that policies in diverse contexts (National/Regional/Local) can be tailored to the sources, rather than the outcomes. If the main source of innovation is lead-users; communication with these users should be strengthened, while secluded R&D departments might be reduced. If the main source of innovation is the personnel, a focus on education and training for both companies and politics might be appropriate. However, before turning to innovation policies later, some comments on measuring innovation are worth considering. Before assessing policies targeting a whole region, the needs and opportunities of the business service sector need to be discussed, as this is the main point of reference in this paper.

Measuring Innovations

Both science and politics are interested in measuring reality for a very simple reason: measurement offers a generally recognized method to construct a model of reality which can then be used to change this reality. Scientists, who are usually the ones to collect and interpret data, thrive to understand past events and predict possible future scenarios. Politicians are more interested in using these findings to design and defend concrete policies, as scientific arguments make a stronger case than unproven statements or ideological arguments. At best, science would provide a formula with easy-to-manipulate variables to allow politicians easy adjustments in their politics by adding a little more x and a little less y in order get the desired results. Entrepreneurs, in contrast, may use the results to adapt their strategies.

Measurements, however, do not result in clear-cut and unambigious data. They construct a reality, and the interpretation may conceal as many parts of reality as it highlights others. The characteristics of innovation as something qualitatively new and not bound to planning make the task of appropriately capturing the phenomenon in data even more difficult. Measurements and data analysis are usually done by scientists from the outside. However, it might be difficult to capture process or organizational innovations when analyzing enterprise data. Furthermore, innovation is closely linked to the use of knowledge and learning, two parameters that can be detected at best through indirect data, such as qualification of the workforce. In his analysis of the development of innovation indicators, Keith (2005: 149f) stresses the challenge of approximating a multidimensional and non-linear activity to the rigid expectations of a quantitative research agenda. Innovation as such is per-se new and often born out of unexpected developments, which cannot be cooked up following an easy recipe. Although scientists have long recognized the difficulties inherent in measuring innovation, the absence of a better solution has led to the widespread belief that R&D input is the best proxy for ensuring innovativeness in a certain economic sector or geographical area.

Linked to this effort is the analysis of the number of patent applications. The argument is quite simple: innovating individuals or companies have an interest in protecting their innovations as carefully as possible in order to ensure they get the compensation for the effort (in terms of Return-on-Investment, market share, popularity). Con-

sequently, the number of applications can at least give insight into the innovativeness of a certain region or sector. However, it has to be kept in mind that a granted patent does not automatically lead to its introduction to the market. Thus, the number of patents is actually a proxy for inventions and not as much for innovations.

The scientific interest in R&D numbers and patent applications finds a clear mirror in the political agenda. Based on benchmarking different nations or regions against each other, many governments have implemented an innovation policy that is better described as science policy, as it includes merely methods to enhance R&D measures and/or information for firms to go through patent application processes.

Nevertheless, the reduction of innovative capacity to R&D efforts and patent applications may exclude a fair array of innovative activity, as it represents a strong bias toward all types of innovation other than traditional product innovations (be they incremental or radical). Both process innovation and organizational innovations are usually not dependent on R&D and may not be patentable. Consequently, measurements in this context are bound to be partial only. (Pilat 2001: 27ff).

Of course this does not mean that measurements have decreased in popularity. However, it is always worth carefully checking what exactly is being measured in many innovation statistics. More often than not, innovation is meant to be restricted to technology and product innovation alone. The *Eurostat* publication *Statistics on Innovation in Europe* (2001), for example, only includes technological innovators in its sample. Innovation activities in this context are analyzed among all economy sectors, resulting in a much higher probability to innovate for manufacturing enterprises. Furthermore, larger firms are deemed more inclined toward innovation as they spend a larger part of their turnover on innovation-related activities like R&D, patent applications, and strategic alliances with universities or public research institutes. Needless to say, this assessment might give important insight into innovations in the technological sector, however, it does not capture the whole picture of innovations in Europe, as the title suggests.

Taking into account these difficulties, other factors have been included in many assessments of innovation. Examples include the quality of the workforce, a clear innovation strategy on the management level, active change management, joint ventures

with other companies, participation in research groups, and networking activities. The importance of learning abilities and knowledge management has already been included in the analysis of firms from all sectors since the 1990s (see for example Cohen et al. 1990, Porter Liebeskind 1996, Zabala-Iturriagagoitia et al. 2007). While most of these examples are difficult to quantify or measure, the difficulty in defining when an innovation is actually an innovation adds another challenge. New products are easily recognized, but to detect the introduction of new production processes into a given company, especially a small one, is a different matter. Scholars are not unanimous whether an innovation needs to be new-to-the-firm or new-to-the-market. Another difficulty is those solutions that are specifically client-tailored, as is often the case with consulting firms. Dividing between innovative and standard behavior in these cases is often a question of personal preference rather than an obvious decision. Nevertheless, it is important to balance between activities related to science and activities related to experience-based learning. Tacit knowledge and experience might yield as much input for innovative performance as does traditional R&D (Lundvall 2007: 104).

Innovation in the Service Sector

The previous pages have given an overview of how innovation is understood in a general sense, which is often synonymous with targeting the industry sector. Traditionally, this was the place where innovation was to be found, treating the service sector (and the agricultural sector for that matter) as lacking behind and as a pure user of innovations done elsewhere. Hence, the concept of innovation, the discussions on how to support innovation, as well as statistical evidence, suffer from a certain bias favoring industries and neglecting the necessities of the service sector. The latter is either left out completel, or included in the form of product/service innovation without further elaboration on specificities and peculiarities of the sector. The result is a certain distortion of relevance of services, as the statistics usually indicate that the manufacturing sector is by far the source of more innovations.

Meanwhile, the service sector has been growing in the European Union, which slowly is having repercussions on research and policy approaches. A substantial part of European employment (39.9% of EU-25 employment in 2004), as well as value-added (46.2% of EU-25) can directly be attributed to the service sector, more than twice the amount contributed by the manufacturing sector in the EU-25 economy.(Arundel et al.

2007). Furthermore, as shown in exhibit 03, this is not a strictly new development. Hence, there is now a growing recognition that services might be more than simple adaptors of innovations done elsewhere. The incorporation of technical innovations into the service sector may be only one of many factors triggering process and/or organizational innovations within the individual enterprise. Although the personal computer was not a service sector invention, its introduction into offices to facilitate organizational and administrative task has had a huge impact on service firms as well. Re-organization of existing jobs, the invention of new services which would not have been possible without the technical support, and even the back loop to other industries, stimulate the innovativeness of the economy as much as product innovations.

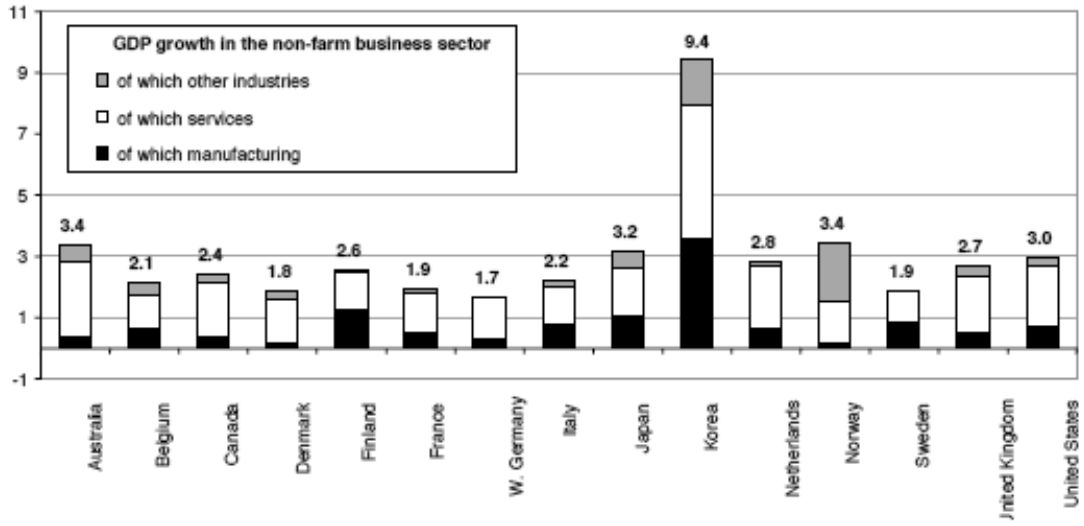

Exhibit 03: The role of services in OECD economies 1985-97. Annual average growth rates. Pilat 2001: 20.

Meanwhile, the service sector has been growing in the European Union, which slowly is having repercussions on research and policy approaches. A substantial part of European employment (39.9% of EU-25 employment in 2004), as well as value-added (46.2% of EU-25) can directly be attributed to the service sector, more than twice the amount contributed by the manufacturing sector in the EU-25 economy.(Arundel et al. 2007). Furthermore, as shown in exhibit 03, this is not a strictly new development. Hence, there is now a growing recognition that services might be more than simple adaptors of innovations done elsewhere. The incorporation of technical innovations into the service sector may be only one of many factors triggering process and/or organizational innovations within the individual enterprise. Although the personal computer was not a service sector invention, its introduction into offices to facilitate or-

ganizational and administrative task has had a huge impact on service firms as well. Re-organization of existing jobs, the invention of new services which would not have been possible without the technical support, and even the back loop to other industries, stimulate the innovativeness of the economy as much as product innovations.

The service sector also plays an active role in demanding solutions for new problems, which then might lead to more product innovation. The signal for a manufacturing firm for a new innovation opportunity (stage 1 in the innovation management process, Tidd et. al 2001) may well come from its service providers or customers from the service sector. Gadrey et al. (1995) clarify this task in their definition of service, which they understand as an *"operation aimed at transforming some reality C possessed or used by a consumer B, which is carried out by a provider A at the request of B, often in co-operation with B, nut not leading to the production of a good capable of circulating in the economy separately from its "support" C."*(p. 5). Services are thus solutions to existing problems and, if the solutions requires physical products, service providers will use them. However, the physical products remain a tool and not the service itself.

Even this general definition of services as offering solutions does not ease the special difficulties confronted by researchers and policy makers alike when approaching the service sector. There are two main differences when comparing services with the manufacturing sector: 1) the heterogeneity of the service sector and 2) the special characteristics of services vis-a-vis the customers.

Despite a general recognition of the importance of services, a general description of the sector is not easy, as the definitions historically denominate a left-over. Everything that was neither agriculture, nor the manufacturing industry, is services. Hence, the sector includes as diverse professions as hairdressers, hotel chains, restaurants, banks, babysitters, cleaning personnel, software firms, marketing agencies, taxi companies, consultancies, journalists, and everything else that does not produce a physical product nor belongs to agriculture. The lag in collection of innovation statistics on this sector is being corrected only slowly, a fact that can be attributed to the European Union, which has put services on top of its agenda (Arundel et al. 2007).

Special Characteristics of the Service Sector

The easiest, though not necessarily the best, way to include services in the discourse on innovation is the extension of product innovation to product/service innovation. In this context Oke (2007) for example distinguishes between service product innovation, which would be the product innovation related to services, and service innovations including both process and organizational innovations. This simplification already shows one important difference from the manufacturing sector: distinguishing between process and organizational innovation within the service sector is almost impossible, as the process of 'producing' a service is intertwined with the organization of the service provider. In fact, even the service offering (the 'product') cannot always be clearly distinguished from the process or the organization, as it is produced the same moment it is delivered (coterminality).

Even though the service sector is such a heterogeneous and diverse part of the economy, it is nevertheless possible to detect some common features shared by most service enterprises, differentiating them from industrial firms, independent of the further division of the sectors. Several scholars have defined the distinctiveness of services based on certain characteristics which are unique to services (Cowell 1988: 304ff, Miles 2006: 435ff). These characteristics can be summarized as follows: First, services offer intangible goods, which cannot be stored, nor transported, nor exported in the strict sense of exporting goods. This includes that it is usually impossible to test services before consuming them (as in the case of product samples).

Closely connected with the intangibility is the perishable quality of services. If not used at the exact time of delivery, the exact offer is gone. For example, a hotel room that is not booked this weekend is lost for the hotel, as it cannot go back in time to use the empty room during the next weekend when the hotel is full. Services are thus a process in themselves, which renders the distinction between product, process, and organizational innovation a difficult one when applied to services.

Second, services are usually difficult to protect through conventional intellectual property rights, such as patents. Furthermore, it is relatively easy for the competition to find out about services offered, and copying other firms' service offers is usually much easier than copying industrial products or processes. Nevertheless, copying might not render the same results for one firm as it does for the original service provider. Many

firms offer a combination of different services, tailored to the needs of their customers. Copying one of these features would not render the same level of satisfaction for the customer, which gives a certain protection to the initial provider. Linked with the topic of property rights is the discussion on ownership. While goods actually change the owner in case of purchase, services usually only grant the right or access to a facility, without actually purchasing it (like the hotel room). (Den Hertog 2002: 492).

This leads to the next common feature: services are interactive and usually involve a comparably intensive contact between the service provider and the customer to agree upon design, delivery time and characteristics, individualization, etc. This goes along with the above mentioned fourth attribute: the coterminality of productions and consumption, meaning the inseparability of service provider and the service itself.

Finally, there are certain features concerning innovation practice in service enterprises. Service enterprises are very likely to focus their in-house innovations on the interaction with the customer and less on the in the preparatory work prior to actually delivering the service. These innovations, then, are usually influenced by cultural and social norms, and are difficult to transfer to other locations. On the other side, services often integrate electronic and technological innovations from manufacturing firms into their own work flow, as has been the case with personal computers in offices, or with microwave ovens in hotel and restaurant kitchens. Barras (1986) went so far as to qualify this characteristic as the main factor of innovation in services, sketching a Reverse Product Cycle where first the innovative factor is introduced (e.g. the PC), which first leads to improved efficiency, then to improved quality, and only in the last step toward new (innovative) services. While highlighting the impact of new technologies on enterprises, its effect is not exclusive to the service sector nor does the service sector only develop new services as a result of the introduction of (technological) product innovations.

Independent of where the innovation comes from in the service sector, these innovations entail changes in relationships between markets much more than in industries. (Miles 2006:451). They are usually instantly perceived by the customer, as this customer participates to some extent in the delivery of this service. Exhibit 04 summarizes the main differences between innovation in manufacturing and services based on eight different characteristics:

System Trait	Manufacturing	Services	Status/significance
IPR	Strong, patents	Weak; copyright	Current, strong
Technology orientation	Technology push; science- and technology-led	Technology pull; consumer-/client-led (co-terminality)	Historical, declining
Research/innovation generation and supply	In-house	Mainly sourced externally	Declining significance; manufacturing and services converging
Labour productivity	High impact	Low impact (until 1980s?)	Current, potentially declining significance
Innovation cycles	Short	Long (except for computer services)	Declining significance; medium
Product characteristics	Tangible, easy to store	Intangible, difficult to store	Declining significance; medium
International servicing	Exports, then FDI	FDI, then exports	Current, medium
Spatial scale of system or reach	National --> global	Regional --> national global	Declining significance; services catching up in internationalization

Exhibit 04: Innovation: manufacturing and services system traits. Howell 2001: 57.

Despite clear differences in the innovation practices in services and manufacturing firms, there have been attempts to consciously broaden classic innovation approaches to include services. Gallouj/Weinstein (1997) offers such an alternative, which allows classification of all kinds of innovation independent of the economic sector. Using characteristics of innovation instead of focusing on the physical product, they offer the following classification: Radical innovations refer to totally new service offerings which include that clients need to be taught how to use this new services, as there has not been something similar before. In contrast, the improvement innovation only alters certain characteristics without changing the service in its essence. Likewise, incremental innovations substitute or add new characteristics, but do not change the main offering. Ad-hoc innovations entail a solution directly tailored to a specific client's special need. Recombinative innovation results in new services although based on pre-existing knowledge, thus being less disruptive to clients than radical innovations. Finally, formalization innovation is comparable to organizational innovation, as it con-

tains the conscious definition of service characteristics by giving them a name and defining them (transferring tacit knowledge into codified knowledge).

The question remains how to structure the service sector itself in order to have more manageable units for analysis. The restaurant around the corner is likely to have different needs than the consulting company, although both offer services. However, an elevated level of complexity should not be an apology for neglecting such an important part of the economy. The characteristic of being "everything, but..." already indicates one possibility on how to proceed when analyzing this very heterogeneous sector: it is possible to further subdivide the sector to conduct meaningful research, not on everything at once, but on more condensed subsectors.

While the restaurant and the consulting firm both undisputedly belong to the service sector, they nevertheless differ in two fundamental aspects: the type of customer they are addressing, and the qualification (knowledge base) needed in order to successfully run their businesses. This observation has led to the two axis by which to roughly divide services into four groups (see exhibit 05). The x-axis represents the main client the service is performed for, either B2C for individual customers or B2B to other businesses (without differentiation in business sectors). The Y-axis represents the intensity of knowledge needed in order to successfully run the business, in this case represented through the percentage of highly-qualified personnel working in the enterprises, taking into account that services are not the low-skille d sector it used to be, but nowadays also contains very high-skilled jobs. (Pilat 2001:31).

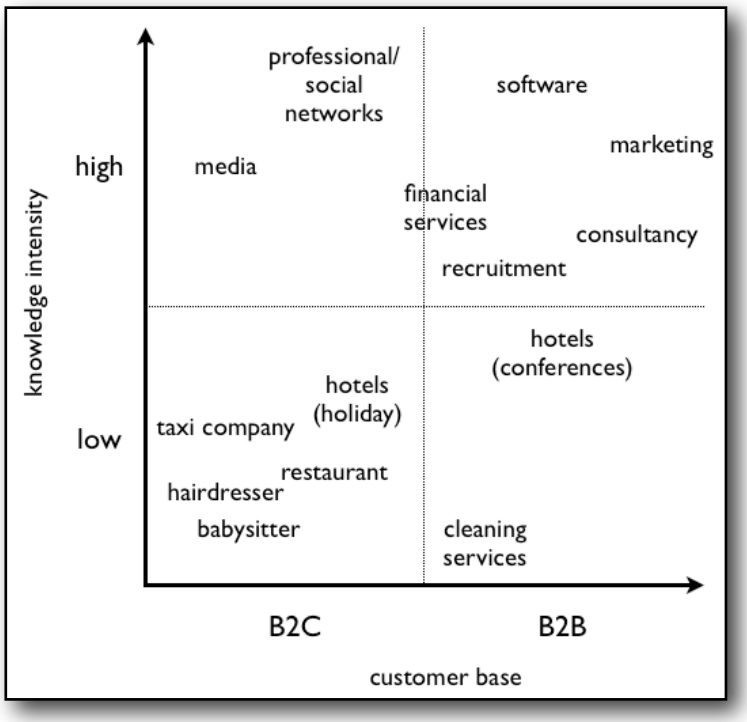

Exhibit 05: Classification of services based on knowledge intensity and customer base (Business / End customer), personal elaboration.

The four resulting groups can be labeled as basic customer services (low knowledge intensity, used by individuals), sophisticated customer services (high knowledge intensity, used by individuals), business services (high knowledge intensity, for businesses), and infrastructure services (low knowledge intensity, for businesses). This classification has the advantage that it does not divide services into presumably more or less important for the economy, but it is based on neutral indicators. The reason then, to focus on the third sector (high knowledge intensity, business customers) is based rather on personal interest. It would certainly be an interesting task to analyze the other three subsectors in the future in order to find similarities and differences in their use and evaluation of innovation as an competitive advantage in a globalized world. This could be interesting, as especially businesses with low knowledge intensity are important work places for labour with lower qualifications. Although several recent publications sponsored by the EU or OECD (see for example Arundel et al 2007, OECD 2001) predict that knowledge-intensive business services (KIBS) are most prone to create new jobs and showing important growth impulses, it should not be forgotten that the economy also depends on enough jobs for lower-qualified personnel in order to reduce the unemployment figures. Furthermore, there is evidence that these business services foster the innovativeness of their customers and serve as distributors of knowledge improving the competitiveness of the whole economy. (Pilat 2001: 35) Hence, the focus on knowledge-intensive business services is but the first step to understand underlying currents within the service sector and its policy implications.

Economic Dynamics in Business Services

The growth of knowledge-intensive business services (KIBS) is a relatively new development in Western economies, closely linked to the practice of big manufacturing companies to outsource activities that are not directly linked to their core business. Secondary activities such as marketing, personnel training, recruiting, and the design of tailored software have been outsourced, while the demand for consultancies and financial services to provide funding and strategical guidance for developments have increased.

However, while companies are also service users, they always have the option to either provide for the services themselves or to buy them from outside. For companies offering these services to other enterprises, there is thus a double competition both to-

wards other service enterprises, as well as toward the contracting client's internal services. Consequently, service companies need to be better than the in-house option, and different to their competitors. Better, in this case may mean cheaper, offering special knowledge, having a broader expertise, being part of a strong network or other attributes valuable to the customer. (Gazier / Thevenot 2000: 240f). However, once a service company has been contracted, a closer bond is likely to develop, as a service provider and service customer have a much more intense relationship than usually between providers of physical products and their clients. Due to the very nature of their services, business service companies need a lot of information from their customers in order to deliver the appropriate service. Simultaneously, they offer lots of information to their clients on their own strategies during the service provision. Hence, it is of interest for both partners to build long-term relationships for mutual benefits. (Gazier 2000).

Knowledge-intensive business service offerings are often intangible, marked by coterminality, usually individually tailored to the individual client, cannot be held in stock, and above all, use relatively little R&D. This represents a serious problem when assessing innovativeness of services, as well as when designing policies in order to foster service innovativeness. Patent applications are relatively unimportant in this sector (with exemption of software programming enterprises), which means that traditional sources of innovation assessment are not suitable when assessing the amount, intensity, and structure of innovation in this sector. As these traditional indicators do not reveal, other measures have to be found to assess the competitiveness and innovativeness of business services. In fact, innovative ideas are likely to spread more readily between different service firms, as services are much easier to copy than products, and they are much more difficult to protect. Strategic management is thus even more important for service companies than for manufacturing firms.

