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**Impact of Regulations on Innovation
Performances in EU:
Special Focus on Intellectual Property Rights**

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Abstract

Innovation has been identified as one of the key factors for economic growth long ago. However, the emergence of “knowledge century” further strengthened the role of the concept since proper management of the knowledge is essential to make the best out of the innovative capacity of the companies as well as the countries. This necessitates a balanced intellectual property rights (IPR) systems, since these rights provide the basis to solve the market failures faced by innovating firms by creating property rights over knowledge. There is an inherent dilemma between invention and diffusion. A strong patent protection might be an incentive for innovation; however, a weak one facilitates a rapid and wide diffusion of inventions, which leads then to innovations and to growth for the whole economy. Therefore, appropriate regulations may be a good way to reach the two goals simultaneously. Hereafter, this paper will analyse how regulations can shape new markets for products and services, with a special focus on intellectual property rights. The study will be supported by a comparison of four countries, aiming to understand the link between their diverse IPR practices and innovative performances.

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Abbreviations

AG	Advocate General
AGO	Opinion of Advocate General
CFI	Court of First Instance
EC	European Community
ECJ	European Court of Justice
EIS	European Innovation Scoreboard
EPO	European Patent Office
EU	European Union
GDP	Gross Domestic Product
IP	Intellectual Property
IPR	Intellectual Property Rights
NTBFs	New technology-based firms
R&D	Research and Development
SME	Small- and Medium-Sized Enterprises
TTBER	Regulation on Technology Transfer Agreements
USPTO	United States Patent and Trademark Office

Country Abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CH	Switzerland
CZ	Czech Republic
CY	Cyprus
DE	Germany
EE	Estonia
FI	Finland
FR	France
GR	Greece
HU	Hungary
IE	Ireland
IS	Iceland
LU	Luxembourg
LT	Lithuania
LV	Latvia
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SI	Slovakia
TR	Turkey
UK	United Kingdom

1 Introduction

1.1 Objectives

The concept of “knowledge economy” refers to an economy characterised by the recognition of knowledge as a source of competitiveness, the increasing importance of science, research, technology and innovation in knowledge creation, and the use of computers and the Internet to generate, share and apply knowledge¹. Notwithstanding the economic slowdown in recent years, the knowledge intensity of OECD economies has continued to increase, which is evidenced by the increasing investment in research and development (R&D)². However, the emergence of “knowledge economy” introduced some challenges to firms, one of the most crucial ones being the question of ‘how to manage the existing and new knowledge effectively to maximise the benefit from the innovative capacity of the firm’³.

Intellectual property (IP) systems create a mechanism to solve the market failures faced by innovating firms, such as ‘appropriability’ and ‘tradability’ of knowledge, by creating property rights over knowledge for a limited period of time. Moreover, IP rights enable the exercise of ownership over the intellectual output of the R&D activities⁴. Entrepreneurs, who have the potential to transform this output into business opportunities, therefore, need to have a good understanding of Intellectual Property systems in order to manage effectively a firm’s intellectual assets.

A balanced IP system is a fundamental concern for competitive markets due to the dilemma between invention and diffusion of knowledge. The regulations ensuring an efficient IPR system have a positive impact on the introduction of new products and services by protecting the inventor or the innovating company from

¹http://www.innovation.sa.gov.au/sti/a8_publish/modules/publish/content.asp

² OECD, (2003), Science, Technology and Industry Scoreboard 2003, p.3

³ 2nd OECD Conference of Ministers Responsible for SMEs; “Networks, Partnerships, Clusters and Intellectual Property Rights: Opportunities and Challenges for Innovative SMEs in a Global Economy”; Istanbul, June 2004, p.7

⁴ Ibid footnote 3, p.41

imitation by competitors. Yet, the system also has to make sure that new technological information is diffused after the owner of the right sufficiently benefits from his invention. This dilemma highlights the influence of regulations on the innovation practices within different countries.

With this background on mind, by first constructing a framework to analyse the regulations shaping new product markets with special consideration to differences between sectors, this paper aims to understand the different practices of intellectual property rights in different countries and their impacts on innovation performances of those countries.

1.2 Demarcations

Various demarcations took place throughout the paper. To begin with, when defining entrepreneurship, economic theories have been ignored and the managerial perspective was placed at the centre for the purpose of the analysis.

Moreover, among the five strategic areas of the SME policy, only the creation of a more SME-friendly regulatory and administrative framework will be covered, leaving “fuelling the entrepreneurial mindsets, encouraging more people to become entrepreneurs, gearing entrepreneurs for growth and competitiveness, and improving the flow of finance” as demarcations.

Furthermore, the paper aims to link entrepreneurial policies to economic growth. However, the ambiguity of the definition of “economic growth” results in challenges to define, measure the concept and link it to entrepreneurial activity. The most prevalent measures of performance being growth, income, wages, survival, innovation and productivity, the paper will only analyse innovation as an indicator of economic performance.

Besides, there are three ways to measure innovation, namely a measure of the inputs into the innovative process, such as R&D expenditures; an intermediate output, such as the number of inventions that have been patented; or a direct

measure of output. Although direct measure of output is considered advantageous over other indicators, this paper will focus on the number of patented innovations to provide the linkage with intellectual property rights.

When analysing the impacts of regulations on innovation, only one sub- category under administrative regulations, that is to say impact of intellectual property rights, will be discussed. The impact of economic and social regulations will be the other demarcations of the essay.

1.3 Methodology

The methodology for this paper is based on the interpretation of the existing literature with a qualitative approach. The analysis is based on the frameworks provided by competition law as well business disciplines to form a link between intellectual property rights and innovation.

For the legal part, European Community (EC) Treaty is used as the primary source of law, while the regulations and directives regarding the intellectual property rights are the main secondary sources of law to discuss the legislation in force. The principles of EC Law related to the intellectual property rights are discussed to better understand the implications of law. The jurisprudence of the European Court of Justice (ECJ) is consulted in the annex to support the analysis. The cases chosen are the ones where the principles discussed are first applied or else updated.

For the business part, secondary data collected by the third parties is utilized and then applied for the comparison of countries. Literature review is applied to define entrepreneurship, to link the concept to the economic growth and to provide the basis for the discussion about innovation.

The data collected for the two parts is then combined together to interpret the potential bridge between the legal theories on intellectual property rights and the business theories on innovation. The analysis was supported by the comparison of

the intellectual property systems of four Member States with regard to their innovation performances.

The choice of the countries is based on the innovation matrix provided by the European Innovation Scoreboard (EIS). One country is selected from each quadrant of the matrix according to the countries' innovation performances, namely one country moving ahead, one losing momentum, one catching up and one falling further behind. The diversity of the countries chosen regarding their innovation performances have provided the study with a basis to question whether there is a pattern to be drawn from the innovation performance differences and intellectual property rights protection practices differences. Moreover, the choice of two Nordic countries, Sweden and Denmark, and two Southern, Italy and Spain, made it possible to observe the similarities within the regions and the differences in-between regions.

It should be noted that significant amount of information was collected from researches conducted by the European Union as well as World Intellectual Property Organisation, which might raise the question of objectivity in the sense that these organisations seek to promote the utilisation of intellectual property rights. However, the novel nature of the question about 'the link between regulations and innovation' restricts the paper with a limited number of sources to refer. No interviews have been conducted to consult the opinions of the industry experts since the paper referred to a comprehensive survey on the perceptions of companies about the impacts of regulations on innovation.

1.4 Structure

The paper will begin with the discussion about the initiatives taken by the Commission to support SMEs and the reasons for entrepreneurship policies, and then the innovation policies, to come out on top of SME policies over time. This will be followed by a brief introduction of the concept of innovation, and then by a conceptual framework to analyse the relationship between innovation and EC regulations. The centre of the analysis will be the intellectual property rights (IPR)

system in the European Union and the impact of the IPR on the new product and services markets. The paper will be concluded with a comparison of the different IPR protection practices and innovative performances in four Member States, namely Sweden, Denmark, Italy and Spain, in order to illustrate the practical implications of the regulatory framework in different countries.

