

An alternative proposal for regional European innovation policy: Cooperation of SMEs with knowledge-intensive services in innovation networks

ABSTRACT

Innovation policy in the European Union (EU) comes to a result; its policy goal to become the most innovative region in the world until 2010 failed, primarily concerning the Small and Medium-sized Enterprises (SMEs). Thus, the purpose of this paper is to introduce my proposal in terms of an alternative innovation policy across EU member states. In few words, Innovation networks that are dominated by SMEs could become more innovative by integrating Knowledge-intensive Business Services (KIBS). Innovation networks would allow problems to be solved, transcending the disadvantage of SMEs in the innovation process. Regional actors and regions are recommended to initiate and foster the afore- briefly - mentioned network relation.

Introduction

My paper aiming to examine the proposal for a different innovation policy seems prima facie neither groundbreaking nor does it invent completely new concepts. SME, KIBS and innovation networks belong already in the core of the EU approaches on innovation policy. Main concern therefore, is that a critical dialogue regarding those ideas barely took place. Testing requirements and being aware of the fact that markets with respect to innovation processes is no panacea should be the first step of innovation policy thoughts, making the policy analysis in an “alternative” perspective worthwhile. It is preferred that discussions about innovation policies take place in light of concepts that could have a positive effect in the whole EU and their principal purpose would not be just to strengthen and conserve already existing economic conditions. The current European innovation policy, though, seems to be based on an approach that excludes from consideration the economic development that emerged along with the crisis.

The unemployment rate in Europe has been increased systematically since the beginning of the banking and Euro crisis. The average of 10.9 percent in the EU28 and in the Euro Zone 17 with 12.0 percent indicates that with no doubt a fundamental problem for the EU in whole exists. In more accurate lines, the European nature of the problem can be seen clearly in case of a distribution analysis of the unemployment rates. Germany as the biggest economy has only around 5 percent in comparison to Spain and Greece with more than 25 percent. Underlining the risk for the whole economy, around 5.5 million persons under 25 with shocking numbers over 50 percent in Croatia, Greece and Spain describe as a situation where economic problem becomes a risky issue for the stability of societies. You can see shift from a temporal issue into a structural disaster.¹

Just considering the description of the above mentioned statistics, it could be easily assumed that high rates of unemployment influence solely the southern part of the EU. Taking one step beyond, the so-called PIGS (Portugal - Italy - Greece - Spain) could be accused of improperly handling their economies.² But taking a closer look, one would end up with explanatory circumstances that affect almost all European states. The level of academic education and the number of obtained university degrees both in Greece and Spain, for instance higher than the EU average constitutes an aspect that should not be put aside.³ In addition to that, the trend for more young people to achieve a university diploma is observed in all European countries. Despite its political reasons, this phenomenon goes hand in hand with the demographic change that leads to a shrinking pool of employees.

A debate in Germany resulted in the popular opinion that Germany has a tendency of over-qualification and need to emphasize the significance of “going back” to professions that do not require university education.⁴ The

1 Data from the European Commission.

2 Lewus-Beck, Michael/ Nadeau, Richard: PIGS or not? Economic voting in Southern Europe, in: Electoral Studies 31 (2012), 3, S. 472 - 477.

3 According to the online database of Eurostat.

4 FAZ (2013).

originators and supporters of this theory have good arguments and to disqualify this debate is not my aim, but attention should be drawn to the fact that in case artificial study limits are not imposed or a social turn in the personal willingness to climb on the education levels, getting university degrees, does not happen, then the European economies probably will need to alter their ability to absorb the higher and higher number of qualified employees.

There is a need not only to highlight the risks but also to show the chances of the qualified upgrading. It leads to the second field of policy that can be affected by the integration of academic work power – innovation policy. The innovativeness of the EU in comparison to other parts of the world shows a disadvantage. With emphasis to the US dynamic economy which presents a competitive advantage, during the last years the innovation gap between EU and the competitor was impossible to be expunged.⁵

Innovation, as presented in this paper, reflects the definition of the OECD Oslo manual. “It goes far beyond the confines of research labs to users, suppliers and consumers everywhere – in government, business and non-profit organizations, across borders, across sectors, and across institutions”⁶ This broad definition of the OECD includes the categories of product innovations, process innovations, marketing innovations as well as organizational innovations.