Another important factor in the service firm is knowledge, both in its codified and in its tacit form. Codified knowledge is, in theory, easy to replicate and does not depend as much on individual employees. However, the ready usability of codified knowledge in business services depends on the ready availability of highly-qualified personnel with the right qualifications, expertise and experience in relevant areas or even indus-

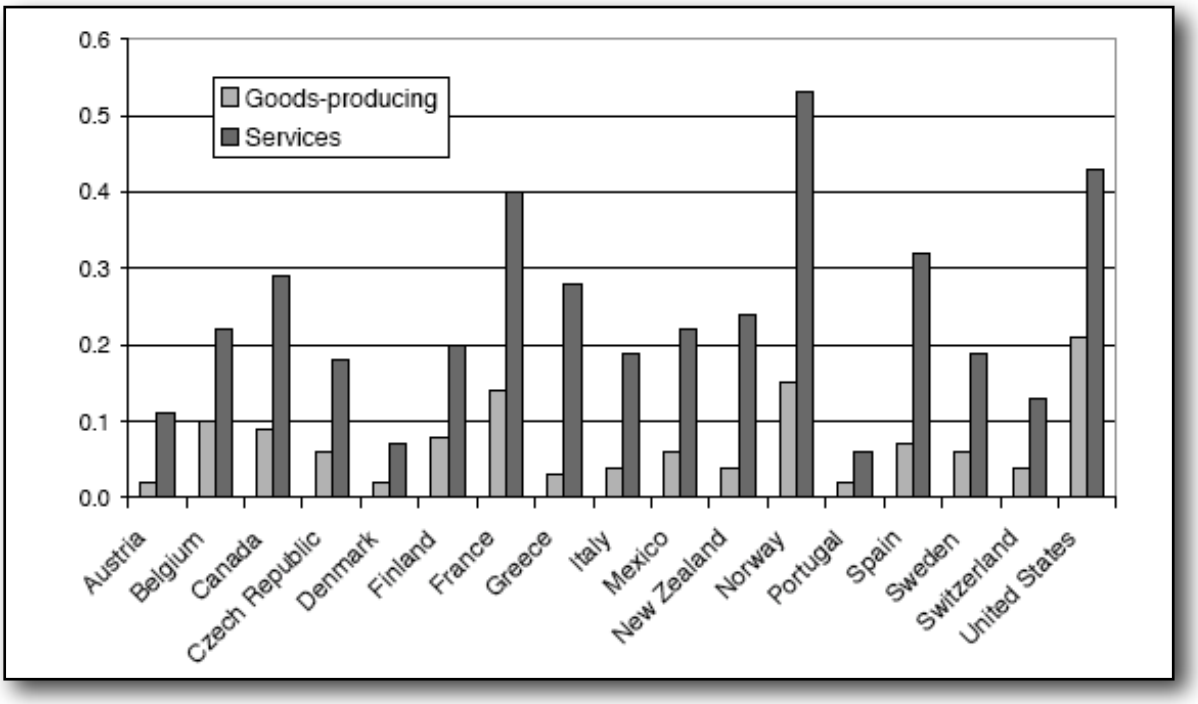

Exhibit 06: Ratio of workers with a university degree to workers without a university degree. By sector of economic activity. Pilat 2001: 38.

try sectors. Exhibit 06 shows the ratio of workers with high and low qualifications in goods-producing and service industries. Even though the graph contains *all* services, not only knowledge-intensive ones, the ratio is still higher in services than in producing industries. It is worth noting that a scarcity of potential employees with specialized knowledge usually affects service businesses first, as salaries in industries are usually higher. Codified knowledge then becomes as irreplaceable as tacit knowledge embodied in experienced employees. Consequently, business services have a special interest in recruiting and retaining a highly-qualified labour force. (Howell 2001: 71ff.).

Loyalty, trust, knowledge, an highly-qualified labour force; these are crucial ingredients for an innovative business service company. However, these characteristics do not help to answer the question how to measure innovativeness in such a vague surrounding. In order to get a clearer view, a model by den Hertog (2000) might be helpful (see exhibit 07). He conceptualizes innovation in services among four dimensions, which characterize different innovations in the sector. Most innovations are a mix between these dimensions, however, for analytical clarity, they may be defined individually.

Dimension 1 characterizes the service concept. Innovations in this dimension target the characteristics of the service offered. Dimension 2 is the client interface, being the

link between the customer and the service provider. This interaction is the focus of many service innovations (e.g. developing new channels of interaction with the client). Dimension 3 entails the delivery system and is intrinsically linked with Human Resource Management. Last but not least, dimension 4 entails the different technological options for the company. It is important to recognize that technology in this case is merely a facilitator, and not the main source of innovation. The graphic shows, how these four dimensions are linked with each others through marketing, organization development and distribution.

The Hertog graphic has one decisive advantage when compared with most bullet-point lists of service characteristics. First, it clearly shows how different innovation strategies can overlap and influence each other. On the other side, it is an easy way to find strengths and weaknesses in existing business services, thus getting interesting feedback on interesting areas for further development. It might be for this reason that the model can be found in very similar fashion even in practical handbooks for managers, such as the innovation guide "La gestió de la innovació en empreses de serveis" (2006: 4) offered by the Catalonian innovation agency to the interested public.

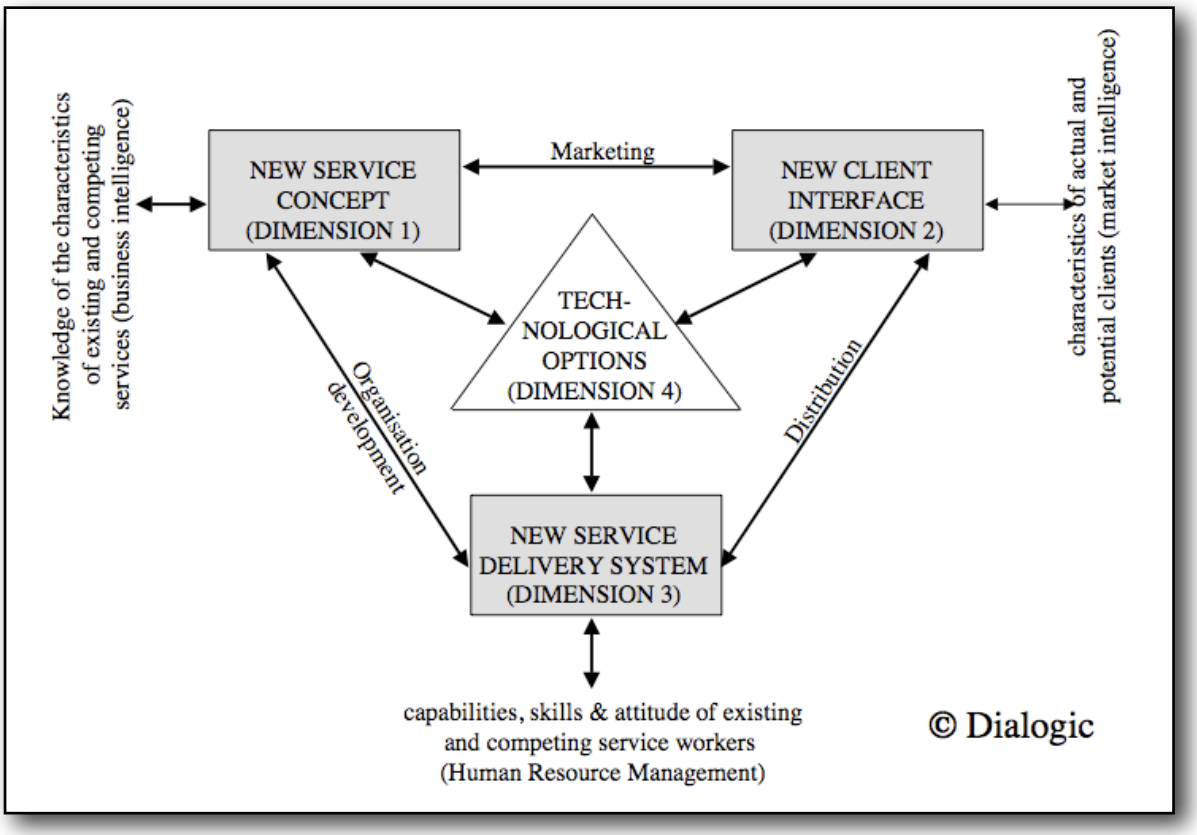

Exhibit 07: Innovation in Services. Hertog 2000: 495.

The weak point of the model is certainly the missing emphasis on Human Resource Management, which only appears as a sub-task of new service delivery systems. However, a high-skilled work force is very important for services. Hine (1999: 415) and Kandampully (2002: 22f) both confirm the dependency of especially small service firms on their employees' skills and creativity to be innovative. Education and human resources are consequently valued very highly by these firms. Furthermor,e small firms are most prone to be organized in networks. As innovation in services diffuses much quicker than in other industries (due to reasons discussed above), it is of strategic importance for small service firms to be informed about changes in their environment at a regular basis. In turn, it can also be profitable to help diffuse the firm's own innovation in order to work together in opening new markets and making clients accustomed to the new service. The own ("their own?" Or "the competitive..."?) competitive edge will be held by ongoing process innovation.

For service firms, the knowledge component is thus of crucial value. Natural resources have lost their importance in an economy ever more characterized by services, resulting in a shift toward mental resources. The new factors are thus: technology, knowledge, and networks, which all depend on human agency. (Kandampully 2002) For employees this has resulted in a rising importance of life-long learning, accompanied by a shift from labour as cost to labour as a value. Especially for knowledge-intensive services this has resulted in a wage increase, as highly-skilled labour is as scarce as oil.

However, all these changes are fairly new, as research on innovation in services is between 10 and 15 years old. Thus, theory and policy have not yet accompanied these changes to their last consequences. The following chapter will thus present the different policy approaches toward innovation and how the legal framework and these policies affect the competitiveness of knowledge-intensive business services.

The above discussion has been centered on different interpretations and classifications of innovation and how these classifications have repercussions in economic reality. Even though innovation may happen without previous incentives, only the knowledge of how to manage innovation ensures a continuous improvement in both processes and offers. However, the implementation of internal management strategies to foster innovative behavior of firms cannot be imposed from the outside. Nevertheless, there seems to be regional differences in innovativeness, alleging that the general framework

does have an influence on how firms react toward innovation. This framework and the possibilities to influence innovative capacity of firms through this framework will be discussed in the next chapter.

Legal Framework and Policies: A Roadmap for the Economy

The previous chapter has shown that innovation is an important, yet difficult to define ingredient for the competitiveness of all firms, no matter the size nor sector. Staying ahead of competitors, which nowadays may be all over the world, requires companies to constantly adapt both challenges and opportunities triggered by an accelerated rhythm of economic development. Although small and medium sized enterprises (SMEs) in the service sector are more likely to work for regional clients, they nevertheless need to adjust to market changes and incorporate new developments in order to stay competitive. Although their clients might prefer a geographically closer service provider, they will not settle for less than the best offer for themselves.

Just like any other company, SMEs in knowledge-intensive business services need to decide which strategy to pursue in order to optimize their service offerings. Some companies prefer to invest in cooperatives with universities in order to get access to important research results. Others focus on reducing project or delivery time, while yet others thrive for above-average customer support to ensure that customers come back for more projects. Whichever strategy a small company opts , its success is not only dependent on its customers. The (stable) legal framework and the (adjustable) policy options pursued by policy makers in its country and/or region are just as important (Gustafsson / Johnson 2003: 118f).

The legal framework, as the words indicate, refers to the laws that organize the economy within a territory (usually a nation state) and help to make the consequences for certain behavior predictable. With the prevalence of democratic regimes all over Europe, enterprises working within the European Union can count on more or less stable pre-conditions ensuring certain rights and responsibilities when doing business. The most important organization to watch over this framework is the judical system. As long as this system works properly and enterprises are sure to get their right in case somebody infringes the law against them (e.g. not fulfilling a contract, fail to observe patent rights), the framework can be considered sufficiently stable and open to steering through different support policies. The government thus may choose to influence the economic system in some details, however without substantially interfering with the general framework. (Lundvall 1999: 62; Bruland / Mowery 2005: 361).

The legal framework is bound to change very slowly, as it rooted in the corresponding history. Usually only revolutions substantially alter legal frameworks of nation states, although historians and sociologist point out that even revolutions usually argue with the restoration of an older order (see for example Brunkhorst 2007, Bermann 1985 and 2003). Policies, however, have a rather short-term horizon, as they are enacted by governments, and consequently may change when a new government is formed by a different political majority. Due to the democratic nature of European Union member states, government policies naturally have a time horizon of 4-7 years or even less in the case of election campaigns on certain policy issues that often start sooner. Consequently, policies are not logical, matter-of-fact decisions based on hard facts. They always include a normative narrative to justify decisions for or against certain policy instruments. Consequently, policies may differ substantially in time and space.

Traditionally, politics in the Western world is expected to focus on redistributing wealth within societies, mainly through taxes, while abstaining from other interferences in the corporate reality. However, with growing pressure on the welfare state through competition between economies, policy makers have moved towards a more proactive attitude, trying to actively encourage economic activity within their boundaries. Starting with reducing taxes on local enterprises, soon the perspective was broadened toward supporting innovative companies and promoting nations and/or regions as especially suitable for successful firms. As most European countries cannot compete on the grounds of low labour costs, other advantages are highlighted, such as an highly educated labour supply, successful research centers, a good infrastructure or a very active chamber of commerce offering special services for companies. This is then called innovation policy.

However, the term innovation policy does not describe a concise program for action. It is merely the conscious tentative of experts and/or politicians to support the innovative capacity of the system through different measures. If this attempt is successful or not, not only depends on the policies themselves, but also on the reaction of those affected by the different proposals. To put it simply: innovation policy is a government‘s way to pursue the competitiveness within its corresponding territory. Thus, it is not a new phenomenon, but in different degrees it has existed since there were ministries of industry. However, as focuses shift and economic affairs become more net-

worked, policies striving to support the economy also develop. What today is called innovation policies by the OECD, is an advancement of what has been known as Science Policy and Technology Policy during the Cold War. (Lundvall/Borràs 2005).

The difference between these terminologies is mainly the scope of action. Science policy focuses primarily on the production of scientific knowledge as basic research. The main instrument was massive funding for private and public universities and research centers, especially those targeting physics, biology and chemistry. The idea is to foster basic research which the may be the starting point for new products, new ideas and new enterprises. The focus here is more on universities and research centers than on enterprises. Especially SMEs that are not able to invest into their own research might fall short of any attention. As a matter of fact, business services are only interesting insofar as they might offer support for scientific research.

Technology policy combines this science-based approach with fiction and supports certain technologies or sectors, usually with a clear purpose (e.g. space technology, information technology, genetic engineering). While science policy intends to stimulate radical innovations through supporting new technologies and products, technology policies additionally focus on incremental innovations. Common instruments are public procurements in combination with tax reductions and subsidies tied to those sectors that are seen as strategically most important. The main problem associated with this approach is that it neglects those sectors that are technically not as attractive, which is the case for many business services, independent of their size. The critique that there have been no policies addressing the needs of the service sector in general, and small business services in particular, is thus justified. After all, most countries have a ministry of industry, while a ministry of service is hardly found (Lundvall / Borràs 2005: 621).

In this light, the implementation of innovation policies is a step forward, as modern innovation policy is not a single ministry issue any more. Exhibit 08 shows the main instruments of all three policy approaches, and how the attempt to channel innovation has been broadened from a narrow focus on science alone, toward an approach that tries to integrate the different needs and opportunities of all different kinds of economic actors, ideally without resorting to the practice of picking winners. Different ministries now need to coordinate their strategies, deciding either for a *laisser-*

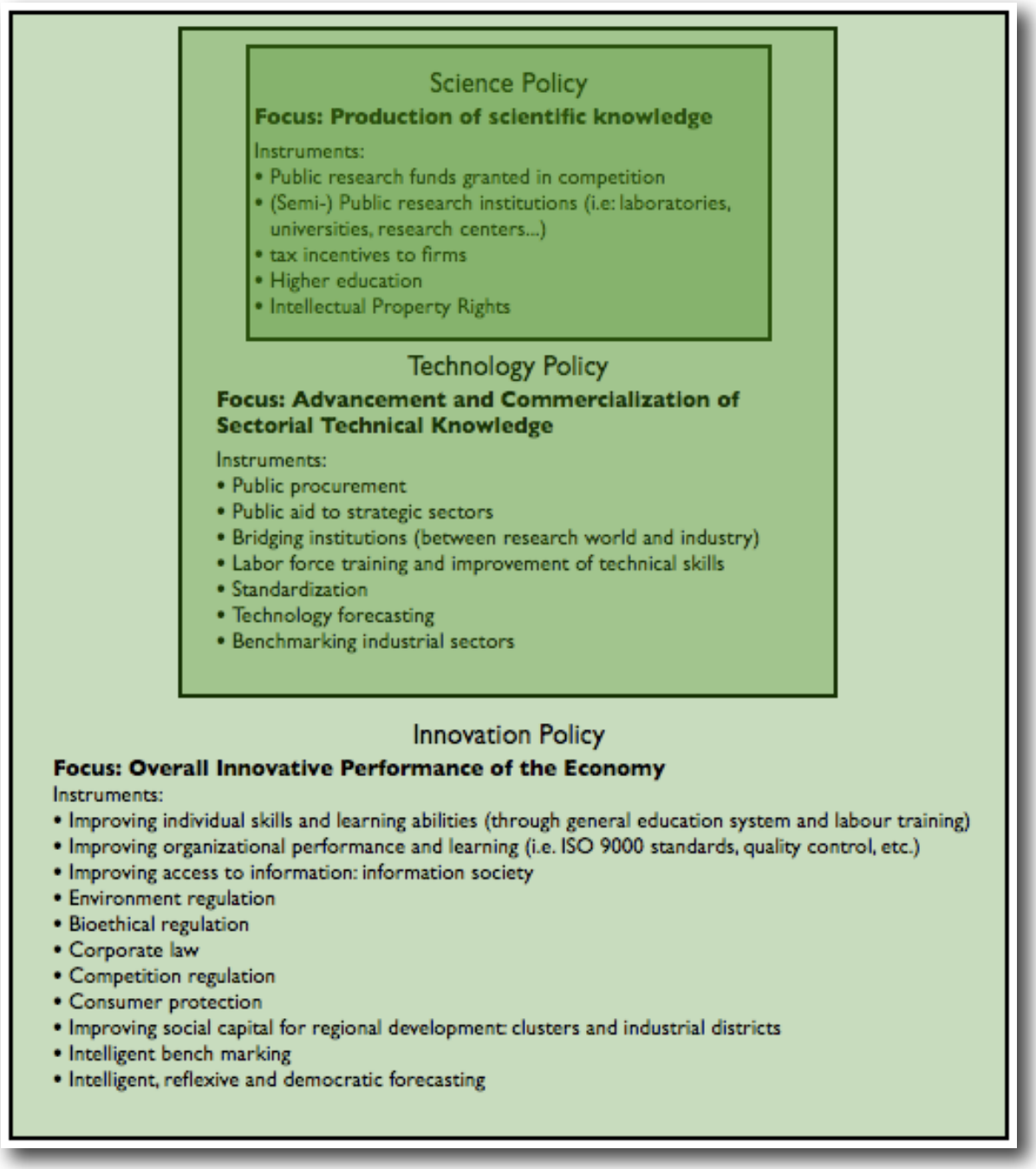

Exhibit 08: Relationship between Science, Technology and Innovation Policy (Lundvall / Borràs 2005: 615).

faire approach or toward a systemic view of innovation policy. The former approach favors a non-interventionist behavior, only optimizing the general framework, while the latter seeks to improve the performance of the whole system. The innovation system is reviewed and benchmarked against other systems in order to improve its performance. Links between organizations and institutions are redesigned in cases where innovation does not diffuse rapidly enough. Usually this implies extensive programs for companies, as they are perceived as the core unit of any innovation system. The inno-

vation policy's aim is then to foster a healthy balance between competition and cooperation between these firms.

Conceptual Backbone: The Innovation System Approach

Innovation policy is a concept based in daily routine and has developed in the making. With a certain time lag, scholars have started to theorize about this development. Consequently, both concepts are interrelated, however, they outline different aspects of a political and economic phenomenon: while innovation *policy* is about *influencing*, the innovation *system* approach tries to *analyze and explain* the innovation process as a systemic one in order to give information on *where* best to influence. The idea behind the innovation system approach and the related innovation policies is the belief that a "*supportive environment for innovative companies can deliberately be created*" (Cooke 2003: 2) or, to choose a less enthusiastic description, the supportive environment can help to further develop an already existing but underperforming innovation system (Lundvall 2007: 112).

Roughly sketched, an innovation system is about enhancing the innovativeness of different actors within a designated (geographical or sectoral) area. The concept itself was first developed and published by Christopher Freeman in 1987 when he presented a thorough analysis of the national innovation system of Japan. Approximately at the same time, Lundvall worked on the same topic. Both scholars focused their analysis on the National level, as did many scholars afterward. The first theorization was thus almost exclusively done for national innovation systems, and with good reason. (Lundvall 2007:96ff). The advantages are quite obvious: a nation-state has a clearly defined geographical territory which corresponds with the area of legal jurisdiction and a certain political system, both important components of the systemic approach. Furthermore, the coherence within a nation is very high, especially in small countries like Denmark or Japan. However, for bigger countries, and especially for federal states, it proved difficult to implement nation-wide policies to enhance competitiveness.