2 Innovation

This chapter will analyse the shift from SME policies to entrepreneurship, and then to innovation policies in Europe by providing the definitions of the concepts as well as the linkages between the theories on these concepts.

2.1 Definition of Entrepreneurship

Definitions of entrepreneurship vary among different contexts, such as economics and management, where the latter will be the focus of this thesis. From the management perspective, entrepreneurs and managers can be differentiated in that, “entrepreneurship is a way of managing that involves pursuing opportunity without regard to the resources currently controlled”⁵. OECD defines entrepreneurs as “the agents of change and growth in a market economy and they can act to accelerate the generation, dissemination and application of innovative ideas... Entrepreneurs not only seek out and identify potentially profitable economic opportunities but are also willing to take risks to see if their hunches are right”⁶. Despite the fact that the concept can be easily described, empirical measurement of entrepreneurship is difficult since the concept crosses various key units of analysis⁷.

Varieties in the contexts and the definitions for entrepreneurship give rise to various approaches to measure entrepreneurship, ranging from the criterion of growth to the rate of self-employment, the degree of entrepreneurial activity and the innovative activity⁸. Focusing on one aspect of the entrepreneurship concept helps to narrow the broad definition in order to have a consistent analysis. Lundström and Stevenson focused on the pre-start-up, start-up and early phases of business as a measure, justifying their choice by the fact that these measures are

⁵ Stevenson, Howard H., and William A. Sahlman, "How small companies should handle advisers", Harvard Business School Publications, 1991

⁶ OECD (1999), cf. Audretsch, (2002), p.11

⁷ Audretsch, David B., “Entrepreneurship: A Survey of Literature”, July 2002, p.3

⁸ Audretsch, D.B., M.A. Carree, A.J. van Stel and A.R. Thurik, “Impeded Industrial Restructuring: The Growth Penalty”, *Kyklos*, vol. 55, no. 1, pp. 81-98(18), 2002

the targets of entrepreneurship policies⁹. However, since the purpose of the paper is to deal with intellectual property rights issues, the centre of attention will be on the measures concerning the innovative activity. These measures consist of the indicators of R&D activity, the numbers patented innovations, and new product innovations introduced into the market¹⁰.

2.2 Shift From SME to Entrepreneurship Policies in EU

The importance of entrepreneurship has been recently increased as a consequence of the growing awareness on its role in the European economy. In the middle of the last century, the importance of entrepreneurship seemed to be fading away since economists predicted the dominance of large firms¹¹. Economies of scale, low costs and standardization were the key words for success, which could only be achieved by large firms. However, systematic international studies demonstrated that in most European countries SMEs began increasing their relative importance¹². This transition from a “managed economy” towards an “entrepreneurial economy” appears to have taken place between the mid-1970s and the early 1990s¹³. In Netherlands, for instance, business ownership rate fell from 1% in 1972 to 0.8% in 1984, but then recovered to 1.09% in 2000¹⁴. In the OECD countries, SMEs account for 95% of companies and 60 to 70 % of employment according to 2003 data¹⁵; whereas in Europe-19¹⁶, percentage of SMEs corresponds to 99% and SME employment equals to 70% in 2003¹⁷. This reversal of trend can be explained by the shift of economy towards knowledge-

⁹ Lundström, A., Stevenson, L., "Patterns and trends in Entrepreneurship/SME Policy and Practice in Ten Economies - Volume 3 of the Entrepreneurship Policy for the Future Series", p44

¹⁰ Audretsch, David B., “Entrepreneurship: A Survey of Literature”, July 2002, p.4

¹¹ Green Paper: Entrepreneurship in Europe, Brussels, 2001, p.4

¹² Ibid footnote 10, p.6

¹³ Karlsson, C., Friis, C., Paulsson, T., “Relating entrepreneurship to economic growth”, CESIS Electronic Working Paper Series, September, 2004, p.4

¹⁴ EIM Compendia (2000.2), “A Harmonized Data Set of Business Ownership Rates in 23 OECD Countries”, 2002, p.52

¹⁵ Burrone, E., Jaiva, G.S., “Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises”, World Intellectual Property Organization (WIPO), Geneva, p.5

¹⁶ Data covers European Economic Area with old Member States plus Switzerland.

¹⁷ 2003 Observatory of European SMEs: Competence development in SMEs”, Brussels, 2003, Table 3.6, p 33

based activities¹⁸, which is characterized by a decentralized industry structure with knowledge and flexibility as key factors of production.

SMEs' surfacing as an important actor in the knowledge economy seems to be contrary to many of the conventional theories of innovation, whose starting point is the firm¹⁹. However, a series of studies has demonstrated that small firms account for a disproportionate share of new product innovations given their low R&D expenditures²⁰. Audretsch explains this phenomenon by shifting focus from firms to individuals – agents with endowments of new economic knowledge. Therefore, as the weight of knowledge has increased as a factor of production, entrepreneurship takes on new importance since it serves as a key mechanism by which knowledge created in one organization becomes commercialised in a new enterprise²¹.

Awareness of this fact resulted in increasing efforts by countries to boost the supply of entrepreneurs in their economies and consequently the number of new firm entries. It should be noted that it is often difficult to bring together a government's entrepreneurship policy position because statements about this could be dispersed in descriptions of the more traditional SME policy or presented as enterprise or innovation policy. However, it can be concluded that whereas SME policies focus on the efficient functioning of the market, financing and informing of SMEs and tax incentives, the move towards entrepreneurship policies broadens the scope to cover the elimination of barriers to entry, promotion of entrepreneurship, entrepreneurship education and creation of new structures, products and services²².

As in the case of the SME policy, there is “no silver bullet” for creating an entrepreneurial Europe²³ and thus a wide array of areas needs to be covered. Five

¹⁸ Green Paper: Entrepreneurship in Europe, Brussels, 2001, p.4

¹⁹ Audretsch, David B., “Entrepreneurship: A Survey of Literature”, July 2002, p.8

²⁰ Ibid, p.8-9

²¹ Ibid, p.10

²² Lundström, A., Stevenson, L., "Patterns and trends in Entrepreneurship/SME Policy and Practice in Ten Economies - Volume 3 of the Entrepreneurship Policy for the Future Series", p.37

²³ Action Plan: European Agenda for Entrepreneurship, Brussels, 2004, p.6

strategic policy areas aimed by the Commission include fuelling the entrepreneurial mindsets, encouraging more people to become entrepreneurs, gearing entrepreneurs for growth and competitiveness, improving the flow of finance and creating a more SME-friendly regulatory and administrative framework with a special focus on entrepreneurs. The last mentioned policy area will be the focus of this study²⁴, others being the demarcations of the paper.

At the core of the entrepreneurship policies lie the theories suggesting that entrepreneurship contributes to economic growth, and that this contribution is the result of the ‘change’ entrepreneurs bring to the markets. Therefore, among the various ways to measure economic growth, innovation will be the indicator that will be analysed throughout this paper as the linkage of entrepreneurship to economic performance.

2.3 Shift from Entrepreneurship to Innovation Policies in EU

Entrepreneurship is recognised as a mindset in the Green Paper on Entrepreneurship, however, it should also be noted that not all entrepreneurs are innovative. Therefore, as observed from the Commission Member Mr Erkki Liikanen’s statement: “Innovation policy must be directed at providing the skills and developing the motivation for what we call ‘entrepreneurial innovation’²⁵”, there is a recognition at the community level of the increasing importance of innovation for the competitiveness of Europe. That is why the entrepreneurship policies in EU are recently followed by the innovation policy focusing on how to develop policies to help enterprises become more competitive through innovation²⁶.