The distribution of the innovative potential shows characteristic features similar to the unemployment rates in the EU. A massive difference is once again detected between Southern and Northern countries. This is not only an effect caused by the current crisis but it has also sharpened the already existing disparate condition for innovation processes. Starting point of this analysis is the survey of the OECD, disclosing that 13 percent of the OECD member regions spent more or less half of the overall budget of the OECD R&D expenses.⁷ In other words, “stronger regions” tend to have greater

5 European-Commission (2011), p. 2.

6 OECD (2013).

7 OECD (2013a), p. 19.

expectations which lead in a bigger and bigger innovation gap among the EU-countries within the framework of the current market mechanism and policy.

Traditional innovation policy is concentrated in the “powerful regions” in a sense that current policy seems to “choose” strong regions in order to improve and strengthen them more. The German proposal for cluster policy is a remarkable relevant example: The German state had a competition where everyone could apply for and just the winner of this competition got the money. The picking the winner strategy led the phenomena that only the best applications with the strongest cluster profited from this kind of innovation policy and weaker clusters or regions lost.⁸

In my opinion, European innovation policy lacks - and this is what it needs the most - flexibility to react to various economic conditions and it would be ideal to be formed in regards with the cultural differences of the regions of the EU. In the current crisis it became obvious that solutions for a sustainable economic policy need to focus on a lower level rather than on an EU- or national level. In the following, I will attempt to argue on the basis of networks that are regionally embedded; to clarify that the best policy must base on political Instruments with awareness of the different regional innovation systems.

Important regional actors are the SMEs, which are defined by EU as companies that employ between 5 and 249 individuals and have a turnaround less than 50 Million Euro. Moreover, it is necessary that not more than 25 percent of the companies controlled by external shareholder. However, in the German context, a different definition exists. It considers as well companies with 499 employees as SME. To avoid confusion, SME is referred in this paper with the meaning of the definition given by EU. 99 percent of the European companies are SMEs.⁹

8 Dohse (2007), p. 90.

9 CSES (2012), pp.4.

The present paper, for the better understanding of the reader, is divided into two parts: In first place, the theoretical discussion of the conditions for innovation processes in SMEs and the current innovation policy of the EU focusing on SMEs. In second but equally noteworthy part my research proposal which develops in reference with a different innovation policy in Europe. This scheme emanates from my initial hypothesis that Knowledge-Intensive-Services could make SMEs in regional networks more innovative and KIBs could function as the key element of knowledge diffusion within scientific institutions, companies and public actors. This article builds the preliminary work for my dissertation with a quantitative focus. The following questions are tried to be fully and concretely answered: innovation and neoclassical markets – a critical relation? Answers from the EU for an innovation policy with focus on SMEs? Innovative network cooperation as a replacement of the market orientated perspective on innovation?

Insights into the theory of Innovation policy

Innovation and markets establish an ambivalent connection. The neoclassical model as taught in standard textbooks fails to explain the innovation process in an appropriate way, because the time horizon and the completeness of information as core assumptions do not succeed as basis of the innovation theory. Innovation policy for neoclassical scholars follows the paradigm that market intervention does not facilitate sustainable growth and constitutes a brake, hampering the creation of innovations able to be sold at markets or the creation of new markets, indeed. In that point of view, a legal system, as a tool of innovations protection, founded in the terms of innovation policy, appears as a necessity. Innovation policy also should support ad hoc basic research even in the risk of not fast profits ¹⁰

This “laize faire” approach for innovation policy has its difficulties when it comes to empirical research. To start with, the basic assumptions of the neoclassical model are deprived some essential properties. Empirical

10 Grupp (2002).

studies prove that hidden information and time advantage explain the reasons why firms have to innovate.¹¹ In the neoclassical market there would be no innovation because one firm would have the costs for the innovation and other firms would imitate immediately. In the end, in the stable market equilibrium the market price equals the production price. The imitating firms would not earn a profit and the only firm that would make losses would be the innovating firm because it would need to pay the costs of the innovation and just could offer its products for the market price. This result implies, in turn, two other conclusions. The traditional justification for innovation policy fails because markets do not offer the companies the right incentive to innovate. In addition to that, more important results show that (also without state subsidies) firms do innovate. In fact, innovation plays its role as an inevitable need.