Federal states in particular already have a tradition of delegating certain policy areas from the national to the regional level. Although not officially so, soon many provinces e.g. in Germany or Great Britain developed their own innovation policies, geared towards special regional necessities. Through comparing these initiatives, Cooke (2004)

introduces the notion of a regional innovation system, arguing that the basic principle of a systemic interpretation of the innovation process can be transferred to any other geographical entity, as long as there is a certain cohesion present to justify the treatment as one territory. At best, this territory should also include a government aspect as part of the differentiation of neighboring regions, although Cooke recognizes that this government aspect can be of a grassroots character. From the 1990s on, more and more case studies were also done at the regional or even local level. The extent of the territory included in the analysis can be considered an individual decision of the scientist, depending on the research question. The systemic character of the innovation process remains the same.

Before entering into detail on the inner logic of an innovation system, an analytical description of the individual terms is necessary to clarify the vocabulary used in this paper. While the territorial part of the innovation system is to a varying extent subject to the researcher‘s liking, the term “system“ has a strict scientific meaning. Edquist (2005) gives a detailed overview of the systemic characteristic of innovation systems. Scientifically, a system has to fulfill three requirements in order to be considered as such:

1. The system is defined through its components and the relationship between these components. The components and their relations form a coherent whole.

2. The system has a reason for existing: it is either achieving or performing something.

3. The system can be distinguished from that which is not part of the system or lies outside its boundaries.

The main components of an innovation system are organizations and institutions. It is crucial to clearly differentiate between these two concepts, as in day-to-day language they are often used as synonyms. In the scientific context, however, organizations are the players or actors within the innovation system. They are consciously created for a certain purpose and consequently have a legal identity as organizations. Examples are the chambers of commerce, enterprises, the ministry of science and technology, a university, etc. Institutions on the other hand, are a little more difficult to depict, as they represent the way things are done. Institutions are not physically present, but rule the

relationship and ways of contact between organizations. This includes, but is not limited to, common habits, norms, routines, practices, as well as laws influencing and regulating the interaction between the players of the system. The function of the system thus depends both on the actors and how they cooperate (or not) with each other.

Functions and activities are somewhat easier to differentiate. The primordial function of an innovation system, as the word suggests, is innovation. As such, it should foster the development, diffusion and use of innovative ideas resulting in new products, services, processes and other changes that can be described with the term innovation. Functions are a system's reason for being for . The activities, on the other hand, comprise all factors influencing this purpose, consciously or not, such as R&D, networking, competence building, formation of new markets, implementation of quality demands, creating and reforming organizations needed, creating/reforming institutions to correspond to new situations, incubating activities, financing, consulting services, etc. (Edquist 2005: 191). It should be noted, that this is not a closed todolist for innovation systems. To the contrary, each innovation system has to find its own activities necessary for successful functioning. By comparing different innovation systems, best practices can certainly be found, and some basic characteristics can be isolated, however, each system is unique in its way to organize the activities within its borders. Consequently, the process of innovation in its systemic characteristics is difficult to categorize and to influence. Systems evolve over time. Consequently, they are not consciously designed, but they emerge out of a complicated interplay between organizations and institutions.

It is important to keep in mind that innovation policy is but one institution within the innovation system. It cannot be held accountable for the functioning of the totality of the system, however, it might influence in favor of a highly competitive system. Innovation policy is also not necessary for an innovation system to exist. It is merely the conscious tentative of experts and/or politicians to support the innovative capacity of the system. If this attempt is successful or not not only depends on the policy itself, but also on the reaction of the system. Consequently, there is no onesizefitsall receipe, but each system needs its own tailored policy approach. (Cooke et al 1997, Edquist 2005).

For this aim, the European Union is very active in comparing different innovation systems in order to give regional and national policy makers more informed policy options.. The innovation systems are reviewed and benchmarked against each other in order to improve performances. Linkages between organizations and institutions are re-designed in cases where innovation does not diffuse rapidly enough. Usually this implies extensive programs for companies, as they are perceived as the core unit of any innovation system. The innovation policy's aim is then to foster a healthy balance between competition and cooperation between firms.

Classifications for Innovation Systems

Most policies in Europe aiming at creating innovativeness and economic growth up to the 1990s were regulated by the nation-state, organizing the allocation of resource to poorer regions in order to attract investors. Only some federal states had experience with relatively autonomous sub-national policies. However, , with the growing exposure to globalized markets, the state lost its ability to successfully coax firms into specific regions, as the location factor became an important asset. (Keating 2001: 217). However, the driving force to transfer 'innovation policy' to the regional level was the EU, setting regional targets for development. The Structural Funds Policies often target the NUTS II level, splitting larger member states into their provinces, regions or *Länder.*

The policy shift towards a smaller geographical area was an effect of the discourse on the knowledge economy. With the development of ever more possibilities to share and access knowledge that is facilitated through the internet, knowledge and its use was profoundly changed. When codified knowledge is available from any spot in the world, then tacit knowledge, based on learning and practice, becomes more important. Suddenly, regions were seen as a potential means to foster interactive learning and support local advantages through their institutions. (Asheim/Gertler 2005).

As Cooke (2004: 3) points out, in Europe the practice of Regional Innovation Systems (RIS) preceded a thorough theorization. It was seen as a solution to three problems: 1) scientific knowledge often remained within academia instead of being exploited commercially, 2) Europe had to cope with innovations that put its already mature manufacturing sectors under stress , and 3) in benchmarking Europe with the US, a severe lack of advanced business services handling the knowledge exploitation had been discov-

ered. Backed by the European Social and Cohesion Policies, soon the first RIS were implemented in Europe, however with very different structures and outcomes.

It is important to recognize the interaction between the innovation policy as a government strategy, and its recipients, namely research centers and enterprises. The innovation system is influenced by both factors, however, it does not depend on their interaction, and their impact on different innovation systems might be quite different. Cooke (2004) thus divides innovation systems depending on whether innovation is primarily driven by the market or by the government and related agents. Although his systematization is coined on the producing industries, it might be equally relevant for the knowledge intensive business sector, however, with different implications.

Cooke (2004) proposes to classify regional innovation systems (RIS) either as entrepreneurial or institutional-dominated systems. The institutional regional innovation system (IRIS) is characterized by the positive effects of systemic relationships between the production structure and the knowledge infrastructure embedded in networking governance structures regionally and supporting regulatory and institutional frameworks on the national level. On the other hand, the entrepreneurial innovation system (ERIS) draws on the dynamism of local venture capital, entrepreneurs, scientists, market demand and incubators to support innovation that draws primarily from an analytical knowledge base. The classification is clearly based on an industrial view of innovation, differentiating whether the main impact comes from above or below. It can be suggested that RIS with successful business services are more likely to be organized as an entrepreneurial RIS, as the peculiarities of this sector are of less importance in this case when competing for input and funding.

Furthermore, for the service sector, a big part of the innovation system is not as relevant as for the industrial sector: as discussed above, research and development is much less a source of innovation in services than it is in the manufacturing industries. Consequently, the link between service firms and research centers is likely to be weak, at least when it comes to interest for research results. On the other side, innovative firms might be interested in recruiting successful students form universities to incorporate them into their workforce.

Analyzing the main sources of innovation and competitiveness of knowledge-intensive business services also suggests that the general support system formed by laws and culture are of considerable importance to these service firms. As they are highly dependent on a highly educated work-force, education, immigration laws, labour mobility and training facilities become major factors to stay competitive. On the other side, the cultural factor of trust and loyalty within markets should also not be underestimated. Service products are difficult to measure, increasing the level of uncertainty for clients and services alike when evaluating offers. Consequently, a regional identity and a high amount of trust between strangers should be a positive trait for these kind of innovation systems. Asheim/Gertler recognize the importance of regional peculiarity in their classification of RIS into three variations, depending on how innovation is fostered within a region (2005: 301). The strong point of this classification, vis-a-vis the Cooke proposal, is its focus on the *source of support* for the innovators, instead of focusing on the presumed innovators (and thus on a certain industry) alone. The three ideal types are:

1. territorially embedded RIS: the innovation process is based in local firms (often SMEs). Localized learning processes depend crucially on social, geographical and cultural proximity. There is little interaction with knowledge organizations.

2. regionally networked RIS: intentional policy interventions by the regional government seek to strengthen the institutional infrastructure.

3. regionalized NIS: the RIS is functionally integrated with the national level and there is little interaction with the region itself (e.g. Science Parks).

The classification focusses primarily on the governance level of the RIS, arguing that the environment significantly shapes the region and the way it functions. Although firms may also try to influence this environment, above all they act within this framework.

Small Business Services and the Innovation System Approach

The innovation system approach, whether coined on a nation-state, a region, a county, or even a cluster or special economical sector, claims to be an inclusive and all-embracing approach towards explaining the dynamics between government and market concerning the innovativeness of the economy. However, the model has been set

up with industrial firms in mind, considering business services only in the case of offering research services. A quick assessment of the interaction between SMEs and the innovation system is needed. Preparing the case study to be presented in chapter 4, this assessment will already focus on small firms within the business service sector.

Innovativeness and competitiveness are foremost a result of a firm's strategies with regard to personnel, internal organization, customer acquisition and even equipment of the working space. However, both innovativeness and competitiveness are more often than not also the result of interactions with other firms, competitors, customers, and providers. Also, these interactions might lead toward learning processes that could not have been achieved by the firm alone and in isolation. In their case study on SMEs in two German regions, Maier / Obermaier (2001) however, come to the conclusion that the regions as such only made a difference to big companies that took advantage of cooperation with universities and research centers. SMEs, on the contrary, were reluctant to share their knowledge with others and did not show much participation in official network proposals and cooperation projects with researchers.

Even without the participation in network organizations and little conscious recognition of regional advantages, location is of crucial importance especially for small enterprises. Once installed in a certain region, they are unlikely to move for a variety of reasons, summarized in the concept of embeddedness. Although it could be suggested that for service firms it is easier to move, as they do not possess large production lines and local physical investments, they are dependent on other assets which bind them just as effectively to their location (often on a regional rather than a national level).

The first reason to stay at least in the same country is language and culture. Many knowledge- intensive business services are dependent on language and communication in order to use their knowledge for their clients. Personnel might be trained in the local language, and not show the same confidence when explaining their projects in another language. These employees might also be reluctant to move to another country, implying that a move would cost recruitment and training of new personnel at the new location. Valuable tacit knowledge would be lost on the way (Howells, 2001: 68f).

Furthermore, the differences in laws and culture between different countries effectively prevent knowledge-intensive business services from relocating to another coun-

try. Knowledge of laws and practices, more important for the ever-changing project-based work of business services than for manufacturing industries, is a crucial ingredient both for the acquisition of new clients, as well as when working repeatedly with the same company. For example, recruitment consultants are dependent on knowing national employment laws in order to be successful in organizing human resources for their clients. Consultancies need to understand their clients' culture in order to find suitable solutions. Marketing firms are more successful when taking into consideration the culture of the targeted market. Although today's communication possibilities superficially help to detach the location of working from the location of delivering the product, for services the simultaneity of production and delivery highlights the importance of physical proximity.

Business services might thus take most advantage of territorially embedded RIS or regionally networked RIS, as these two approaches are based on a genuine recognition of the region's advantages. Within regionalized NIS, small enterprises (of all sectors) will probably not be obstructed, but rather fly below the radar of innovation policies, at least those that are not based in the national capital or economic heartland.

While science and technology policy (were? are?) very much a national issue, with only minimal participation of regional entities, innovation policy in the European Union has developed in a truly multi-level governance field. While the primary enactors of innovation policies are still the nation-states and their regional subdivisions, the European Union has integrated the concept into its own agenda as well. With the Euro-Innova network and the 7th Framework Program, the European Commission has integrated an European approach to innovation into the center of many of its initiatives. While the topic of supporting competitiveness of the European market area is not totally new, the broad approach, no longer limited to R&D policy clearly mirrors the innovation system approach as being adaptable to virtually all government levels.

European Initiatives on Innovation

When working with enterprises, the EU faces special circumstances, which are kind of alien to its usual day-to-day work. While member states are relatively easily coaxed into implementing EU policy on the national level, enterprises are a much more difficult target to work with. Institutional and legal questions might be solved on the EU basis, but innovation and competitiveness is a little bit more complex. It is impossible

to get innovation by decree, especially as the most important player is very likely to be the individual enterprise.

Fortunately, enterprises are usually interested in staying competitive. Although they might be reluctant to adopt certain kinds of changes, they are constantly thriving for profit and economic success. Knowing this, the European Union has focused less on the enterprises themselves, but has tried to offer a surrounding that fosters this inherent thrive for excellence among enterprises.

The approach of the European Union, and among its institutions most notably the Commission, can be depicted as a pyramid consisting of three different areas that built upon each other: data collection and analysis, lobbying and policy proposals, and support of direct measures (see exhibit 09).

Data collection and analysis. The backbone of all possible policy interventions and actions should be knowledge, especially when these actions will affect a variety of very diverse countries. For this purpose the EU conducts regular survey in all its Member States, including the annual Innovation Scoreboard, the Trend Chart on Innovation in Europe. Furthermore, it encourages the Member States to adhere to common standards in their own surveys in order to ensure maximum comparability between the data sets. Much of this data is available for researchers and EU staff via EuroStat to ensure that data is not only collected, but also analyzed and qualified. Both research institutes, like universities and think tanks, as well as working groups of the different DGs use this data to develop models and explanations for how innovation works in different sectors and regions. The OSLO Manual and the Fratini Manual covering R&D measures and innovations measures respectively, are a good example for this approach, as they insure a major compatibility of data between the different Member States.

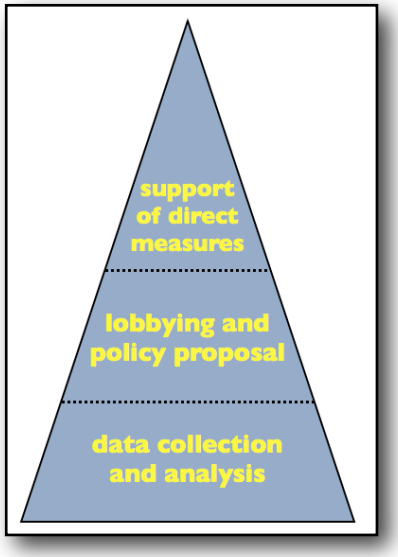

Exhibit 09: Pyramid of EU approach to innovation policy (personal elaboration).

Lobbying and policy proposal.[1] On the basis of concrete data, EU staff is able to build up strategical considerations and recommendations for the Commission and the Member States alike. The aim is to constantly bring it to the attention of decision-makers in politics and economics alike to stress the importance of innovation. The strategic goal is about putting innovation on the forefront of the agenda not only as an abstract vision, but as a down-to-earth policy approach for Member States and regions alike.

PRO INNO Europe aims at pooling the analysis of innovation policies in order to speed up learning processes through best practices. Furthermore it provides assistance for cooperations among regions and innovation agencies.

The Network of Innovating Regions in Europe (IRE) is an exclusive platform for the development of 'Regional Innovation Strategies'. Its main task is to develop methodologies for the benchmarking of strategies to ensure a higher scientific standard.

Europe INNOVA focusses on sectorial innovation and clusters. It aims at bringing together innovation professionals to discus and exchange good practices, ideas, tools and policy recommendations for industrial sectors. The initiative fosters public-private partnerships and aims at improving the governance concerning cluster management, financing, and European standards. Its scope is meant to be transnational cooperation.

Support of direct measures. The EU has different programmes that invite enterprises to voice their opinion about what kind of help would be most useful to them. These programmes are often delivered in partnership with member states and may include financial measures, such as loans, grants, or guarantees for credits. Another form of support is the provision of contact networks for enterprises, training courses, and a variety of counseling and information services both online and through local centers.

The restructuring of the European approach to innovation includes a bundling of knowledge about all programs into one network. The Enterprise Europe Network (EEN) will be launched in February 2008, intending to "help SMEs to develop their innovative potential and to raise

[1] All official logos are from the corresponding project websites websites.

their awareness on Commision policies". SMEs then will only need to seek one European body in order to find all the information needed for EU funding and other support schemes. All over Europe there are 43 regional Innovation Relay Centers (IRC) in 33 countries to provide special services for innovation in companies, research institutes and technology centers. In the future they will be incorporated into the EEN.

In order to mainstream innovation initiatives within the EU, several programmes and strategy papers have been issued both by the Commission as well as by the Council. The backbone of most current innovation strategies is the Lisbon European Council from March 2000, where Member States decided to turn Europe into the "most competitive and dynamic knowledge-based economy in the world by the year 2010" (CORDIS website). The resulting Lisbon process has done a lot to strengthen the tip of the support pyramid. It bundles several initiatives together, including access to different sources of innovative technologies, information on new and emerging technologies, connecting interested entrepreneurs for networking, linking together incubators, and support programmes for SMEs.

During a follow-up evaluation of the different activities and support measures, the European Commission decided to offer a legal basis for all Community actions that aim at fostering innovation and competitiveness. The resulting Competitiveness and Innovation Framework Programme (CIP) especially targets SMEs, institutionalizing the compromise the EU feels for its smallest institutional unit in economics. For the first time, the division between policy proposal and enterprises support was successfully bridged, as both governments and enterprises are invited to participate in the diffusion of best practices and information within and among different regions. The encouragement of SMEs to participate in research and development further tries to integrate enterprises at all levels of European innovative activities. Consequently, the 7th Framework Programme (7FP) running from 2007 to 2013 is now divided into thematic operational programmes instead of focusing on different actors: the Entrepreneurship and Innovation Programme (EIP), the Information Communication Technologies Policy Support Programme (ICT PSP), and the Intelligent Energy Europe Programme (EEI). (CIP-homepage).

While the above-mentioned Programmes are considered to be sector neutral, as services using traditional R&D are also invited to participate, the European Commission

has pushed for an amended Service Directive to broaden the European Single Market for service providers. Due to the restrictions arising from different legislations in the member states, services are only responsible for 20% of intra-EU trade between 1997 and 2002. By harmonizing this market, an expected increase of 0.6% of GDP and 0.3% in the employment level can be expected, substantially adding to the European economy. In this context, the legislation in the different countries should be reviewed to remove superfluous barriers and regulations. Consequently, the Service Directive calls upon member states to thrive for mutual standards, in order to allow for higher mobility of labour, knowledge and access to venture capital. (European Commission 2007: 17 ff, for a complete overview of job creation potential see Anxo and Storrie 2000).

Enacting the Framework: An interplay of Member States, Regions and Working Groups

The above mentioned examples have one point in common: the EU understands itself as a facilitator of information and choices, rather than as a government agency implementing detailed policies on a European-wide level. Rather, the different European agents may act as consultants for the member states through its data-base, research results and policy proposals. Consequently many of the genuine European innovation programmes target either the general framework (such as laws and regulations) or institutional actors within this framework. The biggest disadvantage of such programmes however, is the voluntary nature of the participants. Only enterprises that are actively searching to enhance their innovativeness are likely to look for such support centers, while those enterprises that have never worked with the topic may not recognize the benefits such institutions yield for them. This self-selection may be a problem, especially as enterprises that have not been working on the topic of innovation might have a higher need for direct support.

This direct support, however, is re-directed to the national level, where it can be either organized by national ministries and working groups, or directed further to the regional level. The latter is especially popular in federal states, where the government structure allows an easy implementation of regionalized policies. We will here focus especially on policies that are deemed especially suitable for supporting innovation in

services (for an in-depth analysis of the following policy options, see e.g. European Commission 2007).

The main resource of services is personnel and knowledge, both usually intimately linked together. Lack of an high-skilled work force is one of the most significant barriers to innovation in services, as this sector is especially dependent on skilled labour. The necessary skills need to be partly integrated into university and training curricula, but can also be facilitated through on-the-job training facilities, and/or tax facilitations for these fields.

A second policy option is the provision and facilitation of financing schemes for services, as venture capital is usually not available for new service firms. This topic also includes support for intellectual property valuations and business plan support.

The public sector is not only a facilitator of economic activity, but also one of its main customers, including for the service sector. A demanding market expecting improvements and innovations instead of insisting on the same old services is vital for the innovativeness of service providers. Considering that public entities are part of this customer market, it becomes evident that public procurement can be a powerful tool in supporting innovative new services. This policy area also includes setting high standards for service procurement to stimulate innovative services and enhance market transparency to allow customers a more informed decision when deciding between different service providers.

The above-mentioned policy tools, however, are not available for all policy levels. This is the main reason for advocating instead a national system of innovation. However, national policies are unlikely to affect all regions in the same manner, at least in geographically extensive countries. Also, not all regions thriving for a successful innovation system are administrative units within their nation-state, and even those that can count on a regional government usually do not have the same instruments at their disposal. Both budget constraints and conflicting priorities from the national and the regional government may hinder a concerted action within the region. As the national government usually has broader objectives than regional governments, it might be difficult to get support from the national level. The scarce experiences with regional innovation policies add another challenge when policy makers want to decide on suit-

able policy tools. As regional innovation policies are a fairly recent development, the amount of case-studies and best-practices is yet to be improved. (Cooke 2003: 8f).

There is yet another aspect to the discussion on scale for innovation systems. If a national innovation system can be analyzed in connection with regional innovation systems, an even smaller scale might be useful as well. In their case study on regions in Canada, Holbrook/Salazar (2003) state that even regional innovation policies rarely have the same effect on the whole of the declared regions. Usually their effect is more or less restricted to the bigger urban agglomerations, without spreading to remoter rural areas of the administrative unit. For the region of Catalonia, discussed in the next chapter, this could be a valid argument as well, as economic life is heavily concentrated in Barcelona and its industrial belt. Both the presentation of the region and the interviews in chapter 4 will shed light on this topic.