A particular emphasis is, therefore, put on ensuring coherence and synergy among all actions implemented at the Community level in the field of innovation and

²⁴ Action Plan: European Agenda for Entrepreneurship, Brussels, 2004, p.6

²⁵ Conference on the Innovation Communication, “New Innovation Policies in the EU”; Press and Stakeholders’ Liikanen, E., Member of the European Commission, Brussels, 2003

²⁶ Ibid footnote 25

competitiveness. In April 2005, the European Commission has adopted the proposal for a Decision on establishing a Competitiveness and Innovation Framework Programme (CIP) for the period 2007-2013, which is projected to become the main legal basis in the field of innovation and competitiveness. A more comprehensive framework for all Community actions implemented in the field of entrepreneurship, SMEs, industrial competitiveness, innovation, information and communications technology development, environmental technologies and intelligent energy is planned to be provided through this framework²⁷.

2.4 Innovation

Innovation can be defined as “the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organization, and the working conditions and skills of the workforce²⁸. The concept may also refer to technical advances in how products are made or shifts in attitudes about how products and services are developed²⁹.

Measures of change have typically involved one of the three aspects of innovative process: a measure of the *inputs* into the innovative process, such as R&D expenditures; an *intermediate output*, such as the number of inventions that have been patented or a *direct measure* of output. The drawback in using R & D measure is that it reflects only the resources devoted to producing innovative output, but not the amount of innovative activity actually realized. The use of patented inventions, on the other hand, is not a measure of innovative output in fact. Whereas patents reflect existence of a new knowledge, it does not indicate whether this knowledge has a positive economic value. Besides, patents do not

²⁷ www.cordis.lu

²⁸ Commission of the European Communities, (2004), Staff Working Paper: “European Innovation Scoreboard”, Brussels, 2004, p. 7

²⁹ Burrone, E., Jaiva, G.S., “Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises”; World Intellectual Property Organization (WIPO), Geneva, p.2

capture many inventions that have the potential to result in innovations³⁰. These drawbacks leave the direct measure of innovation through “total innovation rate” as the most reliable resource. Audretsch defined the concept as the total number of innovations per one thousand employees in each industry³¹. The measure eliminates the misleading nature of absolute number comparison of innovations contributed by large and small enterprises, since it is weighted against the relative presence of small and large enterprises. Therefore, total innovation rate is advantageous over other measures. However, since the purpose of this essay is to discuss the effects of intellectual property systems on innovation performances of the countries, the number of inventions that have been patented will be highlighted despite the drawbacks of this indicator.

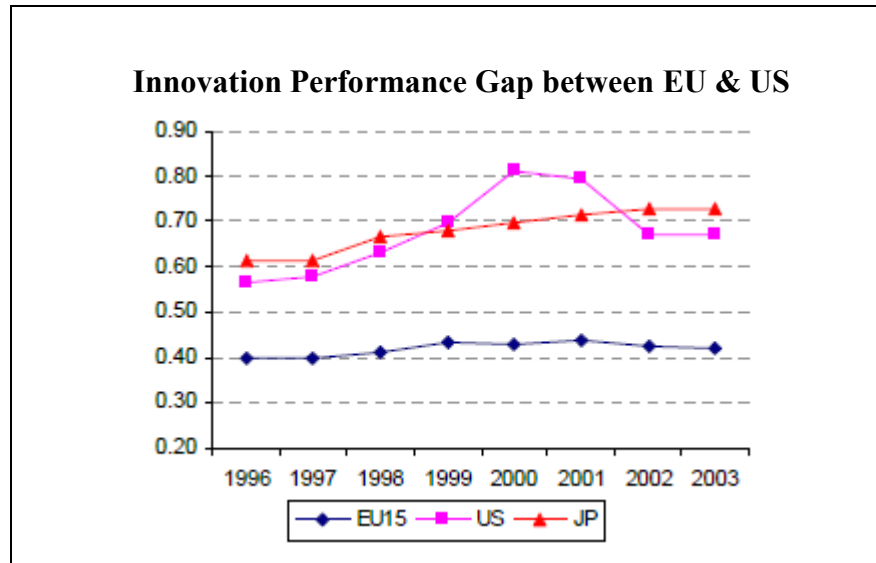
Europe’s Innovation Performance

Where new products and services are the driving force of a dynamic and prosperous economy, Europe is still lagging behind its competitors in terms innovation performance and R&D activities³². This fact is confirmed by the European Innovation Scoreboard (EIS), which is the instrument developed by the European Commission to evaluate and compare the innovation performance of the Member States (See Graph 1)

³⁰ Audretsch, David B., “Entrepreneurship: A Survey of Literature”, July 2002, p.18-21

³¹ Ibid, p.21

³² A pro-active Competition Policy for a Competitive Europe, Brussels, 2004, p.4



Graph 1 Innovation Performance Gap Between EU and its Competitors³³

As observed from the graph, which is based on 12 indicators chosen among the indicators stated in Appendix I according to their availability available in all Member States, USA and Japan, US and Japan are still far ahead of EU average as well as a majority of the Member States. According to EIS, the gap between US and EU can be largely explained by three indicators; patents, working population with tertiary education and R&D expenditures. This is demonstrated by the facts that European companies apply for 170 patents each year per million inhabitants, compared with 400 for American companies, and that the Union's commercial deficit for high-tech products is approximately €23 billion per year³⁴. Gross domestic expenditure on R&D, additionally, was still 1.99% of GDP in Europe, whereas it was around 2.76% in US in 2003 and 3.12% in Japan in 2002³⁵.

The gap between Europe and its competitors necessitates that a competitive internal market be ensured to increase the innovation potential in Europe. A well-balanced regulatory framework can facilitate the competitiveness of Europe by ensuring the functioning of the internal market, and therefore can contribute to the

³³ Commission of the European Communities, (2004), Staff Working Paper: "European Innovation Scoreboard", Brussels, 2004,, p. 4

³⁴ Commission of the European Communities, (2004), "7th Framework Communication from the Commission: Science and Technology, The Key to Europe's Future", Brussels, 2004, p. 4

³⁵ Commission of the European Communities, (2005), "Update of the Statistical Annex (annex 1) to the 2005 Report from the Commission to the Spring European Council Structural Indicators", p.12

European innovation performance. Regulations with an indirect nature are crucial conditions to support innovation in EU as well as the direct measures, such as public promotion of new products and services in the market³⁶. The relationship between innovation and regulatory framework will be analysed in detail through a conceptual framework in the following section. The impact of the regulations on the development and transmission of new products as well as the emergence of new markets will be at the centre of the analysis³⁷.

These developments in EU, starting from SME policies, going through entrepreneurship policies and most recently finalizing at innovation policies, have been the inspirations of this paper to analyse the innovative performances of Member States in EU with regard to their intellectual property right systems. The first chapter introducing these concepts will be thus be followed by the impact of regulations on the innovative performances in the following chapter to serve this aim of the paper.

³⁶ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p25

³⁷ Ibid, p25

3 The Relationship Between Innovation and Regulations: Conceptual Framework

In the context of government and public services, *regulation* refers to the control by rules, as opposed to its prohibition. In economics, it is part of the government relationship with markets³⁸. As for the innovations, on the other hand, OECD definition of the "Oslo Manual" covers goods, services and processes introduced to the markets, which are either new or significantly improved with respect to fundamental characteristics³⁹. First thing to mention when analysing the relationship between innovation and regulations is that it is impossible to draw any general conclusions about the link between these two⁴⁰. Due to the complexity of each category of regulations, it cannot be concluded that one specific regulation will lead to more innovation by itself. However, a conceptual framework will help to better understand the nature of the above mentioned relationship.