In older researches, SMEs did not show any innovation signs. Until the 70s the spotlight was strongly on big companies because innovations were considered as exclusively created in R&D units. A linear model of innovation existed wherever the industrial sector was dominating as “the” innovative sector. This was based on the first Neo-Schumpeterian-Hypothesis and its principle that large companies are capable of creating more efficiently innovations thanks to their size. The conclusion was that traditional innovation policy focused for a long time on the apparently “ex natura better” large companies because they are superior in proceeding big autonomous research projects, having parallel research projects and selling new products in new markets.¹²

Especially institutional Economics refused those arguments and pointed on the advantages of SMEs:¹³

- 1) Large companies present reduced flexibility
- 2) The R&D projects are harder to be coordinated
- 3) Staff is less motivated
- 4) Bias in running risky R&D projects

11 Grupp (2002).

12 Thomä (2012), p. 12.

13 Rammer & Spielkamp (2006), p. 16.

This means from a theoretical point of view that the size of a company does not allow a direct link to their innovative capability.

In Germany a recent report of the Institut für Mittelstandsforschung Bonn (German Institute that publishes statistics about SMEs) about the innovation process in SMEs in comparison to large companies, claimed that the SMEs still suffer a big innovation gap, plus SMEs have less innovation activities. The following arguments were shown in the empirical analysis:¹⁴

- 1) Lower tendency to use Intellectual Property Rights
- 2) Less parallel innovation projects
- 3) Weaker developed organizational structures
- 4) Expenses for innovation grew less

The outcome should not be interpreted as a conclusion of the older research that stated a “natural” disadvantage. It just shows the potential of SMEs for executing innovation and that markets are obviously not keen to enable every single firm to have the same possibility to act as innovator. In other words, the state needs to step in to help SMEs to achieve a higher level of innovativeness.

Innovation policy in the EU

In the treaty of Lisbon innovation was mentioned as the main factor for growth of the European economic area. Europe was supposed to have been declared as the world leading innovator by the end of the decade, aka 2010. The EU stated that this aim in 2013 is not yet achieved and that the European countries are far from being the most innovative economies in the world.

“Wenn sie die Innovationspolitik auf ein solides Fundament stellen will, muss die EU die ganze Komplexität des Phänomens ‚Innovation‘ anerkennen und besser verstehen, wie Innovation im europäischen Kontext ‚funktioniert‘“¹⁵

14 IfM (2012), p. 48.

15 EU-Commission (2003), P. 9.

The above extract taken from a paper of the EU-commission about innovation policy in the context of the treaty of Lisbon indicates that the persons in charge were aware of the innovation but still, did not know how to apply it into a field of the European policy. The innovativeness of SMEs is mentioned in this paper, but no solutions are offered in this stage.

The goals of a European innovation policy follow mostly the discussed neoclassical perspective and rely on the market fixation:¹⁶

- 1) Creating a common innovation policy
- 2) Having a legal system that designs a fertile ground for innovations
- 3) Supporting founding and growth of innovative companies
- 4) Improving the key elements of the innovation system
- 5) Having a society that backs innovations

It is clear that neither new ideas were implemented nor the goals that have a precise effect on policy were formulated.

Another recently published example shows that the EU innovation policy still needs to look for alternative measures to improve innovativeness. This extract is cited from a short summary that should give an overview of how successfully the innovation policy in the EU seems to work:"

- 1) Countries should be encouraged to develop their own specific policy models
- 2) Funding remains concentrated on science and technological research
- 3) Innovation policies to foster industry-science collaboration seems to be effective
- 4) Mixed impact of grants to support business innovation"¹⁷

That network cooperation in the EU is considered for the time being, pretty fashionable. Also the concentration on industrial innovation has not changed. Service innovations are not mentioned. The fourth point is the most important for SME-policies. "mixed impact" appears like a euphemism for the fact that the right instruments are not found to foster the use of the innovational potential of SMEs. The EU-Commission stated that the traditional tools like direct investments that helped large companies to innovate, do not work regarding SMEs and at the very moment, brand new ideas for SMEs specific innovation policy are needed.

¹⁶ EU-Commission (2003), p. 15.

¹⁷ EU-Commission (2013a).