There is a variety of policy options available to politicians wanting to foster innovation in their area, either through targeted incentive schemes supporting selected industries or special types of enterprises (based on location, size, background of founder etc.) . As discussed above, policy makers do have an interest in supporting innovative capacity, as it is a crucial ingredient in sustaining economic growth. However, empirical evidence seems to indicate that not all policies are equally qualified to help different types of enterprises. Sternberg/Arndt 2001 have analyzed the innovative behavior of SMEs in different regions and come to the conclusion that the region does not play such an important role after all, at least at the level of regional initiatives. Implicitly however, the region can facilitate innovativeness as long as it concentrates more on the actors than on the desired macro-economic outcome. Firms are indeed interested in taking advantage of their location (that is the reason for their being there), however, they do not work for the welfare of the region, but for the welfare of their own economic activities. The positive development of growth and competitiveness of the region is for most firms rather a secondary (though not unwelcome) outcome.

In any case, policy makers have to keep in mind that policies might have different impacts on service economies than on economies with predominantly industrial firms. Macroeconomic and structural policies thus also need to be readjusted to take into account the new preponderance of services in European policies. Changes in output and/

or prices are difficult to assess in the case of services which has an impact on the design of monetary and fiscal policies (Pilat 2001: 41f).

After this overview of the effect of policies on the competitiveness of business services, the next chapter will present the region of interest for this paper: the *comunidad autonoma* de Catalonia. Combining the theoretical considerations with a practical example of a region will prepare the background for the case study in chapter 4.

The Role of Location and Culture: Catalonia

We now have a clear understanding of what innovation is and how the legal framework and the different options of innovation policies might influence the innovativeness and thus the international competitiveness of a geographical area. Furthermore, the role of innovation support for SMEs in general and knowledge intensive business services in particular have received special attention. Remembering the metaphor of the wooden stool of competitiveness, two of its legs have now been filled with meaning. The following chapter will thus focus on the third leg, representing the role of culture and location when dealing with competitiveness and innovation. Following this chapter, the case study will then be introduced to validate the hypothesis using a practical example.

In this paper the region is the *comunidad autónoma* of Catalonia. This is, coincidentally, also an administrative region of the Spanish state. This is, however, not a constituent factor of all regions. While administrative regions offer easier access to data and statistics, the most important characteristics are a determinate size, a certain homogeneity in terms of the criteria to be analyzed, an internal cohesion (or self-understanding as region) and clear borders differentiating it from other regions (see for example Holbrook / Salazar 2000; Cooke 2003: 5). For innovation policies, regions are indeed usually administrative units, as it is the regional government that puts these policies into place. However, we need to bear in mind that innovation in itself is a ubiquitous phenomenon which may happen anywhere and at any time, even without policies. In order to be innovative, a region does not need to be defined in administrative terms, although this might be helpful when a politically driven support system is the aim.

Nevertheless, the analysis of one particular region may shed some light on strengths and weaknesses of the general framework when adapting it to this region. As regions are unique entities differing in economic structure, political conditions, and sociocultural background, the use of the innovation system approach might need adaptation in each individual case. In any case, the approach is a valid tool to systemize and understand developments and tendencies, without falling into the trap of offering a one size fits all solution for all regions. Each region aspiring to use this approach to enhance its competitiveness needs to find its own strategy. Classifications can help to indicate where best to start looking for solutions. However, even though regions might

be tempted to copy successful practices from other regions, these strategies need always be fine-tuned to complete the already existing systemic characteristics. It is an important task for policy makers and their scientific advisors to analyze the region they are working in/for, taking into account both regional assets and opportunities, as well as recognizing weaknesses and limitations.

Keeping these considerations in mind, the present chapter seeks to give background information on the region in focus: the *comunidad autónoma* of Catalonia, with a special emphasis on the economic center, the metropolitan area of Barcelona. Starting with a general introduction to Catalonia's economy and its position within the Spanish nation state, the next step will be the analysis of the Catalan innovation system. As in the previous chapter, the role of small knowledge intensive business services will again be the focus of analysis. The third part of the chapter is dedicated to understanding the regional identity and cultural implications, taking a closer look at the region's language policy and its repercussions on economic activities. Officially recognized as a bilingual *comunidad autónoma*, the region faces the challenge to accommodate the use of Catalan and Spanish within a highly politicized environment. While both are official languages in this part of Spain, the question of when to use which language in public is not free of dispute and discussion. Although superficially this debate seems to be restricted to elitist and political circles, it is important to take the cultural perspective into consideration with the economical data in order to understand why this particular innovation system functions as it does, highlighting important aspects that policy makers and scientists have to take into account when recommending action.

Economic Indicators For Catalonia

The Spanish state is divided into 17 *comunidades autónomas* (autonomous communities), representing the level NUTS-2 within the Spanish state. While the Spanish constitution of 1982 does define the necessary political institutions for all *comunidades autónomas*, the right of self-government is an option, not a duty. Consequently, the competencies allocated to either the *comunidad* or the central government vary between the different regions. While some *comunidades* chose not to use their right of self-government to a great extent, the Basque country and Catalonia soon implemented local governments (in Catalonia: the *Generalitat*) with relatively wide responsibilities,

to underline their wish of auto-determination after the dictatorship of General Franco (Encinas 2004: Chapter 4).

Economically, Catalonia is one of the most prosperous regions in Spain, conveniently located on the Mediterranean Sea and serving as a gateway to the Iberian Peninsula. During the Franco dictatorship it received considerable amounts of resources for development projects to decrease the resistance against the Franco regime. The infrastructure and successful industrialization of the region was one result of these policies. At the same time, all attempts to strengthen or even practice Catalan culture and language in public were violently suppressed in favor of a unique and centralized Spanish state. With the new constitution in place, the new regional government, the *Generalitat* de Catalunya practiced a process of nation building, articulating a strong regional identity as a minority, but without the strive for independence as in, for example,. the Basque region in Northern Spain. With the EU accession in 1986, the call for a Europe of the Regions has been repeatedly supported by the Catalonian government. (Keating 2001: 222).

Apart from its government tasks on the regional level, the *Generalitat* is prominently present in all major cultural events promoting Catalan culture and economy. The work of the *Generalitat* is the most important factor as to why Catalonia can be considered a Regional Innovation System in the first place. While administrative divisions within countries do not necessarily reflect a sense of belonging and regional self-understanding, some of the Spanish *comunidades autónomas* do actively seek to transform the area within their jurisdiction into coherent regions. There is a strong conviction that promoting political autonomy and forging a sense of unity will ultimately spill over to the economic sector. (Keating 2001: 220ff). The cohesion of the particular region of Catalonia is thus consciously constructed based on history, administration and economy.

General State of the Catalan Economy

There are advantages to working with regions which are administrative units within their states. Regions with a more or less autonomous regional government get support from the nation state and are institutionalized through regional ministries and the right to conduct policies within this region. Usually they gather their own statistical data to complete (or challenge) the national statistics issued by the national govern-

ment. In Catalonia this task is done by the *Institut d'Estadística de Catalunya* (Idescat), presenting its data regularly in the Statistic Yearbook and on its website www.idescat.net. If not stated otherwise, the data on Catalonia in this chapter is retrieved from the Annuari Estadístic de Catalunya 2007.

Economically, Catalonia has been at the forefront of Spanish industrialization and development. In the 19th century, the economic focus was on traditional industries, such as clothes, leather, food and beverages, and small machineries industries. During the Franco dictatorship, electronics and chemicals came to the front of economic structure, while the newest developments are consumer electronics, pharmaceuticals, business services and information and communication technologies (Santisteban 2006: 30). Among Spanish regions, Catalonia is at or near the top of most rankings on competitiveness, economic activity, GDP, and active population. According to the *Idescat.* (AEC07/4), the Catalonian GDP in 2006 was 195,284 million Euros, representing 19.91% of the Spanish GDP. Considering that Catalonia accounts for 15.93% of the Spanish population (approx. 7,020,207), the economic activity is above the average when compared to other Spanish regions. In a European perspective, the GDP of Catalonia per capita (adjusted for purchasing power) in 2006, is 31.5% higher than the average in the EU-27 and still a 17% higher than the EU-15 (Spain: 5.3% and -7% respectively). As this data shows, Catalonia's claim to be Spain's most important *comunidad autónoma* is not far-fetched.

In contrast to development in other European regions, the unemployment rate in Catalonia has decreased in recent years. While in 2002 10.2% of the overall population was unemployed (with 20.3% of unemployment between those aged 16-24), by 2006 the unemployment rate had been reduced to 6.6%. Young men and women between 16-24 years are still the most vulnerable group, coping with an unemployment figure of 14.7%. (ACE/07/3.32). Although these numbers appear quite positive when comparing them with similar regions elsewhere, the picture for employees is not as easy as it might look. The vast majority of work contracts are of a temporary nature, which means that the relatively low unemployment rate does not represent a high security, but rather a higher turnover in workers. Upon completing one temporary work contract, workers might find another temporary work place rather quickly. However, the insecurity of whether there will be another work place still remains.

In agriculture only 12% of 53,671 contracts in 2004 were not of temporary nature. This in itself is not surprising, as the use of seasonal workers is a widespread practice in agriculture. In the industry sector, the picture is slightly more stable, however still 74.4% of a total of 81,152 are temporary and in the construction sector more than 4/5ths (81.9%) of 340,666 contracts are temporary. The service sector, similar to the construction sector, includes a 81.5% of temporary work contracts, based on a total number of 2,242,838 contracts. (AEC/07/3.55).

This high percentage of temporary work contracts also impacts the salary structure, as the average salary for temporary contracts is much lower than for the indefinite counterparts (21,888 EUR/year vs. 13,937 EUR/year), even when controlling for half-time and full-time differences. Furthermore, there is a substantial gender gap in salaries, independent of contracts, which might be due to the absence of national wage agreements as they exist in other countries (AEC/07/5.15). Considering that the average cost of living for a household is 24,431 EUR (2004), salaries have to be considered quite low.

This comparatively low salary structure in combination with moderate labour costs apart from salaries, already indicates a clear advantage for the region vis-a-vis other competing regions: labour is relatively cheap. On top of the salary, which accounts for 73.51% of labour costs, another 26.49% goes to taxes and other contributions. On the other hand, the general education level of the population is average rather than high. Only around 15% of the adult population have a university degree (ACE/07/2.09 and ACE/07/14.32), of which 3/4ths live in the Metropolitan Area of Barcelona, the main hub of economic activity in the region.

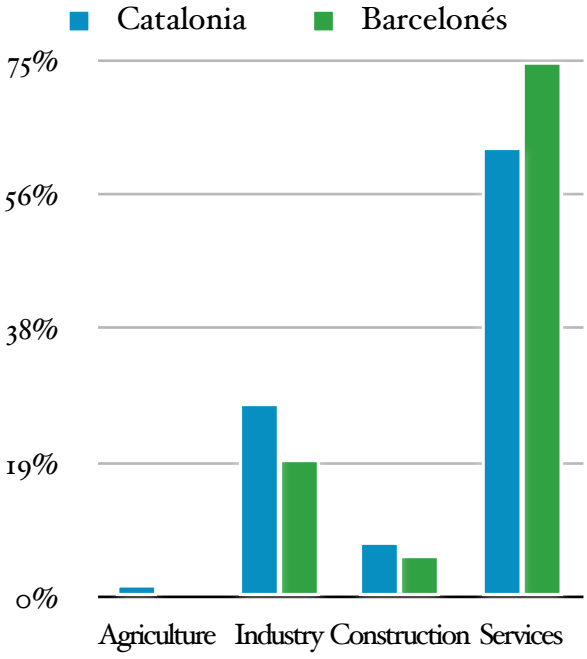

Exhibit 10: GDP in Catalonia and Barcelona (2001) divided by sectors. AEC/07/4.07.

Looking at the GDP divided into sectors in Catalonia and in the Metropolitan Area of Barcelona, the importance of the regional capital is even more accentuated. Exhibit 10 shows the differences. While the agricultural sector represents 1.8% of

the Catalan GDP, in Barcelona there is no agriculture at all. The industrial sector produces 27.2% of the Catalan GDP, however only 19.3% of the GDP in Barcelona. The construction sector is also slightly more important in Catalonia (5.8% of GDP) than in Barcelona (7.8% of GDP). As these three sectors are underrepresented in Barcelona, consequently the service sector is more prominent in the Metropolitan region of Barcelona. 74.9% of the Barcelonés GDP is produced by this sector (Catalonia: 63.1%). The service sector is the most important sector in the region, and in Barcelonés in particular.

The Business Service Sector in Catalonia

Despite its importance for the economy, data on the service sector is not even remotely as extensive as on industrial activities. Both on the Spanish and the Catalan level, the sector has been neglected and/or only partially included in research questions and data collections. As with many other European countries, Spain, as well as Catalonia, only started a regular and complete collection of data on the service sector in 2000, thus implementing the Council's regulation no. 58/97 (regulating the availability on statistical data for enterprise structures in each Member State). Since this date, a report on the service sector for Spain is compiled every year, including demographic and economic data and offering a general overview of this sector. (Cifras INE 5/2002).

The importance of the service sector is not only visible in its participation in the GDP (67.2% in Spain, 63.1% in Catalonia), but also in the employment figures. While on the Spanish level 65% of all employees work in the service sector, in Catalonia the percentage is 62.3, also slightly below the European average (71% of GDP, 70% of employment in 2004). However, the service sector is a very diverse one, which has finally been recognized by the IDESCAT, which now divides the sector into five sub-sectors. Employment within the Catalan economy in 2006 thus reads as follows (AEC/07/3): Agriculture 2.6%, industry 23.1%, construction 12.0%, retail and tourism 20.6%, transports and telecommunication 6.1%, **financial services and B2B services 12.8%**, public administration/education/health care 15.3%, other services 7.6%.

12.8% of the economy coming from financial services and B2B services does not sound too impressive. However, taking into account the bigger picture, mainly that in Spain almost 2/3 (60.3%) of the total revenue of business services is made in Madrid (2000: 23.9%) and Catalonia (2000: 21.7%), it becomes clear that this sector plays a vital role

in the Catalonian economy. Furthermore, most of these businesses are SMEs, usually with less than 25 employees, which indicates that these enterprises are unlikely to move to other regions, but rather will stay in Catalonia. Any investment in their future will thus be an investment in the future of the region. For an overview on the number of enterprises when subdividing the B2B service sector, see exhibit 11:

	R&D	*Consultancies*	*Technical Services*	*Marketing*	*Personnel Selection*
Firms	679	30412	1103	4903	1010
Establishments	685	31541	1200	5003	1472
Employed persons	5129	91908	5678	21606	71190
Turnover (million €)	334.59	5495.73	324.08	2993.75	1093.79
Expenditures (without salaries) (million €)	216.1	2048.26	362.79	2303.63	113.14
Salaries (million €)	172.73	1848.33	106.93	584.11	960.45
Investment into material assets (million €)	21.87	267.07	25.35	-140.57	4.27

Exhibit 11: Business Services. 2004. Adapted from AEC/07/ 11.33.

Consultancies are by far the biggest group within the knowledge intensive business sector. This is mirrored in the case study in chapter 4 of the paper, as three out of five interview partners represent consultancies, although the difference between consultancy and other categories may blur at times.

The Catalan Innovation System

The qualification of Catalonia as an innovation system is not undisputed (see Riba Vilanova 2001 for a detailed analysis), due to a weak correlation between research institutions and the economic applicability of research results in the form of patent applications. However, as shown in chapter 1, innovation is not only about R&D in technology, nor is it restricted to areas where patent applications are a valid source of property right protection. When including process and organizational changes in the definition of innovation, the systemic character of the Catalonian innovation support system becomes apparent. There is no doubt that the region is a recipient of innova-

tion policies from at least three levels where responsibilities and competencies are sometimes shared and sometimes overlap. Together, the *Generalitat*, the Spanish government, and the different EU organizations in charge of supporting innovation in Europe, put together a unique system of policies within the region, targeting both science and technology centers doing R&D, as well as private enterprises in both industries and services. A comprehensive overview of the Catalan innovation system has been compiled by Busom 2006, analyzing in-depth the state-of-the-art innovation in Catalonia. She describes the Catalan innovation system as shown in exhibit 12. The public system, as well as enterprises are both actively fostering different projects related to R&D, science and technology.

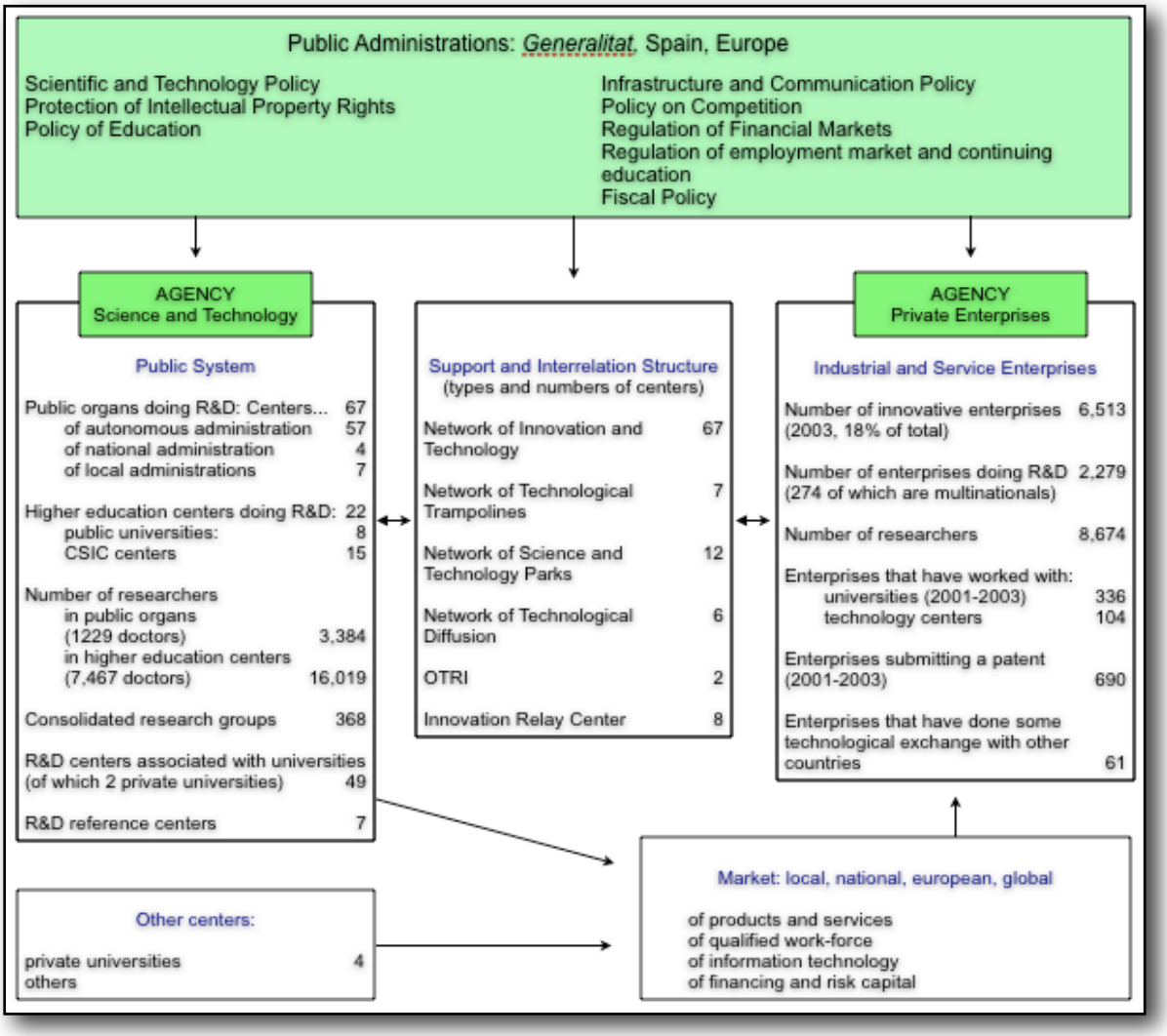

Exhibit 12: Overview on the Catalan Innovation System. Busom 2006: 26.

The different policies pursued by these different entities are not always balanced and mutually re-enforcing, although the *Generalitat* makes an effort to incorporate Euro-

pean initiatives into its own policies. In the area of innovation support, companies may apply for structural funds based on the European Innovation Framework. Furthermore, there is a Spanish Innovation Policy, implemented by the Spanish Government in its different provinces, which especially focuses on Research and Development. Additionally, the Catalonian Government has recently engaged explicitly in fostering innovation.

Considering the structure of Catalonia to be foremost dominated by SMEs, the region especially qualifies for support under the European Innovation Programme (EIP). Already in the II and III Framework Programmes, the predecessors of the CIP in 1998-1991 and 1990-1994 respectively, Catalonia received a considerable amount of support. In this period, EU funds were more important than Spanish and Catalan funds for R&D activities (Riba Vilanova 2001: 220). However, with the accession of other, structurally much weaker regions compared to Catalonia, the region might need to contribute more by itself.

The most important EU tool for innovation support in Catalonia is the regional Innovation Relay Center (IRC). All over Europe there are 43 IRCs in 33 countries to provide special services for innovation in companies, research institutes and technology centers. In the future they will be incorporated into the European Enterprise Network, which, however, is not yet operating.

In Catalonia, the IRC is firmly incorporated into the *Centre d'Innovació i Desenvolupament Empresarial* (Center of entrepreneurial innovation and development) - CIDEM - a specialized agency belonging to the *Generalitat*. As a result, this organizational aspect leads to a strong interrelation between European and Catalan innovation policies. As most policies are promoted and developed in the same center, they have more or less the same reach within the enterprise population of the region. Knowing about European funding opportunities necessarily includes knowledge about the CIDEM's activities. On the other hand, having access to CIDEM programmes most probably results in knowledge of how to obtain European funding. For the *Generalitat* this is certainly a logical development, as the region is on the forefront of the European Movement of Regions, thus having strong interests in good relationships with EU entities. On the other side, this relation is also instrumentalized to bypass the Spanish national government.