3.1 Types of Regulations

According to OECD definition, regulation can be divided into three categories⁴¹; namely economic, social, and administrative or market-organising regulations. Economic regulation refers to public interventions to remedy market or competition failures, which can be exemplified by competition and antitrust regulations. Social regulation, on the other hand, refers to public intervention necessary to correct externalities in general. An externality occurs in economics when a decision causes costs or benefits to individuals or groups other than the person making the decision. That is to say, the decision-maker does not bear all of

³⁸ <http://encyclopedia.laborlawtalk.com/Regulation>

³⁹ Institute Systems and Innovation Research, "New Products and Services: Analysis of Regulations Shaping New Markets", Karlsruhe, February 2004, p.7

⁴⁰ This chapter draws significantly on New Products and Services: Analysis of Regulations Shaping New Markets, Karlsruhe, February 2004 and the literature cited there

⁴¹ Institute Systems and Innovation Research, "New Products and Services: Analysis of Regulations Shaping New Markets", Karlsruhe, February 2004, p.7

the costs or reap all of the gains from his or her action due to insufficient market mechanisms⁴². Finally, administrative or market-organising regulations enable private agents to use resources or to transfer them among each other. Governments aim to achieve economic efficiency using this type of regulations, which is best observed in the organisation of property rights⁴³.

Table 1 Types of regulations and their impacts on innovation⁴⁴

Type of Regulation	Positive Impact on Innovation	Negative Impact on Innovation
Economic regulation		
<i>Antitrust or pro-competition Regulation</i>	eases and enforces innovation	prohibits (R&D) alliances
<i>Protection of infant industries (R&D subsidies, barriers to entry, mergers)</i>	allows costly and risky innovations	continued protection does not enforce innovative activities
<i>Public utilities: rate of return regulations; pricing at marginal costs</i>	rents available for R&D and innovation	little and biased incentives to innovate
<i>Public utilities: price cap</i>	incentives to reach productivity gains, if regulated company can capture parts of the gains	-
<i>Public utilities: Competition</i>	-	high price pressure and low profit margins do not allow to invest in innovation
<i>Protection of selected industries (e.g. aerospace)</i>	funds available for large R&D projects and innovation	no competitive pressure to innovate
Social regulation		
<i>Environmental regulations</i>	create incentives for new processes creating less environmental damage and for the development	restrict the innovative activities of firms and hamper the competitiveness and therefore their

⁴² <http://en.wikipedia.org/wiki/Externalities>

⁴³ Institute Systems and Innovation Research, "New Products and Services: Analysis of Regulations Shaping New Markets", Karlsruhe, February 2004, p.7

⁴⁴ Ibid, p. 16

	of new products	innovative capacity regarding end-of-pipe technologies
<i>Safety regulations</i>	increase acceptance of new products among consumers	additional restrictions for innovators
<i>Public goods</i>	provide infrastructure for innovative activities	reduced private sources for innovative activities
Administrative regulation		
<i>Product liability</i>	producer liability increases the acceptance of new products among early adopters	too high liability reduces the incentive for producers of innovative goods
<i>Intellectual property Rights</i>	additional incentives to innovate	additional protection for monopolistic practices is an obstacle for the diffusion of new technologies and products

Positive and negative impacts of different sub-types of regulations under the headings economic, social and administrative regulations have been discussed in Table 1. The administrative or market-organising regulations, in particular, are divided into two sub categories, namely product liability regulations and intellectual property rights, the latter being the focus of the coming sections of this essay.

3.2 The Impact of Administrative Regulation on Innovation

The best analysed link between administrative regulation and innovation is the impact of IP Rights, especially patents and copyrights, on innovation. It can be observed from Table 1 that intellectual property rights may provide additional incentives to innovate serving as a positive impact, yet may also be an obstacle for the diffusion of new technologies and products through additional protection for monopolistic practices serving as a negative impact to innovation.

That is to say, there is a fundamental dilemma between invention and diffusion. Whereas a strong patent protection encourages innovation, a weak one favours a rapid and wide diffusion of inventions, which leads then to innovations and to growth for the whole economy. Appropriate regulations may be a good way to reach the two goals simultaneously⁴⁵.

The analysis of the impacts of regulations on innovation will continue in the following section, with the discussion about the dilemma between IP rights, and competition law and internal market. The implications of these differences on the innovation performances will then follow.

⁴⁵ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p. 14

4 Intellectual Property Rights Systems

An essential factor determining a company's decision to invest in innovation is the extent to which it will be able to recover its investments and make profits once its R&D effort results in an innovative product or process⁴⁶. The possibility of higher profits for the firm provides the incentive to invest in innovation in the first place. The system of intellectual property (IP) rights creates a mechanism to resolve the "appropriability" problem of knowledge, by creating property rights over knowledge⁴⁷.

IP rights can be defined as exclusive rights granted by the State giving the owner the right to exclude all others from the commercial exploitation of a given invention, new/original design, trademark, literary and artistic work and/or new variety of plant⁴⁸. Intellectual rights give the holder an exclusionary, and sometimes exclusive, right to the exploitation of an emanation of the intellectual output of R&D activities⁴⁹. Hence, they may provide companies with the ability to differentiate their products, segment markets, create a brand image, find niche markets, target specific customer groups and obtain exclusivity over the commercial use of a mark or design that may be the main selling point of a new or improved product or service. Therefore, when coupled with other factors, IPR systems might create an incentive for companies to innovate. Moreover, the public disclosure function of the patent system facilitates the diffusion of new technical knowledge and potentially reduces the amount of "wasteful" duplicative R&D⁵⁰.

⁴⁶ Burrone, E., Jaiva, G.S., "Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises"; World Intellectual Property Organization (WIPO), Geneva, p.2

⁴⁷ Ibid, p.2

⁴⁸ See Appendix I for the definitions of intellectual property rights

⁴⁹ Jones, A., Sufirin, B.; "EC Competition Law, Text, Cases and Materials"; Oxford, Second Edition, 2004, p.688

⁵⁰ Burrone, E., Jaiva, G.S., "Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises"; World Intellectual Property Organization (WIPO), Geneva, p.3

The issue of IP rights concerns all types of businesses involved, yet it is increasingly important for new technology-based firms (NTBFs) to maintain their competitive edge. NTBFs can be defined as ‘new firms established for the purpose of commercializing new technology or providing an innovative service on the basis of new technology’. Since these companies generally have limited capital and tangible assets, the innovative idea is most of the time the main asset of the company during its start-up phase and the basis of its competitiveness⁵¹.

4.1 The Relationship Between IP Rights and EC Law

Under EC Law, the term “intellectual property rights” is used to cover the rights arising under national or Community Law for the protection of patents, trademarks, copyrights, designs and similar rights of various kinds (See Appendix II for the types of intellectual property rights). IP rights are generally thought to be desirable as a means of an incentive to innovate and create. However, their existence may, as well, result in unjustified restrictions on competition.

This complexity becomes more evident in the context of the Community since the Treaty aims to establish a single market with a purpose to reproduce the conditions of one national market on a Community-wide scale⁵². However, although some harmonisation has taken place on a Community level, IP rights are still to a large extent granted by national laws and enforced on a national basis⁵³. Therefore, the owner of an IP right in one Member State can prevent the importation of products lawfully marketed in another by suing for infringement of his rights, which leads to a conflict with the Community provisions on the free movement of goods and services⁵⁴.

⁵¹ Burrone, E., Jaiva, G.S., “Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises”; World Intellectual Property Organization (WIPO), p.3

⁵² Bellamy & Child, “European Community Law of Competition”, Sweet & Maxwell, Fifth Edition, p.611

⁵³ Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.687

⁵⁴ Ibid, p.612

EC Treaty itself does not contain much about intellectual property⁵⁵. Through Article 295 EC (ex Article 222), however, the Treaty puts forward a general rule about property rights, which is: “*This Treaty shall in no way prejudice the rules in Member States governing the system of property ownership*”. Apart from that, the Community has developed four tools to resolve the problems that IP rights raise for competition law and the operation of the single market⁵⁶. These are:

- Articles 28 and 30 EC (ex 30 and 36) to ensure the functioning of the internal market;
- Articles 81 and 82 EC to get to the bottom of the conflicts with competition;
- Series of block exemptions, particularly Regulation 772/2004 on Technology Transfer Agreements (the TTBER);
- Harmonisation attempts in certain IP fields, which is exemplified by the attempt to build a Community patent.