KIBS in the innovation process

KIBS are considered to be a service with higher share in employees with an academic degree. According to its definition, the main function of KIBS is to transfer knowledge between different firms and sectors. The collection of data for statistical purposes follows the EU-structure the NACE categories 72 until 74. KIBS are for example technical services, consulting firms and R&D services.¹⁸ Target groups as customers of the services that are offered by KIBS are mainly focused on businesses and not on private consumers. The use of networks by KIBS is frequently observed. In addition to that, the special business-to-customer relationship is outstanding feature of KIBS and the interaction is the key to understanding the KIBS-specific innovation process. The relation of KIBS to innovation is necessary for understanding the following approach. The main focus of the research was on the “best practice” knowledge of KIBS that makes them especially capable to take a leading position as innovative power of the service sector.¹⁹ Current research is summarized in three main characteristics:²⁰

- 1) KIBS can appear as an innovator. They create new products or services and sell them to their customers.
- 2) KIBS transmit innovations. The original source of the innovation is another firm. KIBS take this innovation and sell services and products without changing it to the customer firm. Especially the transfer in other sector is mentioned as key feature of KIBS.
- 3) KIBS can be observed as innovative by recombining knowledge and create in cooperation with the customer to get custom-tailored solutions.

The discussion about the innovativeness is influenced a lot by the hope of researchers to understand innovation process in the service sector. It was strongly influenced by the EU-research network project KISINN

¹⁸ Martin (2010), p. 36.

¹⁹ Smedlund & Toivonen (2007), p. 159.

²⁰ Bessant & Rush (2000), Hipp & Grupp (2005), Miles et al. (1996), Strambach (2008), Toivonen (2004), Wood (2002).

(Knowledge-intensive Services and Innovation Networks). That becomes clear by observing publications about KIBS. There was a big increase of publications that stated KIBS are the “major innovators”²¹ in the service sector. After 2006 the number of surveys about KIBS dropped quite fast. That can show that part of this research was just done because it was fashionable and that these path of the innovation research lost its fascination. In the following time the research that had the focus on KIBS as innovator became more diffused. For example the heterogeneity of the KIBS definition was part of the research. It resulted in more differentiated definition of KIBS in managerial KIBS and technical KIBS. Other researchers focused on special aspects of the innovation process of KIBS. The internationalization of companies was analyzed and how KIBS helped in this process.²²

In my opinion, the general definition of KIBS seems appropriate because it makes the broad concept more capable for a range of different KIBS and therefore more relevant for SMEs. Excluding parts of the KIBS or of the innovation definition would lead to following: My proposal couldn't be understood as a general proposal for European innovation policy and its application would be limited by using it for different economies with totally different surroundings.

As an example for the importance of KIBS for the service sector, I will focus on the German KIBS sector. It is the fastest growing sector in the field of services. Between 2001 and 2007, the share in employees in the service sector who worked for KIBS, increased about 10 percent with 2 million employees in 2007. It shows that in a successful economy, KIBS gain a higher relevance and that it's worth it to think about how innovational potential can be used for SMEs that are considered as not so innovative.²³

Different empirical studies showed that KIBS are mainly used as transmitter of innovation by large enterprises. SMEs have more difficult

21 Muller & Doloreux (2007), p. 9.

22 Kautonen (2010); Doloreux, Freel & Shearmur (2010).

23 CIS 2009.

access to capital and a higher risk aversion to buy services from KIBS. It was explained with the expectation of the profit that would be created out of the cooperation between SMEs and KIBS. In case a project with KIBS fails, there is a risk that the whole company struggles by the financial loss. It's important to announce that all the research that is done on cooperation between KIBS and SMEs rely on surveys that were only conducted at KIBS. The demand perspective of SMEs was not part of the studies.²⁴ So it is to say that both contract partners could profit from this cooperation. In my research project I will focus on the demand side of the cooperation between KIBS and SMEs.

In the KISINN project the different functions of KIBS was one of the major outcomes. The difference of the economic development between southern and northern countries led to different contributions of KIBS to the innovation systems. It was argued that KIBS are not only in high developed countries helpful to foster innovation but could also lead to radical technological and non-technological changes in countries like Greece and Spain that are implemented by KIBS.²⁵ The empirical results before the crisis can be a hint how the countries that suffered from the crisis could come back to a growth path and catch up with countries like the Netherlands and Germany.