The third big player in the innovation policy arena is the Spanish government, which still retains decisive decision and budget power over many innovation related areas. Although the constitution of 1976, marking the transition to democracy, entailed a growing influence of the autonomous communities on many policy areas, policies targeting competitiveness remained the sole responsibility of the central government. Policies were targeted almost exclusively at industries, as was the custom in Europe in that time. Only in the late 1990s, when the concept of regional innovation became latent, the regional governments of many autonomous regions became active with their own innovation policies. (Santisteban 2006: 27). These activities would compete with the national public research centers (of which Catalonia hosts 21) and technological development programmes implemented by the Spanish government since the mid-1980 in the context of the National Plan for R&D. Considering that Catalonia had already then received between 20% and 30% of all funding for competitiveness, the region had a high amount of national influenced innovation policies from the very beginning. (Bacaria 2004: 72f).

The EU Report on Innovation for Spain in 2006 positively remarks the changes with the new government, elected in 2004. For the first time the National Plan for R&D and Innovation 2004-2007 includes a more or less concerted strategy to coordinate different innovative policies on different levels, together with clear incentives for companies to innovate independently of their region. The most important project for innovation within this Plan is the INGENIO 2010 programme, targeting an increase in R&D expenditures and more private sector engagement into R&D in order to measure up with the EU15 average expenditure. For enterprises, the entrepreneurship programme seeks to incubate and develop new ideas, in combination with a Human Capital Programme. (Appraisal Report 2006: iii).

However, at the moment, Spain is overall investing only 1.06% of GDP in R&D (about half of the EU15 average). Even including the national fiscal policies for R&D, which allows companies to deduct up to 50% of their taxes for innovation activities, the Spanish government is not the first address for Catalan companies when in need of support. Public subsidies and funds are half the EU average and most are managed in a highly bureaucratic manner, which makes them even more unattractive. (Appraisal 2006: 3).

The main problem of the Spanish innovation approach is the great variety between the Spanish *comunidades autonomas,* both in economic structure and in the level of self-governance. The different *comunidades* thus have different needs and different means at their disposal to tackle those needs. Sometimes the university system needs support, while in other parts the network of SME's are lacking incentives, while in other regions the civil service is the weakest link. It is thus very difficult to develop a comprehensive innovation approach suiting all needs (Buesa et al 2006). Perhaps the new InnoEmpresa 2007-2013 initiative can overcome this difficulty. This initiative is planned at the national level, however regional governments have a voice from the very beginning. The coordination with the regions is sided by a co-financiation by Structural funds and aim at building a comprehensive innovation framework. However, for an evaluation it is still too early (Appraisal 2006: 24).

On the regional level, the Catalan innovation policies are concentrated on the Barcelona metropolitan area, where most of the relevant organizations and centers are located. The city is the focal point of urban and industrial developments, as 70-75% of the province's population live and work here. Santisteban (2004: 29) shows that within a radius of 100-120 km around Barcelona would include almost 95% of Catalonia's economic activities. As a consequence, most of the innovation policies are targeted at SMEs within this region. The annual statistical report of Catalonia also shows that the sub-region of the metropolitan area received almost half of all investments (Anuari estatistic 2007: 460) for at least the last three years. In 2007 the Barcelona metropolitan area received 1646.36 million Euros out of a total budget of 3675.02 million Euros. The remaining amount is divided between the other six sub-regions.

Legally, under Article 9.7 of the Statute of Autonomy of Catalonia (1979), the Catalan government decided to retain the exclusive competencies on R&D, coordinating relevant approaches with the central government. Consequently, regional and national policies are both present (as can be seen by the Spanish research centers in the region), albeit, with often unclear borders. (Bacaria 2004: 74).

The first step toward an autonomous innovation policy was the creation of the Interministerial Commission for Research and Technology Innovation (CIRIT) and the Center of Entrepreneurial Information and Development (CIDEM). While the first one coordinates all scientific research within the framework of the *Generalitat*, the

CIDEM focuses on industrial development. Hierarchically, it is a part of the Department of Industry, Commerce and Tourism, however, it is very independent in its activities, which consist mainly of creating and managing a network of laboratories that run the technology transfer centers in the region (where also the European Relay Centers are located). (Bacaria 2004: 74). Over time, the CIDEM expanded its activities and today understands itself as the main actor responsible for innovation in Catalonia. (Bacaria 2004). However, the two organizations also illustrate Catalonia's greatest weakness in innovation: the division of scientific research and the entrepreneurial innovation, organized through two different approaches, namely the Research Plan for scientific research and the Innovation Plan for SMEs. However, since 2005, the new Research and Innovation Plan (PRI) managed by the CIRIT tries bridges this gap, while the CIDEM focuses its work on the facilitation of European initiatives and the development of SMEs in the region.

The *Generalitat* and its supporting institutions are participating in and implementing a variety of EU sponsored networks and projects, especially in the field of infrastructure. The semi-public *Patronat Català Pro-Europe* even goes so far as to represent Catalan interests in Brussels, through its own representatives and a permanent office. At the same time, this organization is a direct track for information about EU R&D programmes to reach the Catalan innovation system (Roller / Sloat 2002: 79). Other supporting measures implemented by the Catalan government offered by the EU R&D Framework Programmes are a stronger support of basic research, developing an infrastructure for research of European interests, support SMEs to be involved in large-scale projects, and managing the relationship between research and structural funds. (Appraisal Report 2006: 24).

Cooke et al (1997: 482) classifies the strength of innovative regions along their budgetary abilities, as fiscal and budgetary independence at the same time increases the independence within the political system (vis-à-vis the central government). In this context Cooke et al divide the regional spending capacity into 1) decentralized spending where the nation states allocates the resources to be spent by regional governments, 2) autonomous spending where the regional government can decide by itself where to allocate the assigned money, and 3) the authority to impose taxes. Following this classification, Catalonia is a comparatively strong region in the European context, al-

though its tax-raising powers are limited. However, complementing its own taxes, Catalonia is granted 30% of the income tax (IPRF) in the province since the tax reforms in 1994, plus transfer payments from both state and EU funds, which however are often directed at specific policy areas. All-in-all, despite more fiscal autonomy based on the new Statute of Autonomy from 2006, the ability to manage funds is still greater for the *Generalitat*, than its tax-raising power. Consequently, the *Generalitat* is more likely to shift existing expenses from one sector to the other when one or the other sector is deemed to need more investment. Thus, the government department (ministry on the autonomous region level) for university, research and information services was abolished (2006: 959.58 thousand Euros, 2007: 0 Euros) and the money re-allocated toward the department for innovation, universities and enterprises, which as a result increased from a mere 140 thousand Euros to more than 1.320 thousand Euros, showing a huge increase in relevance of this policy area (AEC/07/12.03). Among a total of 17 governmental departments, only 4 other departments (the department for social action and citizenship, the education department, the public operations department, and the employment department) have a higher spending power.

Innovation is thus now an even higher priority for the *Generalitat* than before. With its two innovation-related organizations, the CIRIT and the CIDEM, the *Generalitat* is offering support to both academia and industry in a very extensive manner. SMEs get special attention, as they make up a prominent part of the Catalan economy. They are offered a wide range of courses and resources on innovation management, especially for the industrial sector (Ribera et al. 2002). However, the main focus of the government support is to further develop policies proposed by Spain and the EU. At this time, the most important instrument to strengthen the innovation system is the Research and Innovation Plan (PRI), approved by the *Generalitat* in January 2005. The plan covers the period between 2005 and 2008 and is based on a budget of € 800 million, divided between three major instruments: 1) transversal programmes focusing primarily on Research support measures and transfer from academia to industry, 2) complementary programmes with a special focus on mobility, cooperation and internationalization on a global and European level, 3) sectorial programmes to enhance successful clusters. (PRI 2005: 15ff).

The objectives of the PRI place a strong emphasis on the diffusion of R&D results and on strengthening the link between academia and industry, in combination with a stronger international competitiveness of the RIS. For the individual company, the PRI is interesting insofar as under objective 4-7 companies are the explicit target of projects fostering the communication and transfer of knowledge between individual firms and research institutes, as well as the incorporation of researchers into regional active companies.

The PRI is complemented by the extensive services offered by the CIDEM for companies that need financial and knowledge backup for their innovative initiatives. Information on strategic and innovation management, technology outsourcing and funding availabilities is available, together with a special programme for young entrepreneurs wanting to start their own company. In contrast to the PRI however, this very concrete information is fostered by the government, however, firms are expected to contribute financially. (CIDEM 2006).

Policy-making in Catalonia is all but a simple measure. At least three different policy-makers have to be taken into account, namely the Generalitat, the Spanish State and the European Union. Sometimes a fourth level of the local authorities might even be added. Despite a clear focus on innovation policy, however, the economic framework in Catalonia is highly shaped by EU and national legislation, while the Generalitat has more influence on welfare and public policy. A more detailed overview on the multi-level governance can be found in exhibit 13.

Policy Sector	Strategic Regulation	Formulation	Provision
Telecommunications	EU	State	State
Employment	EU	State	Generalitat
Environment	EU	Generalitat	Generalitat
Social Protection	EU	State	State
Immigration	EU	State	State/Generalitat
Housing	State	State/Generalitat	Generalitat
Education	State	Generalitat	Generalitat
Health	State	Generalitat	Generalitat
Language	Generalitat	Generalitat	Generalitat

Exhibit 13: Multilevel Policy-Making in Catalonia. Predominant institutional actors. Brugué 2001: 112.

What has been previously stated now becomes clear: the Generalitat is the main reference for citizens and SMEs in Catalonia, however, its main strength lays in the provision of infrastructure previously decided upon in the EU or national government. Consequently, it makes sense for Catalonia to substantially invest in its presence in Brussels through the Patronat Català Pro-Europe to strengthen its position within the province and the nation-state.

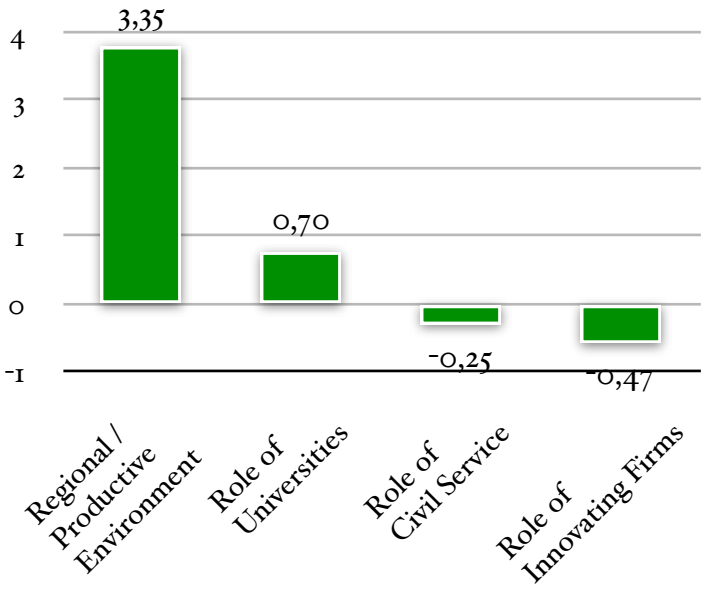

Exhibit 14: Own elaboration based on Buesa 2006: 469.

Bruesa (2006) differentiates the innovation systems of different Spanish regions by analyzing which actor is most influential in the innovation system (exhibit 14). For Catalonia, the innovative firms have a surprisingly low role, giving more impact to the overall regional and productive environment and the universities. However, the recent data available at *Idescat.* (2006) offers a different picture.

In 2004, an overall amount of 12,840 enterprises report to be engaging in innovation. 32% are investing in internal R&D and 16% use external R&D. Almost all (90%) of these firms plan to invest in education, knowledge acquisition and commercialization. These numbers represent a growth of 21% of innovative firms in 2002 to 31.7% in 2004 (Spain: 20.6 and 29.7% respectively). Unfortunately, there is no data available for the period where the new RPI was implemented, however, the rising numbers of innovative firms may indicated a change in culture with more emphasis on innovation.

The Catalan Innovation System and the Business Service Sector

Information on how the innovation system reacts upon and toward the business service sector is relatively scarce, as the main activities are (usually) focused on industrial enterprises doing R&D, working with universities, and/or registering patents. However, as the chapter on innovation has shown, these measures are only partly appropriate to measure the innovativeness and the effect of the innovation support system on

knowledge-intensive business services. Although officially the service sector has been included in programmes and initiatives from the EU, Spain and the *Generalitat* alike, it has usually been subsumed to the industrial sector without taking specific characteristics into account. The innovation system, as it has been described by Busom 2004, is still very focused on traditional product innovation, R&D support, and the transfer of hard scientific knowledge from universities to (predominantly industrial) enterprises.

Although the CIDEM has opened most of its programmes for the Service sector, or at least for those services working with the industry sector, innovation is still very much perceived as product-related. This is not only due to CIDEM's affiliation with the ministry of industries or the focus on research in technologies. It is also related to the lack of understanding of what business services might add to an economy. In Busom's representation of the Catalan Innovation System, the market is the part of the system which is influenced by public entities working with Science and Technology, while it has a decisive impact on private enterprises from industries and services alike (see exhibit xx, p. xx). One of these markets is the qualified workforce, which, however, does not only depend on science and technology. The current RIS seems to focus much more on the other three market segments, including the shift of university activity from training towards R&D. A shortage in qualified personnel, however, tends to hit service enterprises harder, as their salaries are usually lower than in industrial enterprises.

While innovation-support programmes usually target enterprises and universities, in order to increment the quality of the workforce through on-the-job training or specialized study programmes, Busom highlights another problem of the Catalan labour market. The population is either very qualified or lacks basic qualifications. While in other European countries between 40% and 60% of the population has a medium level of education, in Catalonia only 18% are in this category. 25% are highly qualified, while a troublesome 58% have only low qualifications and are thus the most vulnerable part of society. For a region thriving for innovation and competitiveness in a global environment, this is probably more problematic than many other factors and might hinder innovative entrepreneurs and firms in their development. (Busom 2006: 129ff).

Although the official public innovation support does only marginally support the business service sector, there has been a recent development that nevertheless creates a

positive surrounding for these enterprises: the growing trend to outsource those activities not belonging to the core category of many industrial companies. Garcia i Inglés (2007) has recently presented a study on the "tertiarization of Catalonia's industry", analyzing this shift in the Catalan economic structure. Following her argument, Catalonia is in fact a very suitable environment for small service firms, especially because of its high industrialization. Her research shows that usually firms outsource toward service enterprises within the same province or even municipality, supporting the argument that proximity is of importance for the further development of innovation systems. Although Catalan enterprises tend first to out-source those activities which are of little added value (such as transport and preparatory steps in production), the organization of outsourcing is usually already done with the help of a consultant, such as a knowledge-intensive business service. As a result, out-sourcing does not only shift employment from the industrial sector to the service sector, it also creates new job opportunities in business services, as these tasks are usually realized by geographically close firms. Overall, business services show a general positive trend for job creation (see exhibit 15). If this change in business culture should persist, the knowledge-intensive service sector will increase even more during the coming years.

As a matter of fact, the service sector is especially receptive to changes in culture and reacts positively to a broader recognition of the advantages of innovation. As services are delivered in close interaction with the customer or client, this customer plays a de-

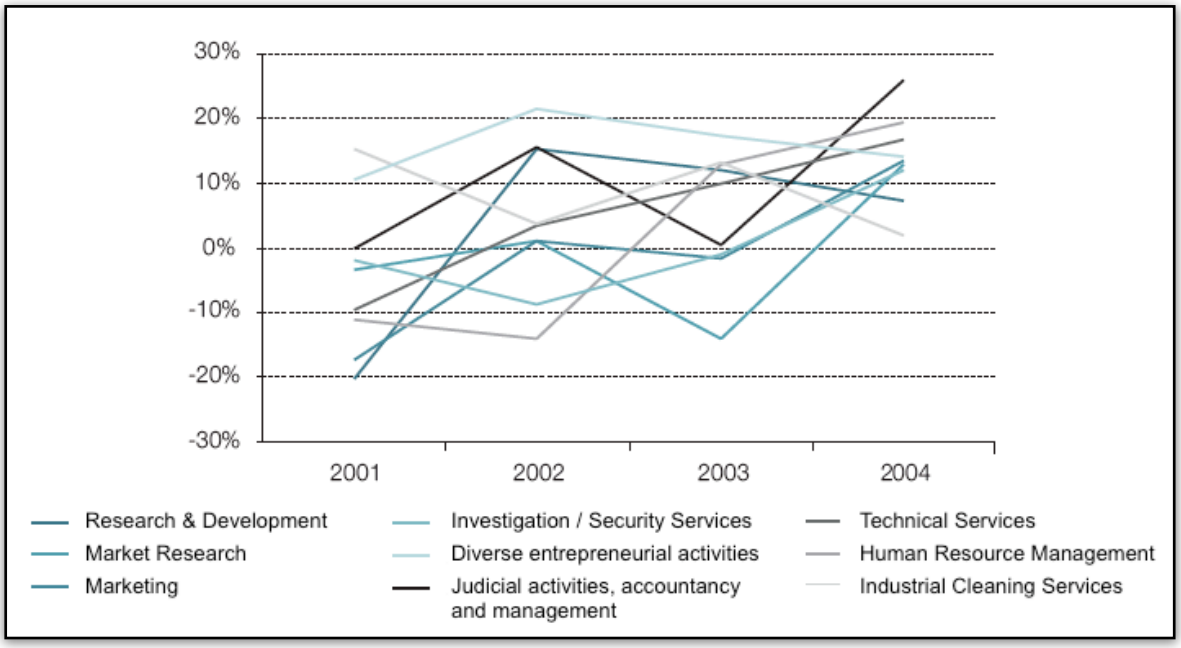

Exhibit 15: Evolution of occupation in the business service sector in Catalonia. Garcia i Inglés 2007: 72.

cisive role in determining whether a service will be successful in the end or be a failure. Consequently, the cultural traits of the location may play a special role also for knowledge-intensive business services. In order to get an overview of this topic, the following subchapter will present data and peculiarities which are unique to Catalonia and may influence the way firms in the autonomous community do business. The analysis of the interviews in the third part will shed further light on these propositions.

Regional Identity: The Importance of Culture

The qualification of labour and active R&D in universities and private research centers is not enough for a region to be innovative, independent of the sectorial characteristics. Although empirical evidence does confirm a role for the region, the key is a culture oriented toward interaction and communication between actors (see e.g. Rondé et al. 2005). These competences need to be spread throughout society, instead of being related to only one sector. As relations are foremost spread through language, this is one important factor within the regional setting of Catalonia.

There are three regions in Spain with more than one language. While Spanish is the official language for the whole country, there are three regions with regional official languages: Galicia, which borders Portugal, the Basque country, which borders France in the North, and Catalonia, which borders France in the West. In all three regions, language is an important part of cultural self-understanding, although the real use of the languages may vary. The importance of the language has been reinforced through a history of repeated political attempts of centralist governments to eliminate the use of languages other than Spanish. The last suppression, during the Franco regime, is still a vivid memory for older people in all the regions with minority languages, as General Franco outlawed all minority cultures in the Spanish territory, inflicting severe punishment in case of non-compliance. Since the re-democratization and the establishment of autonomous regions within the Spanish political system in 1976, the opposite is taking place, with a strong initiative to recover culture and language that had been lost during the dictatorship, when a whole generation was deprived of learning and using their languages. Due to the language structure, the consequences are much easier to cope with for Catalonia and Galicia than for the Basque country.

According to the Galician government, almost everybody in the province understands and speaks gallego (99.16% and 91.04%), while more than half of the population are able to read (68.65%) and write (57.64%) the language. The reason for the general diffusion of Gallego is certainly its linguistic similarity with Spanish and Portuguese. Galicia is home to approx. 6.6% of the Spanish population.

The Basque language has a more difficult situations, as it bears no similarity to either Spanish or other European languages. The Basque government thus estimates the percentage of the Basque population using the language always or often is at around 9%. As the language is rather difficult to learn, its diffusion is not likely to expand much in the future, although the government offers free language courses to support the language community. Official government information, as well as education, is available in Spanish and Basque. 5.5% of the Spanish population lives in the Basque country.

Catalan then is the most important one of the three regional languages, as 15.5% of the Spanish population live here. As a romance language with certain resemblances to Spanish and French, it is relatively easy to learn for those who already know either of these languages. Additionally, the regional government, the *Generalitat*, pursues a decisive policy in favor of so-called "language normalization", including both voluntary and coercive measures. The default language when dealing with the authorities is always Catalan, although Spanish is accepted on request. The legal background is the Statute of Autonomy of Catalonia from 2006 (replacing the Statute of 1979), which significantly broadens the support for Catalan. In the 1979 Statute, the government is called upon to "create the conditions making it possible for them [the two languages] to achieve full equality in terms of the rights and duties of citizens of Catalonia". In the new Statute of Autonomy of Catalonia, approved in a 2006 referendum, Article 6.2 goes further demanding that "the public authorities of Catalonia shall establish the necessary measures to enable the exercise of these rights and the fulfillment of this duty [to know both Catalan and Spanish). Consequently, the educational system up to

the university level is entirely offered in Catalan only (save 3 hours of weekly Spanish lessons). Also, public signs often only appear in Catalan. On the other hand, the government offers Catalan language courses free of charge up to a basic level, intended especially for immigrants from both other Spanish regions as well as other countries. All these measures lead to a rather wide-spread knowledge of the language, as shown in exhibit 16. Note the very small difference in language knowledge between Catalonia in total and the Metropolitan Area of Barcelona. Considering that 68% of all foreign residents in Catalonia live in the Metropolitan area, knowledge of Catalan seems to be relatively high among these inhabitants as well. The fact that about 2/3rds of foreigners come from either Spanish-speaking (Latin America) or French-speaking (many African countries) regions, may explain the small difference, as it is relatively easy for this population to adapt to the new language quickly(AEC/07/2.27).