4.2 Provisions on Free Movement of Goods and Services

As mentioned above, the Treaty recognises protection of rights given by the national law through the Article 295 EC (ex Article 222). However, this recognition conflicts with the principles of free movement of goods and services.

Article 28 EC (ex Article 30) necessitates the elimination of quantitative restrictions on imports and exports and all measures having equivalent effect between Member States⁵⁷. Therefore, due to the mutual recognition principle of the EC Law, if a product is lawfully produced and marketed in a Member State, it should be able to be sold in another unless it can be justified under Article 30 EC (ex Article 36)⁵⁸. Article 30 EC provides that the prohibition in Article 28 is subject to an exception if the measure in question is “... *justified on the grounds*

⁵⁵ Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.687

⁵⁶ Bellamy & Child, “European Community Law of Competition”, Sweet & Maxwell, Fifth Edition, p.612

⁵⁷ Steiner, J., Woods L., “Textbook on EC Law”, Oxford, 8th edition, p.188

⁵⁸ cf. Article 30 (ex Article 36) EC Treaty

of...the protection of industrial and commercial property”⁵⁹. However, it should be noted that Article 30 EC comes with a last sentence stating, “*Such prohibitions or restrictions shall not, however, constitute a means of arbitrary discrimination or disguised restriction on trade between Member States*”. Therefore, while Article 30 EC provides the derogation, it also confirms that intellectual property rights could be of equivalent effect to quantitative restrictions⁶⁰.

Intellectual property rights raise similar dilemma with free movement of services. Article 49 EC⁶¹ (ex Article 59) prohibits “... *any restrictions on freedom to provide services within the Community...*” without providing any derogation as Article 30 does for the goods. Yet, the case law of the European Court of Justice (ECJ) demonstrates that Article 30 should be applied to it by analogy⁶².

Some linkages have been developed by the case law of the ECJ to ensure the functioning of the single market together with the protection of the nationally based intellectual property rights⁶³ (See Appendix III for the related cases). First of all, a distinction has been drawn between the “existence” and “exercise” of IP rights, where the existence of rights is unaffected by the EC Law but their exercise may be⁶⁴. This was followed by the concept of “specific subject-matter”, which provides that the exercise of IP rights, which partitions the market, be justified under Article 30 EC if such exercise is for safeguarding the specific subject matter⁶⁵. Final linkage between single market and the protection of the IP rights was provided through the “exhaustion of rights”. This concept provides that the previous marketing of a protected product within the Community exhaust the rights covered in the specific subject matter. Yet, it should be noted that this rule does not apply where the products have been put on the market outside the

⁵⁹ Bellamy & Child, “European Community Law of Competition”, Sweet & Maxwell, Fifth Edition, p.614

⁶⁰ Korah, V., “Introduction to EC Competition Law and Practice”, Hart Publishing, 7th edition, p.259

⁶¹ cf. Article 49 (ex Article 59) EC Treaty

⁶² Jones, A., Sufin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.694

⁶³ Ibid, p.694

⁶⁴ Ibid, p.694

⁶⁵ Ibid footnote 59, p.615

Community⁶⁶. These are the tools of ECJ to ensure the balance between IP rights and the functioning of the internal market.

4.3 Licences of Intellectual Property Rights

As mentioned before, the owner of an intellectual property right has the monopoly over its product or work, and has the right to choose between the ways to benefit from this right commercially⁶⁷. The right may be exploited by the holder himself, or be assigned to a third party, or else be licensed.

An *assignment* can be defined as “the outright transfer of the right to a third party”, where, after the transfer, the original owner is excluded from using it without the consent of the new owner⁶⁸. A *licence*, on the other hand, involves the permission conferred by the owner of the right to another party to exploit the former’s legally protected exclusive right⁶⁹.

Commercial Considerations in Licensing

The holder of the IP right naturally desires to maximize his financial return when granting the licence, and therefore may be concerned with incorporating in a licence agreement some provisions to achieve this purpose. However, the extent to which these commercial requirements can be met is bound to the provisions of competition law⁷⁰.

Article 81 (1) EC⁷¹ provides that “*The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade Member States and which have the object or effect of the prevention,*

⁶⁶ Bellamy & Child, “European Community Law of Competition”, Sweet & Maxwell, Fifth Edition, p.616

⁶⁷ Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.694

⁶⁸ Ibid, p.698

⁶⁹ Ibid, p.698

⁷⁰ Ibid, p.699

⁷¹ cf. Article 81 EC Treaty

restriction or distortion of competition within the common market...". A licence only allows the licensee to exploit the rights, allowing it to do what would otherwise be unlawful. Therefore, licensing by itself clearly does not infringe Article 81 unless it is coupled with other obligations that have the object or effect of restricting competition in some way⁷².

Several common issues regarding the licensing agreements that commonly raise the concerns about competition provisions of the EC Treaty are as follows: Royalties for the licence paid by the licensee may raise the competition concerns when the licensor intends to determine the minimum amount to be produced for the royalties calculated on the basis of individual product sales⁷³. Territorial restrictions on production is another issue in the case of exclusive and sole licences, where the licensor guarantees that no further licences will be provided for the same territory. This condition is connected with portioning the market, as in *Consten and Grundig* case analysed in the Appendix III, and therefore conflicts with the competition law⁷⁴. Moreover, sales restrictions, which can be in the form of territorial sales restrictions determining where the parties may sell and customer allocation limiting the customer groups that parties may sell, is another form of requirement that competition provisions are concerned with⁷⁵. The licensor may also be concerned with allowing the licensee to exploit the technology only within certain technical fields of application⁷⁶. Tying and bundling are other common attempts by the licensors, where the licensing of one technology is conditional upon the licensee taking a licence for another tied technology from the licensor or where two technologies – or a technology and a product - are sold together as a bundle⁷⁷. If these agreements are not indispensable for the technically proper exploitation of the licensed technology, it falls under

⁷² Korah, V., "Introduction to EC Competition Law and Practice", Hart Publishing, 7th edition, p.282

⁷³ Jones, A., Sufin, B.; "EC Competition Law, Text, Cases and Materials"; Oxford, Second Edition, 2004, p.699

⁷⁴ Ibid, p.700

⁷⁵ Ibid, p.700

⁷⁶ Ibid, p.701

⁷⁷ Ibid, p.701

Article 81(1)⁷⁸. An analysis of the case law on the licensing of the intellectual property rights can be found in Appendix III.

4.4 The Block Exemptions on Patent and Know-How Licensing

Prior to 1 May 2004

Block Exemptions can be defined as "The regulations, issued by the Commission or by the Council pursuant to Article 81(3) of the EC Treaty specifying the conditions under which certain types of agreements are exempted from the prohibition of restrictive agreements laid down in Article 81(1) EC Treaty"⁷⁹. Individual notification is therefore unnecessary when an agreement fulfils the conditions set out in a block exemption regulation. The purpose of the block exemptions is to decrease the workload of the Commission. Various types of block exemption regulations are present for different topics, such as vertical agreements, R&D agreements, specialisation agreements, technology transfer agreements and car distribution agreements. For the purpose of this paper, the focus will be on the block exemptions on technology transfer agreements.

Prior to the TTBER, the Regulation 240/96⁸⁰ was on duty to cover block exemptions on certain technology transfer agreements pursuant to Article 81(3) of the EC Treaty⁸¹. This regulation had replaced two regulations; Regulation 2349/84⁸² and Regulation 556/89⁸³, one conferring the licences of patents and the other for the licences of know-how. The new regulation thus included any transaction in which the predominate element was the licensing of patents or know-how. It was distinguished by the previous regulations with a shortened black-list of prohibited clauses and a longer white-list, which demonstrates the

⁷⁸ Bellamy & Child, "European Community Law of Competition", Sweet & Maxwell, Fifth Edition, p.656

⁷⁹ http://europa.eu.int/comm/competition/general_info/b_en.html

⁸⁰ Regulation 240/96, (1996), OJ L 31/2

⁸¹ Whish, R., "Competition Law", LexisNexis, 5th edition, 2003, p.746

⁸² Regulation 2349/84, (1984), OJ L 219/15

⁸³ Regulation 556/89 (1990), OJ L 257/15

Commissions further experience of what really distorts competition⁸⁴. Having reviewed the application of this regulation in December 2001, the Commission reported that the regulation was too formalistic, narrow and ‘straitjacketing’, catching some pro-competitive agreements while missing anti competitive ones⁸⁵. Therefore, Regulation 774/2004⁸⁶ was adopted on 1 May 2004 on technology transfer agreements.