Innovation SME-Networks with cooperating KIBS

My idea is that SMEs could cooperate with KIBS in innovation networks. Networks are a topic that seemed to solve like almost all the problems of the innovation process. The existing definitions of networks are diffuse. Networks seem to be everywhere and have very different form of appearance. Hellmer (1999) blames this fashion as network myths and emphasizes that the quality of networks needs to be observed.²⁶ The important feature of networks in comparison to "normal" markets is the

24 Schienstock, Werner & Mitrea (2010), Kautonen (2010), Koch & Stahlecker (2006).

25 Woods (2005), p. 437.

26 Hellmer (1999), p. 250.

transaction costs. Most important for good working networks is trust which is the driver of networks. The participating companies need to rely on the business partner to have an advantage of using networks.

Innovation networks exist to create new knowledge. They are characterized by informal relations and stop to exist when the expected innovation is produced. In addition to that, they are less formalized than other kinds of networks.²⁷

On a theoretical basis, the advantage of innovation networks in comparison to single companies should be the effect of economies of scope. It means that companies can work in cooperation more efficient. In the end, the cooperation should have the result that an innovation network should be more innovative than the sum of firms without cooperation.

SMEs also use less innovation networks because most of the innovation networks are dominated by big companies. Empirical papers concentrate on the risk aversion of SMEs compared to bigger companies. The too powerful position of large enterprises seems to be an important reason for SMEs not to be engaged in innovation networks. They are afraid that only the agenda of large companies will be taken into consideration.²⁸ To be more specific the unintended spillover of specialized knowledge, the high effort to coordinate seem to lower the expectation of SMEs to gain profit out of network cooperations.

But there are positive examples of SME dominated networks that create innovation. Especially in the case of origin innovation, the use of networks is observed. Also supplier networks act successfully as innovation networks.²⁹ Less risk and lower use of their own resources can be the result of the participation in innovation networks.

27 Smedlund & Toivonen (2007), pp. 162ff.

28 Fraunhofer-IAO (2001), p. 82.

29 IfM (2012), p. 15.

From KIBS' point of view, they would have the opportunity of getting long term relations in networks by participating in innovation networks and there would be a shift from the fragile market relation to a long term network relation under consideration of networks in which business partners do care about stable partnerships.³⁰

Policy needs to make sure that innovation networks are SME-networks. The participating actors need to have the trust that they are not dominated by a single company. The major task consists in engaging SMEs to cooperate with KIBS in networks. The policies need to be applied with respect to the economic environment. For example in Germany, the focus should be on the interaction of the actors. Exhibitions, innovation coupons and a stronger role of the already existing innovation agencies, that could have the task to initiate these networks, can be used for a specific German innovation policy. In other countries that suffered more from the crisis more direct help from the state is required. This means the goal should be that the additional costs of networks should be paid by the EU structural fund. It could have the effect that SMEs in these countries can catch up with the rest of the EU in respect to their innovativeness.

Conclusion and perspective of an EU innovation policy

The trend of a higher academic qualification is observed in all European countries. EU innovation policy needs to take into consideration the different situations of the countries. The huge unemployment and the innovation gap require a strong innovation policy. Even in countries that are not directly affected by the current crisis need to be prepared for the demographic change.

In the neoclassical market innovation wouldn't exist. Innovation policy should take care of creating the perfect markets and is just responsible for the legal conditions and basic research. In the traditional research, SMEs were considered as naturally less innovative. The Institutional Economics pointed out that there are strong arguments that SMEs have equal potential to innovate. Empirical studies showed that SMEs have problems to make use of it.

30 Aslesen & Isaksen (2007), p. 49.

The EU policy follows the neoclassical models in the majority of their important arguments. Therefore is the question how to make SMEs more innovative not really answered by the EU. The Commission admits that at the moment there is a lack of innovation policy instruments.

The function of KIBS as innovator in different European economic situations seems to be an alternative to increase the innovativeness of SMEs. Especially the function of KIBS that can influence innovation process in wealthy and in suffering economies needs to be in the focus for EU-wide policies. KIBS often use innovation networks to cooperate with the participating partners. Therefore the cooperation between KIBS and SMEs could be fruitful.

SMEs do, in comparison to large companies, cooperate less with KIBS. The risk aversion and the weaker accessibility lower the probability to hire KIBS for innovative projects. Innovative networks can create an environment to strengthen the cooperation between KIBS and SMEs.

Innovation policy should take into account the specific situation of each country. The weaker economies need a higher financial support. For the northern economies, the initiating innovation networks seem to enable the cooperation enough.

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