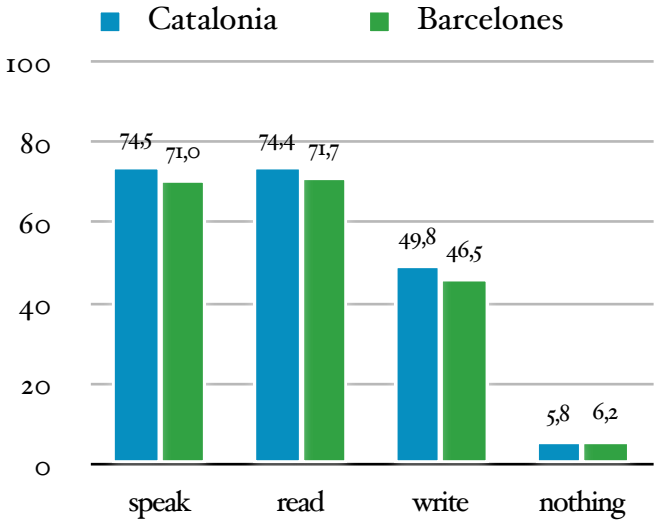

Exhibit 16. Knowledge of Catalan in the population aged 2 and older. AEC/07/15.34.

However, simply knowing a language does not necessarily mean that it is used in daily life. It could be that many people manage Catalan quiet well when they need to, for example in the educational system. To document the real use of Catalan, the *Idescat* thus included questions on the frequency and areas of use for both Catalan and Spanish into its Annual Statistics (AEC/07/2.37-40). According to this data 50.1% of the population report Catalan as being their most used language, while 44.1% use Spanish more frequently than Catalan. The remaining 4.7% use both language the same amount of time. Catalan and Spanish seem to be equally important in daily life. This is also supported by the areas of use of the two languages (see exhibit 17).

While general knowledge of Catalan is almost the same on the level of the *comunidad autónoma* and the Metropolitan Area of Barcelona, the percentage of the population using only Catalan in different areas of life differs significantly, being lower for Barce-

	Only/Mostly Catalan	Both	Only/Mostly Spanish
Family Members	44.3	9.0	44.3
Friends	42.3	18.4	37.5
Neighbors	40.1	17.2	41.1
Study Colleagues	45.3	20.3	30.6
Work Colleagues	43.4	20.6	32.9

Exhibit 17. Use of Catalan and Spanish in daily life. Adapted from AEC/07/15.39. Missing to 100%: no answer.

lona in all five categories. Only 28% of the residents in Barcelona speak only Catalan with their families (Catalonia: 37.2%), 16.1% use Catalan exclusively with their friends (Cat alonia: 24.5%), and 19.5% with their neighbors (Catalonia: 29.5%). With study colleagues and work colleagues, the exclusive use of Catalan in Barcelona is 19.3% and 20.7%, respectively (Catalonia: 27.3% and 27.4%). Consequently, while the knowledge in Barcelona is as broad as in the rest of Catalonia, the use of Catalan as the only language is much lower, which is also a sign of the internationalization of Barcelona.

Two other data are interesting to better understand the extent of difference between Spain and Catalonia, the use of Catalan vs. national newspapers and the political dimension of a strong or weak identification with the *comunidad autónoma.* There are six journals available in the Catalan language, centering the news coverage on Catalonia and its relationship to Spain. These newspapers compete with a variety of national newspapers in the Spanish language. Nevertheless, 31.7% of all newspapers sold within Catalonia are those Catalan papers, further underlining the importance of language and culture in the region. This share has been growing (though very slowly, starting from 30.5% in 2002) during the last years (AEC/07/15-29).

Despite the relatively high popularity of the language and the importance of safeguarding Catalonian culture, the *comunidad autonoma* has not suffered from political unrest as has, for example, the Basque country. Most political parties represent the status quo and despite some minor changes (e.g. more fiscal autonomy) there are no secessionist aspirations. Approaches are usually pragmatic and the lack of influence in Spanish politics is used as an incentive to engage on the European level (Roller / Sloat 2002: 4). Only one political party, namely the *Esquerra Republicana de Catalunya* (Republican Leftist Party of Catalonia), officially aspires to independence of the so-called *països catalans* of all Catalan-speaking territories, including Catalonia, the *comunidad*

autónoma of Valencia, a Western strip of the *comunidad autónoma* of Aragón, the Principality of Andorra and most of the Southern French *départements* of Pyrénées-Orientales. Even within a Europe of Regions, this seems to be a dream still far from realization.

Policy-making: Not everything in Catalan is of Catalan origin

The relationship between the *Generalitat* and the Spanish government tends to be tense where the autonomy of the *comunidad autónoma* is concerned, as the constitution does not explicitly define the division of powers and responsibilities (Roller / Sloat 2002: 77). This is especially the case in the fiscal area and with cultural questions (e.g. the recent introduction of a mandatory third weekly hour of Spanish led to massive protests from politicians from all parties). However, while the political discourse often focuses on an apparent competition between Spanish and Catalan, the general population seems to accept the status quo without much reservation, as long as they are not deprived of the right to speak the language and educate their children in this language. A clear sign of this development of normalization has been the referendum on the new Statute of Autonomy of Catalonia in 2006, broadening the responsibilities of the autonomous government. The Spanish constitution leaves the exact design of how to use their autonomy to its *comunidades autónomas,* which allows a re-design of rights and duties vis-a-vis the Spanish state (Encinas 2004: Chapter 4). The new Statute declares the Catalan people as a nation and expands the rights of the *Generalitat* concerning taxation, selected judicial matters, and the transport system. Although the new Statute passed with 73.2% of the vote, the low participation of only 48.9% as opposed to the usual participation rate of between 60% and 70% of potential voters, indicates that the population is not as keen on the topic as politicians and the media coverage.(AEC/07/19.20).

Language and culture are thus crucial when analyzing the region, as the language is recognized as an important part of regional identity. Although it is perfectly acceptable to speak Spanish, knowledge of the Catalan language might open doors for the local population which otherwise would not be there. This also holds true for information on innovation policies and market access.

While the economic sector usually resorts to Spanish as the internal communication method, the innovation support system from universities and the local government

alike, more often than not, limit their presentation and information services to Catalan. This practice certainly influences information flows among support organizations and firms (among all sectors). A very interesting example is the CIDEM, the governmental organization in charge of innovation and competitiveness in Catalonia. While on its homepage http://www.cidem.com the general information is available in Catalan, Spanish and English, further details on funding opportunities and how to obtain financial or other support is only offered in Catalan. While it could be argued that this ensures a certain advantages for local entrepreneurs, the exclusion of immigrant entrepreneurs (from abroad, but also from other Spanish regions) might not be the right way to foster innovativeness within the region.

All in all, for local enterprises and citizens, the presence of the *Generalitat* is much more visible than the importance of both Spain and the European Union. The importance of the latter two is recognized, however, they seemingly have little influence on real life. This is interesting information insofar as the first level to turn to for policy changes is the regional government. In the case of innovation, the *Generalitat* seems to be on its way to level expectations on influence with real provision of policies. However, in many other policy sectors (see exhibit 18) the perception of the *Generalitat* has been much higher than its effective influence, while the EU and the Spanish state exert a relatively high influence without being very present (Brugué 2001: 106). The high visibility is accompanied by a high level of trust from citizens living in Catalonia. The regional government is perceived as less corrupt and more efficient than its national

Policy Sector	Strategic Regulation	Formulation	Provision
Telecommunications	EU	State	State
Employment	EU	State	Generalitat
Environment	EU	Generalitat	Generalitat
Social Protection	EU	State	State
Immigration	EU	State	State/Generalitat
Housing	State	State/Generalitat	Generalitat
Education	State	Generalitat	Generalitat
Health	State	Generalitat	Generalitat
Language	Generalitat	Generalitat	Generalitat

Exhibit 18: Multilevel Policy-Making in Catalonia. Predominant institutional actors. Brugué 2001: 112.

counterpart. This might be one reason for the general acceptance of policies coming from the *Generalitat* in contrast to initiatives from the nation-state. (Keating 2001: 223f).

One reason for this misperception might be the communication of many services in Catalan, which somehow conceals the real author of certain policies. However, the Catalan language is not only a governmental issue. The local Chambers of Commerce, different networking organizations and the worker's union recruit their members and activities, with few exceptions, from the Catalan-speaking part of the economy. The Spanish-speaking offers are usually promoted by nation-wide networks (e.g. neurona.es, a professional online networking tool), which focus on Spain as a whole and do not hold special interests in one region or another. While this does not have a negative impact on Catalonian innovation, it might lead non-Catalan entrepreneurs to ultimately invest their ideas in other communities, resulting into a loss of expertise for Catalonia.

Despite the certain restriction of flow of information, the language also includes a positive, identity-forging aspect. Insisting on Catalan does not only lead to an exclusion of non-Catalan speaking individuals, it also has a strong inclusion aspect as the common language strengthens trust and loyalty between its users. Native speakers as well as second-language users are making a joint effort to keep the language alive, which may be recognized as especially trustworthy behavior.

The topic of inclusion and exclusion will also become apparent in the case study, which will be presented in the next chapter. It should be expected that language, as one crucial ingredient of location and culture, is especially important for small enterprises in the business service sector. Working directly with clients from the region and offering individualized services, the results are dependent upon a successful flow of information between both the service provider and the contracting client. Combining this topic with an analysis of how individual business services perceive their work within the *comunidad autonoma* of Catalonia, some conclusions will be possible when assessing the initial hypothesis: small business service providers benefit more from general support of the whole system than from directed programmes, which might not fulfill their individual needs.

Voices of the Business Service Sector

As mentioned before, Europe's future lies in the prosperity of its small and medium-sized companies. Its future will most likely be especially marked by a growing service sector with a special emphasis on the knowledge-intensive service sector. For policy makers it is thus of rising interest to understand how this special part of the service sector can be supported, or at least not hindered, in order to prosper and influence the economy as a whole in an advantageous way.

In general, a working support structure for SMEs is deemed to be more effective to enhance regional development than targeting multi-national and very big companies. Smaller companies usually have stronger roots within the region and are not likely to move quickly to other locations, even though labour and/or production costs might be lower elsewhere. Smaller firms are often more embedded in regional networks and have strong links with other local or regional firms, be it as clients or as providers. Although the internet potentially offers the possibility to maintain these links even after a relocation, the personal contact is not to be underestimated. This personal contact is especially relevant for smaller firms where the founder is still guiding the development. As Tidd et. al (2001) point out, usually those who found a new company rely on the support of family and friends more than from incubators or business angels. Geographical proximity to these non-business-related, yet crucial contacts, is thus another reason for smaller companies to be less likely to move easily.

When it comes to policy design however, the needs of small companies are much more difficult to asses. While medium-sized companies already possess a critical size of caring for strategy and innovation, perhaps even embodied in a strategic or analytic department, smaller companies are often very absorbed in their daily business as to care for implementing a conscious innovation approach, with or without support offered from the outside. However, it might be especially the smaller companies that could take advantage of support programmes for their future development and competitiveness.

The main question for policy makers as well as scientists should thus be the concerns of small companies rather than relying solely on numbers and R&D indicators. Although some knowledge-intensive business service companies do engage in R&D, this

is usually not their main concern, especially in the case of consulting firms. Probably the quality of the workforce as a crucial resource, and the use of innovative management practices in this highly competitive sector are of more importance than the use of R&D and patent applications.

If official numbers on R&D and patent applications do not shed enough light on potentials and risks of small consulting companies, new ways of finding information need to be identified. One approach to open up questions and topics for further investigation is the use of semi-structured qualitative interviews with selected representatives of small firms from the chosen sector. Open questions with a focus on how to cope with an accelerated market and abundant competitors are the main issues behind the research interviews done for this paper. The following sections will thus present a comprehensive analysis of five selected interviews, in order to get an in-depth understanding of some of the underlying logics that are present when small enterprises are presented with the prospect of innovation.

Service innovation is extremely difficult to measure, as both inputs and outputs are often intangible, and hard numbers are difficult to come by. Consequently, for this paper, an alternative approach has been chosen in facilitate the understanding of how small firms integrate into the innovation system in and around Barcelona. The previous chapters have shown the difficulties of evaluating innovation in services and consequently the impact of factors external to the individual enterprise. The qualitative approach is thus a way to get an impression of what might be important for the companies in question. The findings may then serve as a starting point to formulate new research questions for the future. This means that these findings are not representative and should not be used to extrapolate on the entire KIBS sector in Catalonia. However, the analysis of individual innovation strategies might shed light on the weaknesses and strengths of the existing system.

Methodological Considerations

The past chapters represent an up-to-date appraisal of existing data and analysis of the region of Catalonia. With reference to recent extensive studies organized by CIDEM together with important universities from Catalonia, at this point the gathering of more classic data, or issuing another quantitative questionnaire would not have yielded

substantial new information, especially when considering time and resource restraints of a course conclusion paper. To contribute to the growing interest in the service sector despite these limitations, the methodology used in this paper is explorative and for an economic/political topic perhaps even innovative: based on selected qualitative and semi-structured interviews, the above presented general data can be measured against the particular perception of small enterprises. This method is especially suitable when trying to explore new research fields and understanding the research topic from the inside. (Patton 2002, p 248).

The interview consists of six open questions in combination with some general information on the enterprises themselves. The format of a semi-structured interview has been chosen to prevent the interviewees from simply repeating popular innovation phrases used in government publications, to instead reflect on what innovation and competitiveness mean for their own firm. The semi-structured interview thus gives sufficient guidance to explain the crucial questions, without offering desirable or undesirable answers, encouraging the interviewee to include his or her own point of view.

The six questions in the questionnaire are all concerned with innovation/ competitiveness of the firms in combination with the company‘s own strategy and the perception of the province of Catalonia as a supportive or indifferent actor. All questions have on deliberately been formulated as open-ended as possible, asking for processes, reasons and argumentation instead of permitting binary yes/no answers. Although this results in more difficulties for interviewees to answer the questions on the spot, answers tend to be more carefully phrased and explore the different aspects of innovation in new ways not present in company leaflets and numbers. The complete questionnaire can be found in annex 1. It was available in Spanish and English, as the interviewees could choose the language of the interview.

The most important part of organizing interviews is always the selection of suitable interview partners. For the present project the aim was to find approximately five interview partners from small consultancy firms based in Catalonia that perceive themselves as successful and/or innovative in the regional market. The companies should have more than 10, but less than 25 employees in order to comply with the EU definition of small enterprises (Recommendation 2003/361/EC). Although the EU definition includes companies up to 50 in the group of small enterprise, for the current paper

this number has been reduced in order to get a more meaningful sample for the interviews. Certainly, business service firms often remain small as they cannot enhance efficiency through economies of scale, which exempts them from any obligation to grow for survival (Pilat 2001: 32f).

Furthermore, the companies should be older than 5 years, to ensure they passed the threshold of five years of existence, which is usually considered to be the decisive period after which a company can be judged to be established in its market. The selected firms should be working as consultancies in the B2B market, independently of weather their clients are SMEs themselves, or big companies. All companies were required to have their headquarters in the province of Catalonia, however, other subsidies were not a reason to exclude the company in question.

Interview partners should be in the company for at least three years to ensure a thorough knowledge of the company's goals. For a pre-selection, the online network XING was used to locate 25 potential interview candidates, who were selected based on the firm's characteristics and their position within their companies. All candidates were then contacted via email, explaining the purpose of the interviews and asking for an interview of about 30 minutes. All interviews would be taped and a transcription submitted to the interview partners for authorization. The questions were not submitted with this initial email.

After about a week, a follow up phone call was done, eliminating some potential candidates due to difficulties with scheduling the interview within the next month, or due to the fact that the interview was to be taped. However, the latter was a decisive tool, as only an attentive transcription of the interview for further analysis would allow the required level of detailed information. Furthermore, the repeated examination of the written interview versions can possibly reveal aspects which would have been lost if only a verbatim of the 20-30 minute interviews was available, which as a matter of fact would have included only the points of immediate interest for the interviewer, possibly leaving out other interesting aspects.

Finally, five interview partners were found, meeting the requested characteristics. Only one of them asked for the interview questions beforehand, in order to prepare the interview questions. However, this did not have a significant impact on the interview

itself. All others agreed to answer the questions without further preparation, as they would have the chance to see the transcript of the interviews for authorization before further use. The interviews took place between July 11th and July 23rd 2008 and were conducted either in the company offices or in public spaces. All interviews were conducted in Spanish. The transcriptions where sent to the interview partners a week after each interview, however, apart from some clarifications on programs or places, no changes were made to the transcriptions.

As planned, the companies all belong to the business service sector, working as consultancies for other businesses. In detail, consultancies from the following sectors were represented:

- Marketing and Internet
- Innovation Services
- Innovation and Communication Technologies and Business Strategy
- Corporate Event Management
- Human Resources

The interview partners all belonged to the management of the respective companies, thus having a deep insight into strategies and past developments. The interviews lasted between 17 and 32 minutes, all answering the same six open questions (annex 1), however putting their own emphasis on different aspects.

Presentation of the Companies

Before presenting the in-depth analysis of the interviews, a short presentation of the five companies will help the reader to better understand the later development of the chapter. The presentation of the companies will be based on their *self-portrayal*, which can be found on their respective websites[2]. These self-descriptions are valuable insofar as they offer a clear picture of what each company wants to transmit of itself and how they present their services to potential clients. Although all companies emphasize the importance of referrals of new clients through their loyal customers, the internet presence is nevertheless seen as an additional tool for potential clients to inform themselves about the services before getting in touch with the individual company.

2 For the sake of anonymization the websites will only be mentioned in the annex of the respective interviews. This annex is open to university staff however, it will not be distributed to the general public.

The marketing and business consultancy, coded **MBC1** offers its website in Spanish only, although the Catalan and English version are in the making. The official company slogan is "What you imagine, we make reality", already hinting at their versatility in adapting new technologies and working outside the ordinary. The website gives a general overview of the services offered as well as some references of past and present customers. The user may get in touch with the founders or visit one of the offices in Barcelona and Madrid, while the website does not indicate that Barcelona is the main office with only the technical director being present in Madrid.

The two core businesses of MBC1 are the area of marketing and communication, and business consultancy. For both working areas, the website offers eight examples of expertise in order to show their creativity and possibility to adapt their offers to each client's needs. While during the interview, the company was presented as especially interested in and driven by information and communication technologies (ICTs), the website conveys the reassuring message to potential clients that they will find a solution to whatever communication or business problem, without recurring on standardized solutions. The word innovation is consequently not an official part of the website's vocabulary however, the one-and-only approach for each customer does convey the idea of new and innovative solutions for each task.

The second company, coded as **IC2**, works as an innovation consultancy providing services around innovation and technology. As in the case of MBC1, the website includes a presentation of the company. Furthermore, it offers a database for clients and interested companies and researchers on and around the topic of technology and information. Including information on innovation management, fiscal advantages, and funding opportunities, the site creates a knowledge base to help potential clients define their needs before even officially getting in touch with the company. Regarding their mission, IC2 offers support for companies, entrepreneurs, and public institutions to implement innovation management into the company's strategic focus. This includes the implementation of technological tools as well as management techniques to ensure a sound innovation management and funding. Through regular updates with news on local projects and opportunities, the site is thus also a resource which encourages site visitors to check back from time to time to see what news have been added.

The default language of the site is Catalan, as the companies main market is Catalonia and the Balearic Islands. The user however may switch to Spanish or English, although in this case not the whole content will be available in these languages. This already highlights that most of IC2's clients are from the Catalan-speaking region or at least have a passive knowledge of the language.

TBC3 is a consultancy focusing on business, technology and innovation. They are present in both Barcelona, Spain and Torino, Italy. The website is available in Spanish, Catalan, English, Italian, and has been translated recently into Russian, as the company plans to expand into the Eastern European market. The company is divided into three main areas: strategic and business consultancy, information and communication technologies, and innovation and sustainable development. However, these three areas are not presented as individual working fields, but rather as part of an inclusive offer to clients. Clients are encouraged to take advantage of all working fields, although they might start off contracting only one area.

Although with as equal a focus on innovation as the previously described IC2, TBC3 has a much more international focus, working foremost with multinational companies from Spain and Italy in the whole world. Long-term relationship between TBC3 and its clients are highly valued, and they are sustained through the integral approach of the three working areas, which allows the company to adapt to changing needs of their clients (e.g starting organizing a business strategy, going on to implementing new ICT and then working on innovation management).

The fourth company to be included in the sample is **EMC4**, a consultancy firm for event- and marketing management. Their website is available only in Spanish. This is an interesting detail, as this company also focuses on big multi-national companies, offering a specialized service in organizing thematic events, such as conventions, product launches, and employee motivation. Taking advantage of new information and communication technologies, this consultancy firm creates and manages experiences for their clients to add emotions to their work. They describe their work as innovative in the sense that they come up with ideas and proposals the client would never have thought of, as they have the capacity to focus on details while not missing the bigger picture. When organizing an event, EMC4 will be involved from designing the communication pattern and medium through managing and realizing the event until the

final evaluation. Their role is not as much to foster innovation itself, but rather to help their clients translate changes into something positive for their partners, customers, employees, and others. As change is not always easy to implement due to resistance from inside an organization, EMC4 offers to ease this resistance through positive experiences.