Regulation 774/2004 on Technology Transfer Agreements and the Guidelines

Up to date, the first getaway for undertakings regarding the restrictive agreements of their licence agreements is through the Regulation on Technology Transfer Agreements (the TTBER). It is stated in the Guideline; “... *many licence agreements fall outside Article 81(1), either because they do not restrict competition at all or because the restriction of competition is not appreciable (cf. paragraph 23). To the extent that such agreements would anyhow fall within the scope of the TTBER, there is no need to determine whether they are caught by Article 81(1) (cf. paragraph 24)*”⁸⁷. Accordingly, the undertakings need to consider the application of Article 81 only if the licensing agreement does not fall within TTBER⁸⁸. The Commission set out its approach to the application of Article 81 to intellectual property rights in TTBER from the fifth paragraph to the ninth. However, it should be noted that the Guidelines are not binding for the ECJ and that the Guidelines reflect the existing case law of the Court⁸⁹.

4.5 General Principles on the Application of Article 81 to IPR

As mentioned before, Article 81(1) prohibits the agreements that may affect trade between Member States and that has the object or effect of restricting

⁸⁴ Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.711

⁸⁵ Ibid, p.712

⁸⁶ Regulation 772/2004, (2004), OJ L 123/11

⁸⁷ Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements, OJ C101/2, p.7

⁸⁸ Ibid footnote 84, p.715

⁸⁹ Ibid footnote 84, p.716

competition. As an exception to this provision, Article 81(3) provides that; *“The provisions of paragraph 1 may, however, be declared inapplicable in case of any agreement..., any decision..., any concerted practice..., which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefits and which does not impose restrictions which are not indispensable to the attainment of these objectives and do not afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products concerned”*⁹⁰.

In the Guidelines of the TTBER, the Commission recognises the intellectual property rights and their exercise by the holders. The principle of Community exhaustion, where the intellectual property right is exhausted once a product incorporating an intellectual property right has been put on the market inside the EEA⁹¹ by the holder or with his consent, is also covered⁹².

In the seventh paragraph of the Guidelines, on the other hand, it is made clear that IP rights are not immune from competition law intervention. It is also stressed that both competition law and intellectual property rights share the same fundamental objective of promoting consumer welfare and an efficient allocation of resources; and that both bodies of law are necessary to promote innovation and ensure a competitive exploitation thereof. Moreover, the eighth paragraph points out that the innovator should normally be able to seek compensation for their investments on innovation. It also covers that the risks facing the parties and the sunk investments made in the technology and production should be taken into account in technology licensing, which may lead to the agreement falling outside Article 81(1) or fulfilling the conditions of Article 81(3) for the period of time required to recoup the investment. Finally, it is mentioned in the ninth paragraph that most licence agreements do not restrict competition and that they rather create pro-competitive

⁹⁰ cf. Article 81 EC Treaty

⁹¹ European Economic Area, consisting of the Member States of the European Union together with Norway, Iceland and Liechtenstein, which was created by EEA Agreement entered into force on 1 January 2004

⁹² Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements, OJ C101/2, p. 1

efficiencies leading to dissemination of technology and promoting innovation. It is concluded that the great majority of licence agreements are therefore compatible with Article 81, provided that they do not have the effect or objective of distorting competition and that they cannot be justified by Article 81(3).

4.6 Article 82 and Intellectual Property Rights

Article 82 EC⁹³ provides, “*Any abuse by one or more undertakings of a dominant position within the common market or a substantial part of it prohibited as incompatible with the common market in so far as it may affect trade between Member States*”. There are two conditions to fall under these provisions, one being the existence of a dominant position and the other one being the abuse of the dominant position. Therefore, not the size itself, but the abusive behaviour is prohibited by Article 82⁹⁴.

When considering the intellectual property rights in particular, “the basic principle is that so far as a dominant position is concerned, it is to be remembered at the outset that mere ownership of an IP right cannot confer such a position”⁹⁵. The fact that the IP right holder has the monopoly over its right does not mean that it has a dominant position in the competition sense. The “relevant market” for the product in question should be examined. If the relevant market is determined to be wide, the IP right will not in itself create dominance, yet if the market is narrowed to cover only the protected product then there will be monopoly since the right will result in a barrier to entry to new products or supply substitution⁹⁶. The Commission and the ECJ often had the tendency to define narrow markets, which naturally resulted in conclusions of dominance⁹⁷ (See Appendix III for the related case law).

⁹³ cf. Article 82 EC Treaty

⁹⁴ Korah, V., “Introduction to EC Competition Law and Practice”, Hart Publishing, 7th edition, p.80

⁹⁵ Jones, A., Sufirin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.763

⁹⁶ Ibid, p.763

⁹⁷ Ibid, p.764

4.7 Harmonisation of Intellectual Property Rights

As observed from the previous sections, differences of IP rights between Member States may divide the internal market. Therefore, the Commission, as a part of the programme for the internal market in 1992, proposed directives to the Council to harmonise intellectual property rights where the differences were capable of partitioning the internal market⁹⁸.

Copyrights, for instance, used to last for different periods in different Member States. In *EMI v Patricia*⁹⁹, the ECJ ruled that copyright might be invoked where the copyright had expired in the country of origin, but not where the goods were sold¹⁰⁰. This ruling resulted in the division of the market. Therefore, harmonisation took place in the field of copyrights on the basis of raising the protection to the highest in any Member State. The software directive¹⁰¹ and the directive on legal protection of databases¹⁰² are the most recent document determining copyrights issues within the Community. However, it should be noted that there are still differences in the implementation of the provisions stated within the directive¹⁰³. Therefore, it cannot be concluded that the directive achieved full harmonisation in the internal market. Trademark directive¹⁰⁴, on the other hand, provides the basis for the approximation of laws of the Member States relating to trademarks.

4.7.1 Community Patent

The Community patent, introduced by the Community Patent Convention, aims to unite the bundle of protection rights resulting from the grant of a European patent and merge them into a single, unitary and autonomous, protection right valid

⁹⁸ Korah, V., "Introduction to EC Competition Law and Practice", Hart Publishing, 7th edition, p.275

⁹⁹ Case 341/87 (1989), ECR 79, paragraph 12

¹⁰⁰ Ibid footnote 98, p.275

¹⁰¹ Directive 91/250, OJ 1991, L122/42

¹⁰² Directive 96/9, OJ 1996, L77/20

¹⁰³ Ibid footnote 98, p.275

¹⁰⁴ Directive 89/104, OJ 1989, L40/1

throughout the Community. However, the Convention has yet to take effect owing to delays in ratification by the Member States¹⁰⁵.

Most recent development on the issue is that in the Competitiveness Council of Ministers, in March 2004, the Council failed to reach agreement on the proposed Regulation creating a Community Patent¹⁰⁶, even if there was agreement on the broad outlines in March 2003.

It should be noted that the failure to agree on the Community Patent more than two years after the deadline set by the Lisbon European Council, undermines the credibility of the whole enterprise to make Europe the most competitive economy in the world by 2010¹⁰⁷.

4.7.2 The patentability of computer programs and software-related inventions

The patent protection was agreed to be extended to computer-implemented inventions by the Council in 2004¹⁰⁸. This broadening activity led to some conflicting ideas among the experts within EU.