The fifth consultancy firm may be classified as a classic business service. **HRC5** focuses on human resources and recruiting. The main office is based in Barcelona, however they also have a small subsidy in Madrid. The website is available in Spanish as well as English, underlining their global approach. While other consultancies in this field may focus on both human resources developing and recruiting, HRC5 has strategically decided to excel in recruiting, while leaving the later development to others. The website places special emphasis on a competent workforce, claiming that all consultants have a thorough knowledge of different sectors to ensure a deep understanding of the necessities of each of their clients. The extensive network of contacts and potential candidates helps to ensure a quick presentation of adequate profiles to each client. Furthermore, instead of focusing primarily on CV and work place requirements, the company culture and the personal preferences of each candidate are analyzed to ensure a perfect match between candidate and the new job. As well as in all the other consultancies presented in this case-study, HRC5 also offers a general service to its potential clients which is than tailored to their special needs.

Analysis of the Interviews

The five semi-structured interviews included six questions, which were posed to all interview partners. Taking into account the evolution of the interview, some clarifications were added in the course of each question. After completing the interview questions, some general data was asked for, which, however, did not require an extensive answer (such as the percentage of employees with a university diploma). The questionnaire can be found in the annex. This additional information was initially not planned to be taped, however, after the first interview included some more valuable information on workforce strategy triggered by the question on university degrees, the remaining interviews were taped from beginning to end of the individual meetings.

Regarding the content, the six questions can be grouped in three main areas, mirroring the three pillars of the innovation approach, as described in the theoretical part of the paper: the firms' approach to the economic setting in Catalonia, the role of the support system as part of the political framework, and the cultural surroundings manifest especially in the language discussion. Consequently the analysis of the interviews will focus on these three categories. First, the competitive strategies including the workforce policies of the different companies will be discussed. Second, we will have a closer look at the relation to the political framework and the support system, and third, the cultural background and reason for the regional preference will be analyzed.

Competitive Strategies: the One and Only

The five interview partners represented five different consultancies, each focusing on helping their clients optimize one special part of the management process (marketing, innovation management, technology and business management, change management, human resources), without pretending to do any more than this. Thus, when analyzing the individual competitive strategies of the five consultancies, there are some shared strategies and traits which are present in all of them. These strategies can be divided into the following areas:

- organization of work flow
- human resources strategies
- relationship with customers or clients
- incorporation of information and communication technologies

Different from manufacturing companies or firms offering a standardized service, these consultancies do not have a regular work load which can easily be planned or anticipated for the future. On the contrary, work is project oriented, depending on the current amount of customers and projects-in-progress. This includes that they need always keep in mind the acquisition of new projects with already known clients, or getting in touch with new potential clients. As EMC4 points out, this includes that when deciding between devoting resources to look for government services and investing these resources in the acquisition of new projects, the latter might be much more predictable. The internet presence of all companies is one tool to present their services to the broader public, however, most new projects are initiated with already exist-

ing clients who have been very satisfied with the work done in the past, or with new clients who have been referred to the consultancy by an already existing client. The careful adaptation of solutions to each client's exact needs is part of this overall workflow management. As the exact number of projects for the future is unknown, the development of existing projects varies from client to client. Services are highly personalized, giving the client the additional advantage of a fully integrated solution into the already existing structure.

The second factor in common is the importance of the work force as a crucial resource. As opposed to manufacturing companies, these firms cannot replace labour through machines, nor outsource it to other companies, as the employees are one of the reasons for the success of the five firms. All of them have a very high percentage of highly-qualified personnel with university degrees (varying between 75% and 100% of the total work force), and all of them invest in further training for their employees, at least in the area of language training. Additional measures may be in-house training to develop and further knowledge of existing tools and methods, or the funding of opportunities to participate in courses at universities or other entities. All companies recognize that the qualification of knowledge of their employees is ultimately the reason for their clients to stay with them. Thus, employees are constantly encouraged to search for and update their qualifications to increase the overall value of the company's offer.

This is connected to the management of the relationships with existing clients. In all interviews at one point or the other, the long-term character of the relationship with many clients was highlighted, based on values such as trust, confidence, truthfulness, loyalty. The relationship with the client does not end with the conclusion of one project, but hopefully is continued with a project in a related area either directly following the initial project, or taking up renewed commercial relations after some time. This entails a higher importance for both networking and personal relations with each client. Apart from impressing clients with the service delivered, the human interaction needs to be as professional and trust-generating as possible. Only a relationship based on genuine trust in combination with high-quality services will generate future contracts.

A fourth common area among all five consultancies is the incorporation of information and communication technologies, however, the importance and use of these technologies might vary. While MBC1, IC2 and TBC3 directly draw their reason for being from the use of internet, software adaption, and support for the implementation of these ICTs, EMC4 and HRC5 use ICTs as an additional differentiation factor to facilitate and optimize their work. While the other three firms use ICTs as constituent for their self-understanding, these two understand technology as easing day-to-day work without interfering too much with the work itself, which is not directly depending on applying software to clients.

Summarizing these findings, it becomes clear that small service consultancies have to master the uncertainty of individual, project-driven workloads in combination with direct impact of the client's likes and dislikes in their daily performance. Clients do not simply order a service, wait for its completion, and then pay. On the contrary, the client is included at every stage of the evolution of the service to ensure an appropriate fit and to detect possible further project opportunities. This might be the reason why in most cases, the strategic planning is done by the founder and/or CEO. These decisions are very sensible and important, which implies that the owners would not let anybody else do this job. Only TBC3 has already developed a more formalized strategic platform, triggered by the need to optimize shared resources between the Spanish and the Italian subsidies. As the other consultancies are active only in the Spanish market, they do not need a decision organ combining different realities, for example when applying for the ISO 9001 certification for both countries at once.

Another difference is the use of freelancers to support peaks of project work. Out of the five companies, only two would regularly contract freelancers to support the fixed core team: MBC1 and EMC4. The other three would rely on their regular workforce, partly because the workload would not peak as much throughout the year (HRC5), and partly because the profile of the employees is too specialized. TBC3 and IC2 both hire almost only university graduates from technical careers, a profile which is not always easy to find. As TBC3 furthermore requires its workers to have experience working in relevant industrial sectors, they are better off to secure these employees for themselves than risk to loose them to other firms. Hence, a fixed work contract. For IC2 the situation is very similar. Hiring people from technical careers, they need to invest in

training in innovation management for these people. To ensure that these investments pay off in the future, the employees are offered a fixed contract. To cope with peaks in demand, however, EuropeInnova offers internships for university students. As their headquarters is conveniently located near the university, they can take advantage of the students who need to do a mandatory internship or want to have insight into the consultancy business.

MBC1 and EMC4 are thus the two companies which regularly use the help of freelancers to cope with peaks in demand. EMC4 prefers to speak of subcontractors when talking about technical and educational support for their outdoor activities and corporate events. As EMC4 is in charge of organizing these events, it is their responsibility to find a suitable instructor for the more adventurous activities, such as rafting and mountain climbing. Although these instructors are not officially part of the company, EMC4 tends to work with the same subcontractors at each event in the same region, in order to ensure a certain level of stability for these freelancers. The idea behind this regular work is to ensure both motivation and stability for these workers. Somehow, EMC4 is thus reproducing the relationship between itself and its clients, as they also work together with many of the multinational clients on several different occasions.

MBC1 has a slightly different approach to EMC4. The main profile of freelancers is different programmers for programming languages (as C++, php, and others). For strategical reasons, the founders of MBC1 have decided to stay with a 10-person core unit, while outsourcing different programming tasks. Similar to EMC4, MBC1 also repeatedly works with the same freelancers repeatedly, preferring stable relationships while not taking over the responsibility of retaining unnecessary workforce in case of low demand. However, MBC1 does offer almost the same training opportunities to its external partners as well as to its direct employees. As it is also in their interests to be able to work with highly-qualified freelancers, they sponsor courses and training in new software developments. This gives MBC1 the flexibility needed in a quickly changing market with evolving necessities (like new program languages) and changing customer desires. As the internet business evolves, MBC1 is forced to adapt its workforce sometimes quicker than an individual person can update its knowledge, thus it is safer to work with freelancers.

Whether in need of qualified freelancers, or a special highly qualified work force; all five companies have voiced their concerns about finding suitable workers. While in the internet business the main disadvantage is that software and computer languages are faster evolving than the university system can keep up with, others are concerned about the small number of technical career graduates. Consequently, this is the one field, where policy could make a definite difference in the development of these small consultancy companies.

Policy - Self-reliance is the name of the game

While questions about competitive advantages and their specialty vis-a-vis the market resulted in detailed and lively answers, the questions about the general support system and relations with the policy area were answered with much less fervor. This is already the first indicator of a lack of integration between these consultancy firms and the general innovation system. The five firms included in the present sample can be divided into two groups. The three consultancies working with ICT and innovation in a direct way are well aware of support structures of the European Union and the regional and national government alike, while the other two are either not interested or not aware of something like an innovation support system. Both HRC5 and EMC4 have never heard of any support schemes whatsoever that would be interesting for their field of work. Concerning indirect matters, such as the general policy framework, both would prefer a more interdisciplinary university education of graduates, and a regular update of university curricula. Especially where software is concerned, universities seem to lack the implementation of new developments into their standard curricula.

For EMC4 the general framework is characterized by over-regulation when comparing event management to other sectors. They have heard about support for small enterprises, however, after an initial interest, the company decided to use resources for the acquisition of new clients instead of trying to present a project to a government body. The bureaucracy, in combination with a certain lack of transparency and the perceived competition with industrial companies, have led to a general disinterest in offers from an official policy side. EMC4 is more concerned with the qualification of the labour force in Catalonia and the lack of labour mobility within Spain. The ongoing competition between the autonomous regions, e.g. Madrid and Catalonia, for multinational

companies further deepens this mistrust. When working with or for government institutions or related bodies, there always seems to be the risk of political instead of economically-sound decisions. This mistrust in official government bodies, both at the regional and national level, might be due to a certain discourse of rivalry between government parties, regions, and decision makers in general. This will be further discussed in the next subchapter.

MBC1, IC2 and TBC3 have had experiences with support programs, especially funding opportunities, although not all of them have been successful in the application process. IC2, the innovation consultancy company, as a matter of business, has lots of experience with support programs. As their main work focus is the support of other companies to use the official support options, the consultancy is always up-to-date on opportunities and new programmes in the field of innovation support. It is thus interesting to find that both IC2, TBC3 and MBC1 see the same difficulties when it comes to support schemes for small service companies, especially from the consultancy sector. First of all, there are no programmes exclusively designed for this sector. On the contrary, sometimes they are even excluded from presenting their projects as there are programmes only for manufacturing firms. Whenever the call for projects is open to service companies as well as industrial companies, the competition is very difficult to overcome, as the decisive body who ultimately offers the grant is usually not very familiar with the service sector. As both TBC3 and MBC1 point out, "if we had our own software product, this would be different". Apparently consultancy firms are trapped between not offering a totally standardized product or service, and not offering innovation by themselves. Rather, their work is to help other firms implementing solutions which are already there, but which have to be adapted to the concrete circumstances. Consultancy firms could thus be considered midwives for innovation and successful management, which however is not considered in any support schemes. Furthermore, those funding opportunities that do offer funding for service industries, are usually co-financed to a very high percentage which makes it unlikely for companies to invest resources for an application process with very uncertain outcomes.

While IC2, as an expert in innovation support schemes, is more concerned about bias in decision making faced by service companies ("industrial projects are technically more beautiful"), TBC3 and MBC1, as well as EMC4, criticize the lack of transparency

in decision making. While officially European initiatives are seen as rather reliable, both the national and the regional level are considered highly in-transparent, led rather by political than economic considerations. This underpins the reluctancy to even look for information on supporting schemes that could be interesting for business services. It seems that besides suitable programmes and a transparent decision making processes, a general strategy is needed to inform service companies that innovation is important and that their initiatives are also worth getting support. However, this also needs to entail a new analysis of how to evaluate the role of business services in the innovative process. While they might not invest much in R&D to develop new software products or production methods, their crucial participation consists of *helping others to innovate*. Through facilitating change management, the implementation of new management software systems, innovation management and committed long-term employees (in a country where only 20% of all employees have an indefinite work-contract (Annuari Estadtisic), business services do have an important share of the innovation capacity of a region. TBC3 points out how this would be an important topic to include in analysis for further advancement of innovation policies in Catalonia.

Glocalization - The role of the Region

The preceding subchapter has shown that the policy support offered in Catalonia only plays a marginal role for business services in the region. The profound mistrust toward government agencies and support bodies does not offer a sufficient explanation for Catalonia's relatively high score when compared to other Spanish (and even European) regions. Two other questions were thus aimed at finding out the reasons to choose this region rather than another one, which typically would be Madrid. Almost 40% of all business services registered in Spain are either located in Madrid (19.7%) or Catalonia (20%), while 57% of the turnover in this sector is generated in these two *comunidades autónomas* (35% in Madrid, 22% in Catalonia), leaving the remaining amount to be divided between another 15 *comunidades autónomas* (INE 2008).

Interestingly, the main answer of all five companies was foremost personal reasons of the founder(s), such as family situation, followed by the high quality of living in Catalonia, and especially the metropolitan area of Barcelona. The founders, including most of the employees of all firms, are from the region, which entails a strong bond with

and knowledge of the local situation, plus the advantage of a network of friends and family. As summarized by Tidd et all (2002), these are crucial resources when founding a company, as especially during the first years the entrepreneur will draw on his/her personal network to achieve success. For Catalonia this might mean that the region has a higher amount of entrepreneurs than other regions, as the region did not attract these entrepreneurs from elsewhere, but rather triggered an entrepreneurial behavior in someone already present in the region. The sample of firms analyzed for this paper is much too small to extrapolate these conclusions. However, it might be an interesting question for further research, whether or not there is a cultural trait such as entrepreneurship which is more manifest in some regions than in others.

Certainly, once the company is established in Catalonia, it is likely to stay. As soon as valid networks are established, the acquisition of new clients is successful to a point that word of mouth propaganda is up and running, then the company is unlikely to relocate, not even to the ever competing region of Madrid. Some of the companies have decided to set up a subsidiary in Madrid to mark their presence vis-a-vis multinational companies that prefer to have their headquarters in the capital. However, these subsidiaries are usually small, offering work for 1-3 employees (MBC1, HRC5), or they are only a possible strategy for the future (EMC4). All recognize that Madrid is the more dynamic surrounding, however, also with more competition. The headquarters of clients who are usually in charge of financial decisions for their subsidies in Catalonia, are usually in Madrid. Nevertheless, the unique mix of quality of life, technological leadership in Spain, and a comparative high amount of multinational companies, makes Catalonia still a little bit more attractive than the Capital.

EMC4 points out, that Catalan enterprises still have the advantage of national prejudices, which in this case work in favor of the Catalan economy. Catalans are seen as "more European" than other firms from Southern or central Spain. Values such as quality, dedication, and efficacy are automatically ascribed to entrepreneurs from Catalonia, which also opens doors elsewhere. On the other side, Catalans are also seen as serious, quiet and not very friendly, however, for economic transactions, this seems to work in the region's favor rather than against it.

Another difference between Madrid and Catalonia is the accessibility of potential clients. The root of the above mentioned "seriousness" of Catalan enterprises might be

due to a more cautious treatment between each other. MBC1, with its technical office in Madrid, yet the core business in Barcelona, points out that it is much more difficult to get into a Catalan enterprise. However ,once in economic relations, the relationship is likely to be long-lasting and highly likely to generate more projects.

In the end, however, it is the personal preference of the owner that guides the final decision of where to locate each consultancy. Personal networks, economic networks, and a high quality of life, which might attract high-qualified personnel despite comparatively lower wages are all reasons to stay in Catalonia, once the main office is set up in the region. Whenever high-qualified and contested (?) employees are sought,, the location is one advantage used to attract human resources. The newly implemented high-speed train connection between Madrid and Catalonia via the AVE, reducing the trip from central Barcelona to central Madrid to 3 hours, further encourages people to stay in Catalonia, even though business contacts to Madrid might exist. HRC5, which opened a subsidiary in Madrid to keep in touch with its clients from the region, is even reconsidering this small office, as new technologies close the gap between real and virtual presence via video conference.

Apart from the availability of necessary resources such as a qualified workforce, potential candidates (HRC5) or providers (EMC4), Catalonia is marked by another specialty within the Spanish territory. The *comunidad autonoma* has two official languages: Catalan and Spanish. While the political discourse is marked by a constant rivalry between these two languages, the interviews indicate otherwise. Unanimously, the five interviewees consider the Catalan language to be an additional tool which facilitates communication with Catalan-speaking clients, however, in the same amount as English helps with international clients. IC2 and EMC4 conduct their business almost exclusively in Catalan, if the client does not request otherwise, as their main market is Catalonia. HRC5 and MBC1 work in Catalan and Spanish, which is mainly due to their subsidy in Madrid, where Catalan is not necessarily spoken and written fluently. Only TBC3 has recently switched to English as the official company language in order to mainstream Italian and Spanish processes. However, within the company, English, Spanish and Catalan are used equally.

The Catalan entrepreneurs of this case study thus use the Catalan language as a communication tool, nothing more or less. Using Catalan or not does not imply any politi-

cal statement, but is used to make the client more comfortable. On the other hand, however, this makes the language certainly a competitive advantage. When choosing between a bilingual company (Catalan and Spanish) and a Spanish-only company, many clients would probably choose the former one, for the simple fact of being more comfortable articulating their needs in their mother language. The question if this is an asset or a problem for the regional innovation system is not relevant for these companies. As small companies usually operate on a regional level, they certainly take advantage of their own language. But this is natural and in Catalonia's case it does not seem to prevent these consultancy firms from doing their business. Spanish clients are still welcome, and the Spanish-only competition is less severe.

Wellman and Hampton (1999) define this behaviour as *glocalisation*, as Catalan enterprises do not think completely local, nor do they focus entirely on a global market. Strategies and communication models are adopted as demanded by the situation. Although this behavior does not sound very positive from the outside, inside Catalonia this is competitive advantage. While the knowledge of Spanish opens up the entire Spanish market for customer acquisition, the additional use of Catalan tightens the market for competitors from outside Catalonia. The interviewed consultancy firms are consequently more than happy with their bilingual situation.

Business Services and Innovation

After this detailed overview of the five interviews, it is now time to put the findings into perspective. Recalling the model on innovation in services by den Hertog (2000), presented in Chapter 1, an attempt to structure the innovation strategies of the five enterprises can be done. Den Hertog assumes four ideal areas of innovation in services: generating new service concepts, a

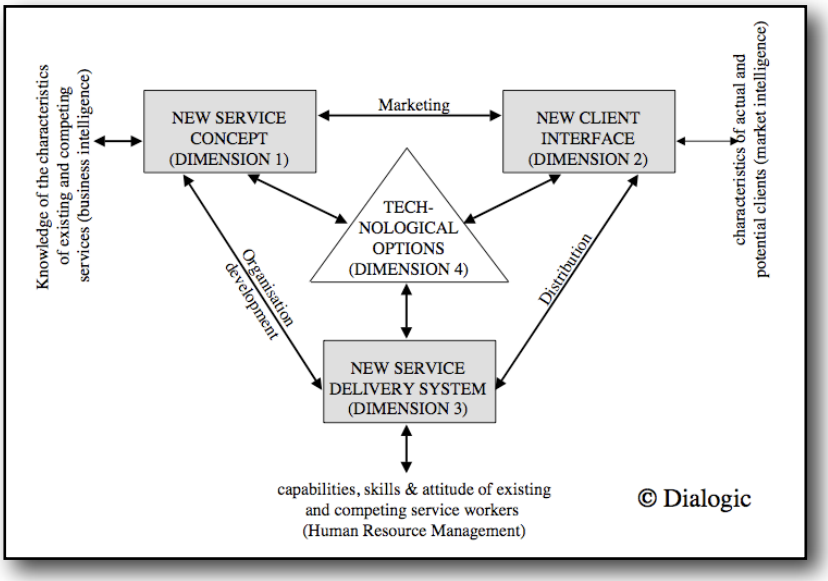

Exhibit 19: Innovation in Services. Hertog 2000: 495.

new client interface, a new service delivery system, or introducing new technological options. Although usually competitiveness is based on a mix of these options, nevertheless an inclination of individual enterprises to either one or the other can certainly be detected.

It is possible to divide the sample in this paper into two groups. The first group concentrates its competitive advantages in dimension 1, generating new service concepts usually in combination with the use of new technological options (dimension 4). These groups include the marketing and internet consultancy *MBC1*, the innovation service consultancy *IC2*, and the innovation / communication technology / business consultancy *TBC3*. All three are constantly scanning the regional availability of competing services and assess the possibilities to take advantage of regional offers. The solutions offered to their clients are highly individualized and the service offer is expanded as new client demands arise or new opportunities enter the market. In this group of enterprises, knowledge is of crucial importance for the services themselves.

The second group includes the corporate event management consultancy *EMC4* and the human resources consultancy *HRC5*. Both consultancies offer a relatively stable service, whose core characteristics do not differ substantially between clients. The strength lies in the details (such as where to host the event or which profile to search for), which are adjusted according to the client's wishes. Consequently, the capabilities and attitudes of employees is the most important asset. Within the model, both dimension 3 (new service delivery system) and dimension 2 (new client interface) are the two relevant fields of innovative activity. Knowledge is thus of crucial importance for the processes behind the service offers.

Independent of whether knowledge is needed for the service itself or for the organization of a more standardized service, the employees and their skills are the main concern of all five companies. Does Catalonia then have a working innovation support system taking into account the needs and necessities of local business service enterprises? Based on the interviews, the answer is twofold. On the one hand, not all companies seem to be aware of an official support system or policy intervention in their favor. The main problem seems to be the lack of possibilities adjusted to the needs of service companies, in combination with a lack of information for small enterprises

that do not want to bear the additional costs of extensive research for support schemes.