Internal Market Commissioner Frits Bolkestein said: “This Directive adopted will provide a major contribution to European competitiveness and assist the proper functioning of the Internal Market. It is nothing more than basic common sense to make sure that inventions are not excluded from patent protection simply because they use computer software”. On the other spectrum, there are some criticisms on the patentability of computer-implemented innovations. A Member of European Parliament Lena Ek stated, for instance, that while the patents aims provide

¹⁰⁵ Green Paper on Community Patent and Patent System in Europe, Brussels, 1997, p.2

¹⁰⁶ Proposal for a Council Regulation on the Community Patent, (doc. 7119/04), Brussels, March 2004

¹⁰⁷ Results of the Competitiveness Council of Ministers, “Internal Market, Enterprise and Consumer Protection issues”, Brussels, 2004

¹⁰⁸ Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.691

protection for the inventions, patenting every single stage of the innovation process might, at the end, hamper further innovation by other parties¹⁰⁹.

Computer-implemented inventions can already be patented by applying to either the European Patent Office (EPO) or the national patent offices of the Member States. Yet, differences in enforcement of between Member States can represent a significant barrier to trade in patented products within the Internal Market. The proposed Directive, therefore, aims to harmonise the way in which national patent laws deal with computer-implemented inventions¹¹⁰.

4.8 Conclusion

Together with other factors promoting innovation, regulations ensuring a well functioning IPR system can be said to have a positive effect on the introduction of new products and services by protecting the inventor from imitation by competitors.

As observed throughout the analysis of the Community Law, it is not only the traditional intellectual property rights, such as patents, that are gaining importance within the Community. Directive 98/84/EC¹¹¹ provides a minimum level of equivalent protection within the EU of electronic pay-services, such as pay-TV, radio and internet services, against piracy. Council Regulation 6/2002¹¹² regulates Community designs and Commission Regulation 2245/2002¹¹³ implements it. The Community trade mark was already regulated by Council Regulation 40/94¹¹⁴, which is most recently updated by Council Regulation 422/2004¹¹⁵. Databases, on the other hand, are protected by Directive 96/9/EC¹¹⁶. The increasing importance

¹⁰⁹ Seminar on European Business, Law and Politics Topics, Ek, L., Member of European Parliament, Lund University, 18.04.2005

¹¹⁰ Press Release, (2004), "Patents: Commission welcomes Council agreement on Directive on computer-implemented inventions", Brussels, 2004

¹¹¹ Directive 98/84, OJ 1998, L 320/54

¹¹² Council Regulation 6/2002 (2002), OJ L 003

¹¹³ Commission Regulation 2245/2002, OJ L 341/28

¹¹⁴ Council Regulation 40/94 (1994), OJ L 011

¹¹⁵ Council Regulation 422/2004 (2004), OJ L 070

¹¹⁶ Directive 96/9 (1996), OJ L 77

of knowledge brought together the need in the Community to harmonise certain aspects of copyright and related rights, which is the substance of Directive 2001/29¹¹⁷.

Overall, it can be observed that IP rights are being extended to new fields. Yet, it should be mentioned that even though stronger intellectual property rights create stronger incentives to invest in R&D and innovation, the intensive discussion about patentability of software-related inventions makes clear that too strong and too many IPR make innovation also more difficult and risky¹¹⁸.

On the other hand, increasing world trade, availability of pirated import goods from developing countries and the opportunity to distribute digital content worldwide via the internet has led to increasing infringement of intellectual property rights¹¹⁹. The Community took action against these trends with regulations, namely; Council Regulation 241/1999¹²⁰ defining measures to prohibit the release for free circulation, export, re-export or entry for a suspensive procedure of counterfeit and pirated goods; Council Regulation 953/2003¹²¹ aiming to avoid trade diversion into the European Union of certain key medicines and Commission Regulation 1876/2004¹²² amending Annex I of Regulation 953/2003; and finally the recent Council Regulation 1383/2003¹²³ defining customs action against goods suspected of infringing certain intellectual property rights and the measures to be taken against goods found to have infringed such rights. The reason why all these regulations have a very strong impact on the innovation activities of companies in the Member States is that they attribute IPR to the output of their R&D activities¹²⁴.

¹¹⁷ Directive 2001/29 (2001), OJ L 167

¹¹⁸ Institute Systems and Innovation Research, "New Products and Services: Analysis of Regulations Shaping New Markets", Karlsruhe, February 2004, p 40

¹¹⁹ Ibid, p 40

¹²⁰ Council Regulation 241/1999 (1999), OJ L 27/1

¹²¹ Council Regulation 953/2003 (2003), OJ L 135/5

¹²² Commission Regulation 1876/2004 (2004), OJ L 326/22

¹²³ Council Regulation 1383/2003 (2003), OJ L 196/7

¹²⁴ Ibid footnote 118, p 40

One central hypothesis about the relationship between regulation and innovation is based on the assumption that it is possible to trigger innovation by setting adequate incentive structures or by forcing sanctions on the involved actors¹²⁵. Council Directive 2004/48¹²⁶, which was to be implemented in May 2004, ensures the enforcement of intellectual property rights by addressing the major disparities between Member States as regards the means of enforcing intellectual property rights¹²⁷.

Therefore, enhanced scope of the IPR has been coupled with measures undertaken to regulate the increasing number of infringements within the Community. Consequently, the possibility to acquire IPR of the goods and work invented and the effective persecution of infringements provide incentives for companies to invest in R&D and to bring new products and services to the market¹²⁸.

Increasing awareness on IPR

The ability to create, access and use knowledge has become increasingly important for the global competitiveness of enterprises and economies in the contemporary markets. This centrality of knowledge as a source of productivity gain and competitiveness has recently placed the intellectual property system at the centre stage of the knowledge economy¹²⁹. This fact is demonstrated by the significant increase in patent applications and patent grants in patenting during last decades, which is even more obvious in knowledge-based industries such as biotechnology, and information and communication technologies (ICT). Since 1993, for example, the growth of biotechnology-related patent applications in the European Patent Office (EPO) has been 14.3% a year, compared to 8.3% for all patent applications¹³⁰.

¹²⁵ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p 83

¹²⁶ Council Directive 2004/48 (2004), OJ L 157

¹²⁷ Council Directive 2004/48, p.3

¹²⁸ Ibid footnote 125, p 40

¹²⁹ Burrone, E., Jaiva, G.S., “Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises”; World Intellectual Property Organization (WIPO), Geneva, p.3

¹³⁰ Ibid, p.3

The increased emphasis put on patents can be explained by a variety of reasons¹³¹. First of all, contemporary markets based on knowledge placed increasing importance on intangible assets as the source of competitive advantage for firms, thus increasing the need to have such assets protected. Secondly, increasing outsourcing activities of large companies due to cost constraints has also intensified the need for outsourcing companies to retain ownership over the innovative and creative aspects of their products. Moreover, increased international harmonisation of the IP system, and easier access to, and more effective enforcement of, IP rights especially within Europe, has created incentives for firms to use IP systems more. The expansion of patentable subject matter, such as in the case of the proposed directive to extend patent protection to computer software, is also a significant aspect.

As illustrated above, more active utilization of the IP systems reflect a higher perceived value of ownership of IP rights in the “century of knowledge”¹³².

This increasing awareness can also be observed in the recent developments in the Community approach as well. In recent years, the Commission’s competition policy has tended to be more adjusted to the economic reality of the market and to the need to encourage innovation and the transfer of technology than was before. The same attitude is demonstrated by the ECJ in its case law, which has moved in a more favourable direction to the protection of national IP systems¹³³. Yet, it should be noted that there is still some room for harmonisation, which might have further contributions to innovation within the Community.

Having analysed the regulatory framework on intellectual property rights in European Union, the results of the company survey conducted by the Institute Systems and Innovation Research will be discussed in the following part, in order to have a better understanding of the relevance and impacts of regulation for innovation from the enterprises’ perspective.