On the the other side, the framework system seems to work relatively positively. Although critiism has been aimed at university curricula and heavy bureaucracy in some areas, the fact that Catalonia is such a thriving region counts in favor for local policies. At least they do not substantially obstruct enterprises in their work. Even the unequal distribution of skills in the workforce (only a small part has medium skills, while both the percentage of low-skilled and high-skilled labour is above average) seems not to have a negative impact on knowledge-intensive business services so far, as they mainly recruit their labour from the high-skilled strata of the work force.

A good starting point for reviewing the entire support system of Catalonia could thus be a reassessment of the general framework. Universities should not only engage in R&D for software and technological firms, but also use resources to constantly develop their educational tasks. A constant flow of highly-qualified workforce is crucial to the success of consultancy firms. Entrepreneurs have usually worked in other consultancy firms before opening their own business, which underlines the importance of fostering local ideas instead of trying to import from elsewhere. Especially small enterprises usually come from within a region, staying there instead of relocating to other regions just because of lower labour costs or a more favorable tax system. While multi-national companies have no strong ties to their place of work, small companies are usually embedded in various personal and economic networks, which ensure a strong attachment to the region in question.

The policy of the Catalan authorities to issue calls for projects and programmes in Catalan, and to expect firms that want to work with the public sector to make their proposals in Catalan, might look very narrow-minded from a Madrid, or Extremadura point of view. However, for a regional government that is interested in fostering the regional economy more than foreign firms, this is a perfectly valid reason to ensure that support measures go to companies that are from the region, or that have invested enough into the local language as to stay here (Sternberg / Arndt 2001). After all, the Catalan government has the Catalan economy foremost in mind, and not the Spanish one.

Nevertheless, the programmes may work even better taking into account the necessities of business services. One trait of these services is the low engagement in R&D, while working more on already existing solutions and helping bigger enterprises to implement those. More data and more research are need to assess the impact of business services in the work of innovation management in so-called "innovative firms". Only if this impact can be measured correctly will the real contribution of business services become apparent. The "midwives" of innovation may not be the creators of the baby, but they are necessary for a risk-free pregnancy and a safe delivery.

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Concluding Remarks: the Wooden Chair

The aim of this paper was to find out if and how small knowledge-intensive business services take advantage of the location and support policies of their headquarters. The first part of the paper, divided into three chapters, has set the background for the case studies in the fourth chapter. This strategy has the advantage of analyzing different aspects of the interplay between innovation on the micro-level (enterprises) and innovation support from the macro-level (government agencies), without loosing sight of the picture as a whole.

Innovation sometimes just happens. Innovation entails change. Innovation requires ideas, new ways of doing things, thinking outside the box, perseverance, and sometimes even recklessness. But when it is to be used to help a whole economy flourish through the creation of new work places, new ways of production, and competitive margins leading to a higher level of welfare within a region, it needs something more. There needs to be a critical mass of innovative enterprises, which can rely on sound policies and a stable political framework, backed by a culture that supports local entrepreneurship and innovative capacity. These are the three legs of the wooden stool of competitiveness presented in the introduction. Together they sustain the base of competitiveness.

Wooden stools were usually sturdy (not necessarily beautiful, but always practical) devices, with three legs for maximum stability, each one forged from one piece of wood, using the strength of the natural fiber to support all kinds of stress placed on the material. All these three legs are important to give the innovative activity the stability and the sustainability necessary for something more than just a short interval. Just like the stool, it is impossible to judge which of the three legs is actually the most important one.

In this context it is important to keep the bigger picture in mind. Especially today, where innovation policy is en vogue for many policy makers, many programmes are initiated and implemented without taking into account the actual way smaller enterprises do business (both in industries and services), nor accounting for cultural and geographical peculiarities. This results in a "longer leg" of policy, than the other two supporting legs. However, while three-legged stools are the most stable ones, the three

legs need to contain a certain equilibrium. Only in their totality do they offer a secure support, which also means that the one-sided support of one of the three legs will not lead to more success, but rather to a one-sided platform, which will not be able to foster sustainable competitiveness.

The case study based on the interview with five representatives of business services underscores this evaluation. The interview questions were targeted at highlighting the opinion of the interview partners on each of the three "legs", mainly their own competitiveness in a fast-changing economical environment, their perceptions of the general support system, and the importance of the region in which they work. The answers have shown that small business services in Catalonia are able to find their own niches in a competitive market, however, that they do not take advantage of targeted policy programs. The general framework is much more important to them. As business services, and particularly small business services usually specialize in their core competencies, it is difficult to design a program targeted at this highly diversified sector. Consequently, the broader framework such as a highly-skilled labour force and a well-developed infrastructure are of much broader interest and might have a more important impact on a higher number of enterprises.

The cultural traits of the region also play an important role for each of the interviewed enterprises. The stereotype of Catalan companies as hardworking business partners might benefit these companies in their quest for more Spanish clients. On the other side, the broad diffusion of the regional language represents a strong advantage for native enterprises vis-a-vis their competitors from other regions. However, although the featured companies use the regional language on a day-to-day basis with their business contacts, they do not support the strong political discourse portraying Spanish and Catalan as either-or options. Both languages are merely seen as tools for successful communications without any political statements attached to the use of either one.

This is where the metaphor of the wooden stool falls short of reality. Wooden stools are made once, and then used for a lifetime without modification. Their legs do not grow by themselves, nor can the owner consciously decide which leg to support for more steadiness. The "legs" of the economy's competitiveness however may well be re-adjusted and improved for more sustainable support of innovative capacity. However, all three aspects need to be taken into account.

In the context of this paper this points to the danger of overrating policy actions without taking into account cultural or micro economic arguments. Actually, overrating any of the three legs leads to an imbalance, which very likely has negative repercussions on the whole system. A stress on the importance of culture might lead to a cultural determinism which in the long run paralyses the development of the region in favor of maintaining the true identity of the region. While this might be a good strategy for regions primarily engaged in tourism, for a diverse economy such as Catalonia this would probably do more harm than good.

Focusing only on the policy area also is a task which has to be managed with caution. Considering the fashion of benchmarking regions against each other within the European Union, there should always be a second level of reflection in place. Politicians might be inspired to simply copy what they have seen elsewhere without adapting it to their own region. However, just as the innovation system approach tries to stress through the systemic analysis of a given area, it is the interplay of all factors that results in a more or less competitive region. Policies can fine-tune some of these factors, but the results are always uncertain, and they are the more uncertain, the more specific the policy aim is.

The initial question, whether small enterprises in the business service sector in Catalonia needed more targeted action, or would rather benefit from a broader approach strengthening the overall framework, can thus be answered affirmatively. Businesses in Catalonia working in the service sector are used to making their own way, with sometimes even showing a certain mistrust of all government agencies. While this hinders the diffusion and implementation of targeted programs, this trait is the crucial ingredient for a positive repercussion of general framework policies. A better educational system, resulting in a higher qualified labour force, would probably have a much broader impact on all kinds of knowledge-intensive business services than any targeted funding program. Additionally, the benefits of this appreciation of a resource needed by all sectors would not be restricted to only one targeted part of the economy, but most likely benefit a much broader number of enterprises, regardless of the sector.

SOURCES

AEC/07. *Annuari Estadístic de Catalunya 2007*. Barcelona: Idescat 2007.

Ahedo Santisteban, Manu. *Business Systems and Cluster Policies in the Basque Country and Catalonia* (1990-2004). In: European Urban and Regional Studies 13 (2006) 1: 25-39

Anxo, Dominique / Donald Storrie (ed). *The Job creation potential of the service sector in Europe.* European Comission: Employment and European Social Fund. Brussels 2000.

Anxo, Dominique / Donald Storrie (ed). *The Job creation potential of the service sector in Europe*. European Commission: Employment and European Social Fund, Brussels 2000.

Arundel, Antonhy / Minna Kanerva / Adriana van Cruysen / Hugo Hollanders. *Innovation Statistics for the European Service Sector.* Inno Metrics: UNU-MERIT. 2007

Asheim, Bjørn T. / Meric S. Gertler. "The Geography of Innovation - Regional Innovation Systems", in: Fagerberg, Jan et. al. *The Oxford Handbook of Innovation.* Oxford University Press 2005. 291-317.

Bacaria, Jordi / Susana Borràs Alomar / Andrea Fernàndez-Ribas. "The changing institutional structure and perofrmance of the Catalan innovation sytem", in. Philip Cooke / Martin Heidenreich / Hans-Joachim Braczyk (ed). *Regional Innovation Systems: the role of governance in a globalized world.* New York: Routledge 2nd ed. 2004. 63-90.

Barras, Richard (1986). "Towards a theory of innovation in services" in: *Research Policy* 15 (1986) 161-173.

Barry Wellman and Keith Hampton, "Living Networked On and Offline", in: *Contemporary Sociology* 28, 6 (Nov, 1999). 648-54.

Berman, Harold J. *Law and Revolution: The Formation of the Western Legal Tradition.* London: Harvard University Press, 1985.

Berman, Harold J. *Law and Revolution II. The Impact of the Protestant Reformations on the Western Legal Tradition*. London: Harvard University Press, 2003.

Brugué, Quim, Ricardo Gomà, Joan Subirats. "Multilevel Governance and Europeanization: The Case of Catalonia", in: Kevin Featherstone (ed). *Europeanization and the Southern Periphery.* London: Cass 2001. 95-118.

Buesa, Mikel/ Joost Heijs, Mónica Martínez Pellitero, Thomas Baumert. "Regional Systems of Innovation and the knowledge production function. The Spanish case", in: *technovation* 26 (2006) 463-472.

Brunkhorst, Hauke. *Recht und Revolution in der Weltgesellschaft.* Flensburg: unpublished, 2007.

CIDEM: *La gestió de la innovació en empreses de serveis*. Barcelona 2007.

Cohen, Wesley. M / Daniel A. Levinthal. "Absorptive Capacity: A New Perspective on Learning and Innovation", in: *Administrative Science Quarterly,* 35 (1990): 128-152.

Commission of the European Communities. *Fostering Innovation in Services. Final. A Report of the Expert Group on Innovation in Services.* Brussels 2007. Online available http://europe-innova.org/servlet/Doc?cid=9577&lg=en , 2008-09-01.

Commission of the European Comunities. *Definition of SMEs.* online available: http://ec.europa.eu/enterprise/enterprise_policy/sme_definition/index_en.htm , 2008-09-01.

Cooke, Philip. "Regional innovation systems - an evolutionary approach", in. Philip Cooke / Martin Heidenreich / Hans-Joachim Braczyk (ed). *Regional Innovation Systems: the role of governance in a globalized world.* New York: Routledge 2nd ed. 2004. 1-418

Cooke, Philip / Olga Memedovic. *Strategies for Regional Innovation Systems: Learning Transfer and Application.* Vienna: UNIDO 2003.

Cooke, Philip / Mikel Gomez Uranga / Goio Etxebarria. "Regional Innovation Systems: Institutional and organisational dimensions", in: *Research Policy*. 1997, No. 26, S. 475-491.

Cooke, Philip/Loet Leydesdorff. "Regional Development in the Knowledge-Based Economy: The Construction of Advantage", in: *Journal of Technology Transfer*, 31 (2006), 5-15.

Cowell, Donald. W. "New Service Development", in: *Journal of Marketing Management*, 1988 (3) 3, 296-312.

Den Hertog / Pim. "Knowledge-intensive business services as co-producers of innovation", in: *International Journal of Innovation Management* 4 (2002) 4, pp. 491-528.

Edquist, Charles. Systems of Innovation. Perspectives and Challenges. In: Fagerberg, Jan et. al. *The Oxford Handbook of Innovation.* Oxford University Press 2005. 181-208.

Encinas, Haro / Jesus Armando. *La Rosa custodiada. Participación ciudadana y gestión pública en Reus 1999-2003*. Tarragona: URV. 2004

Etzkowitz, Henry, Loet Leydesdorff. "The dynamics of innovation: from National Systems and "Mode 2" to a

Triple Helix of university – industry – government relations", in: *Research Policy* 29 (2000) 109-123.

European Commission. *European Trend Chart on Innovation. Annual Innovation Policy Trends and Appraisal Report Spain 2006*. Brussels 2007. online available: http://www.proinno-europe.eu/ , 2008-09-01.

Fagerberg, Jan / David C. Mowery / Richard R. Nelson. *The Oxford Handbook of Innovation*. Oxford University Press 2005.

Eurostat. *Statistics on Innovation in Europe - Data 1996-1997.* European Union: 2001.

Gadrey, Jean / Faïz Gallouj / Olivier Weinstein. "New modes of innovation. How services benefit industry", in: *International Journal of Service Industry Management* 6 (1995) 3, 4-16.

Gallouj, Faïz / Olivier Weinstein. "Innovation in Services", in: *Research Policy 26* (1997), 537-556.

Garcia i Inglés, Romina. *La terciarització de la indústria a Catalunya. Cap a una nova definició del sector industrial.* Barcelona: Acc10 CIDEM-COPCA. 2007.

Gazier, Bernard / Nadine Thevenot. "Analysing business service employment - some theoretical and methodological remarks", in: Anxo, Dominique / Donald Storrie (ed). *The Job creation potential of the service sector in Europe.* European Commission: Employment and European Social Fund, Brussels 2000. 239-263.

Generalitat de Catalunya. *Statute of Autonomy of Catalonia from 1979,* Barcelona 1979, online available: http://www.gencat.cat/generalitat/eng/estatut1979/index.htm , 2008-09-01.

Generalitat de Catalunya. *Statute of Autonomy of Catalonia from 2006,* Barcelona 2006, online available: http://www.gencat.net/generalitat/eng/estatut/index.htm , 2008-09-01.

Gobierno del País Vasco: *Uso del Vasco*. Online available: http://www1.euskadi.net/euskara_adierazleak , 2008-09-01.

Gustafsson, Anders / Michael D. Johnson: Competing in a Service Economy. *How to Create a Competitive Advantage Through Service Development and Innovation.* San Francisco: Jossey-Bass 2003.

Holbrook, Adam / Monica Salazar. "Regional Innovation Systems within a Federation: Do National Policies affect all regions equally?" Paper submitted to the Conference *Knowledge and Economic and Social Change: New Challenges to Innovation Studies*, Manchester: 2003.

Howells, Jeremy. "The Nature of Innovation in Services", in: OECD. *Innovation and Productivity in Services*. 2001. 55-79.

Instituto Nacional de Estadísticas. *El sector servicios en España y la Unión Europea. Las estadísticas de los servicios. Madrid: Instituto Nacional de Estadisticas.* Cifras INE 2002/5.

Instituto Nacional de Estadística. *Encuesta Anual de Serivcios 2006*. Available online: http://www.ine.es/jaxi , 2008-09-01.

Kandampully, Jay. *Innovation as the core competency of a service organisation: the role of technology , knowledge and networks.* In: European Journal of Innovation management 5 (2002) 1, 18-26.

Keating, Michael: "Rethinking the Region. Culture, Instituions and Economic Development in Catalonia and Galicia", in: *European Urban and Regional Studies* 8 (2001) 3, 217-234.

Keating, Michael (1997). "The political Economy of Regionalism", in: Michael Keating / John Loughlin (ed): *The political economy of regionalism.* London: Frank Cass & Co Ltd. 1997, 17-40.

Lundvall, Bengt-Åke. "National Business Systems and National Systems of Innovation", in: *International Studies of Management and Organization* 29 (1999) 2, pp. 60-77.

Lundvall, Bengt-Åke. "National Innovation Systems - Analytical Concept and Development Tool", in *Industry and Innovation* 14 (2007) 1, 95-119.

Lundvall, Bengt-Åke, Susana Borrás. "Science, Technology, and Innovation Policy", in: Fagerberg, Jan et. al. *The Oxford Handbook of Innovation.* Oxford University Press 2005. 599-631

Maier / Jörg, Frank Obermaier. "Die Bedeutung des "supporting space" für Innovationsverhalten und Netzwerkbildung von kleinen und mittleren Unternehmen", in: Jörn-Axel Meyer (ed). *Innovationsmanagement in kleinen und mittleren Unternehmen.* München: Vahlen 2001. 39-54.

Malmberg, Anders / Örjan Sölvell / Ivo Zander. "Spatial Clustering, local accumulation of knowledge and firm competitiveness", in *Geografiska Annaler. Series B, Human Geography* 78 (1996) 2, 85-97

Miles, Jan. I"nnovation in Services", in: Jan Fagerberg / David C. Mowery / Richard R. Nelson. T*he Oxford Handbook of Innovation.* Oxford University Press 2006, 433-458.

N.N. *The American Heritage® Dictionary of the English Language,* 4th ed. 2000 by Houghton Mifflin Company. 2003.

Oke, Adegoke. "Innovation types and innovation management practices in service companies", in: I*nternational Journal of Operations & Production Management.* 27 (2007) 6, 564-587.

Pilat, Dirk. "Innovation and Productivity in Services: State of the Art", in: OECD. *Innovationand Productivity in Services.* 2001. 17-54.

Porter Liebeskind, Julia. "Knowledge, Startegy, and the Theory of the Firm", in: *Strategic Management Journal* 17 (1996), 93-107.

Riba Vilanova, Marta / Loet Leydesdorff. "Why Catalonia cannot be considered as a regional innovation system", in: *Scientometrics* 50 (2001) 2, 215 - 240.

Ribera, Jaume / Xavier Ferras / Eugeni Terré. *Promoting innovation in SME's.* Barcelona: CIDEM 2002. online available: http://www.cidem.com/cidem/binaris/Paper%20eurom a%202002_tcm48-12671.pdf , 2008-09-01.

Rondé, Patrick / Caroline Hussler. "Innovation in Regions: What does really matter?", in: *Research Policy* 34 (2005) 1150-1172.

Schumpeter, Joseph Alois. *Theorie der wirtschaftlichen Entwicklung: eine Untersuchung über Unternehmergewinn, Kapital, Kredit, Zins und den Konjuntkturzyklus.* 8th edition. Berlin: Duncker & Humblot, 1993.

Sternberg, Rolf/ Olaf Arndt. "The Firm or the Region: What Determines the Innovation Behaviour of European Firms?", in: *Economic Geography*. 77 (2001) 4, pp. 364-382.

Tidd, Joe / John R. Bessant / Keith L.R. Pavitt. *Managing innovation: integrating technological, market and organizational change.* 3rd ed. Chichester: Wiley. 2005.

UMIST (2003). Knowing how, knowing whom. A study of the links between the knowledge intensive services sector and the science base. University of Manchester.

Xunta de Galicia: *Uso del Gallego*. Online available: http://www.xunta.es/lingua#competencia , 2008-09-01.

Zabala-Iturriagagoitia, Jon Mikel / Fernando Jiménez-Sáez, Elena Castro-Martínez, Antonio Gutiérrez-Gracia. "What indicators do (or do not) tell us about Regional Innovation Systems", in: *Scientometrics* 70 (2007) 1, 85-106.

Questionnaire

Introduction

First of all, thank you very much for granting this interview. As I have told you when scheduling this interview, I am currently doing a Master's degree in European Studies, researching on the innovativeness of the Business Service sector here in Catalonia. I am interested in understanding how enterprises in B2B services, such as consultancies, marketing firms, banks etc. remain competitive in this highly competitive environment and how they relate to the region and its specific conditions.

For this purpose I have prepared five relatively open questions, which you are invited to answer as extensive as you choose to. The interview will be taped, however all personal data an specific enterprise information will be made anonymous during the transcription of the interview. Furthermore, you will get a copy of the written transcription and may still add further comments until DATE .

Is this all right with you (record answer)

Questions

1) The new information and communication technologies have resulted into a fast-changing environment, especially for enterprises offering services to other firms. How do you ensure the competitiveness of your particular enterprise?

(record answer)

2) Labour can be either interpreted as a cost, or as a resource. How does your enterprise interpret its labour force and which are your strategies to either reduce costs or get an extra value-added from this resource?

(record answer)

3) The European Union encourages states and regional governments alike to foster innovation through programmes and the availability of information on related topics. What is your perception of the support offered by the Generalitat, the Spanish Government and the European Union to enterprises like yours?

(record answer)

4) Does your company have any relations to the universities, R&D agencies or regional innovation supporting agencies (like CIDEM)? How have your experiences been/Why not?

(record answer)

5) Catalonia is a very special province in Spain with a distinctive character and a very active government. Which were the particular reasons for this enterprise to locate es-

pecially to this region and which opportunities and challenges do you encounter today?

(record answer)

6) The autonomous community of Catalonia has two official languages: Catalan and Spanish. What has been your experience with these two languages and how important are they to your business?

(record answer)

Quick info on the company (if not clarified through interview)

What does the company work with:

When did the company come to Barcelona:

Is your company independent or a subsidiary of another company? (Spanish or international?):

How many employees does the company have: __, with university degree (approx.): ___

Does the company has a specific department for innovation and strategy: yes / no

Is the company member in a networking organization? If yes, which: _____

Which is the main company language: Spanish / Catalan / English / Other

Commitment / Verpflichtungserklärung

English

I am fully aware that all sources must be accurately cited.

I hereby confirm that I alone have written this paper and that I have not used any other means or resources other than those cited in the table of references. This includes information available on the internet.

I have read and fully understand the paragraphs pertaining to the examination regulations for the Universitaet Flensburg concerning the rules and regulations regarding fraud.

I herby agree to my paper being stored for purposes of inspection and control.

Flensburg, September 26th, 2008

Valentina Thörner da Cruz

German

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Ich stimme der Speicherung schriftlicher Arbeiten von mir zum Zweck der Kontrolle zu.

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Valentina Thörner da Cruz