¹³¹ Burrone, E., Jaiva, G.S., “Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises”; World Intellectual Property Organization (WIPO), Geneva, p.4

¹³² Ibid, p.4

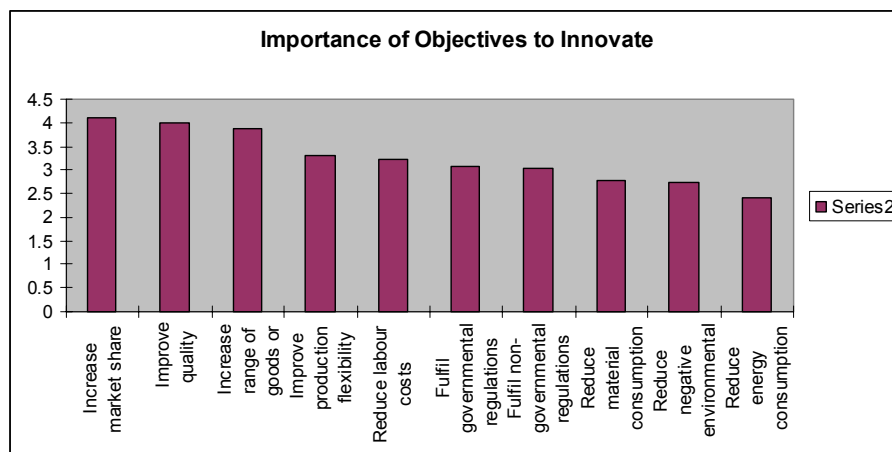
¹³³ Bellamy & Child, “European Community Law of Competition”, Sweet & Maxwell, Fifth Edition, p.613

5 Role of Regulation on Innovation: Enterprises' Perspective

The main elements to be covered, in line with the Institute Systems and Innovation Research survey, are the objectives of innovation activities, factors hampering innovation, the importance of regulations relevant for the introduction of new products and services, and the impact of regulations on new products and services¹³⁴.

5.1 The objectives of Innovation Activities

As mentioned before, adequate incentive structures or sanctions on the involved actors are assumed to trigger innovation and to stimulate the development and market introduction of new products and services. The validity of this assumption can be questioned by an analysis of the objectives of the actors for their innovation activities.



Graph 2 Importance of Objectives to Innovate¹³⁵

Graph 2 reveals that most important motivations for companies to innovate are increasing market share, improving quality, increasing range of goods, whereas the least important factor is decreasing energy consumption as can be observed

¹³⁴ Ibid footnote 36, p 80

¹³⁵ Ibid footnote 36, p 83

from the above graph. Importance of fulfilling regulations demonstrates above average importance according to the graph. This supports the hypothesis that regulations provides an important incentive to innovate¹³⁶. Yet, it should be noted that significant differences can be observed between sectors. For instance, governmental regulations, such as directives, are more important for the pharmaceutical sector, the food sector and the environmental sector than the non-governmental regulations since these sectors are concerned with more risky issues, such as health and safety. On the other hand, non-governmental regulations are the priority for the companies in engineering, transport and telecommunication, and other services sectors, since the development and functioning of these sectors with network characteristics rely strongly on formal and informal standards¹³⁷.

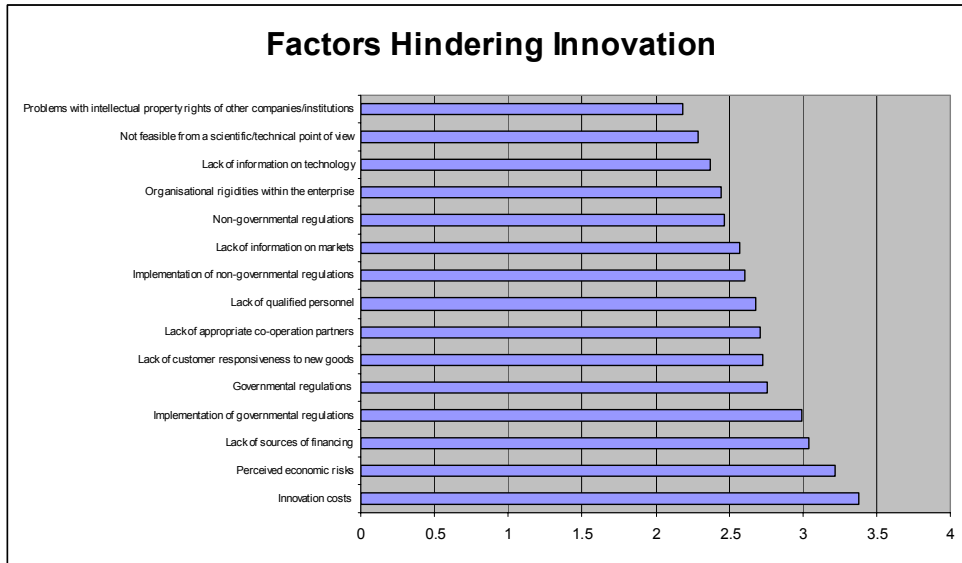
5.2 Factors Hindering Innovation

While regulations provide the essential infrastructure for companies to operate effectively, they also have a hampering effect since it is costly to change well-established rules, standards, and laws due to the transaction costs, both for the institutions responsible for the regulations and for the parties affected by regulation. Moreover, dynamic nature of the contemporary markets continuously challenges the existing regulatory frameworks, which results in additional costs and barriers for the parties. For the reasons mentioned above, by restricting companies in their R&D and marketing activities, regulations can have a negative effect on innovation¹³⁸.

¹³⁶ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p 83

¹³⁷ Ibid, p 84

¹³⁸ Ibid, p 85



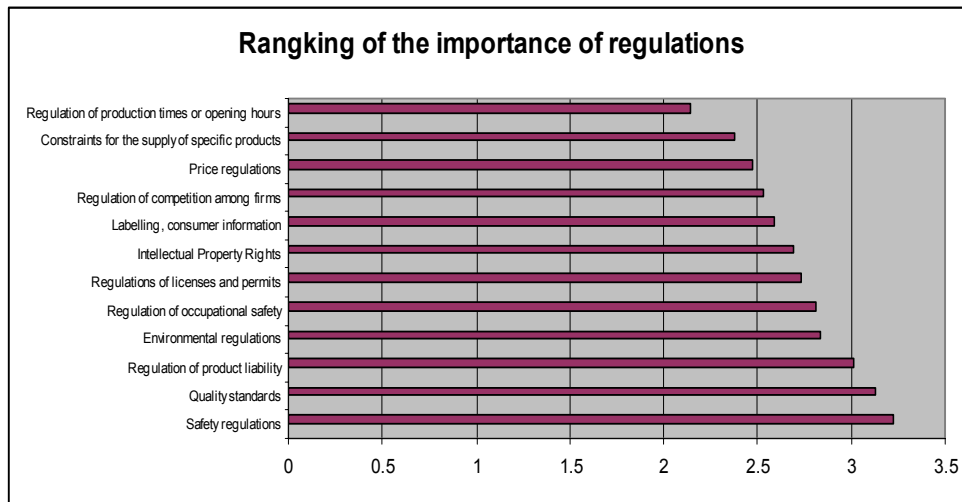
Graph 3 Factors Hindering Innovation¹³⁹

The graph above demonstrates that cost related factors, such as high innovation costs, excessive economic risks and lack of sources of financing are the most significant concerns for the companies when developing and introducing new products and services into the market. Although intellectual property rights of other companies and institutions is not in itself the most relevant issue as read from the graph, it is still observed to be a relatively important hampering factor, especially when considered parallel to the perceived difficulties in implementing governmental regulations. Besides, it should be noted that different sectors demonstrate different sensitivities regarding the factors. In the case of pharmaceutical companies, for instance, the perceived excessive economic risks of innovation projects and intellectual property rights issues are significantly higher than the rest of the sectors¹⁴⁰.

¹³⁹ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p 85

¹⁴⁰ Ibid, p 86

5.3 Importance of Different Types of Regulations for Innovation

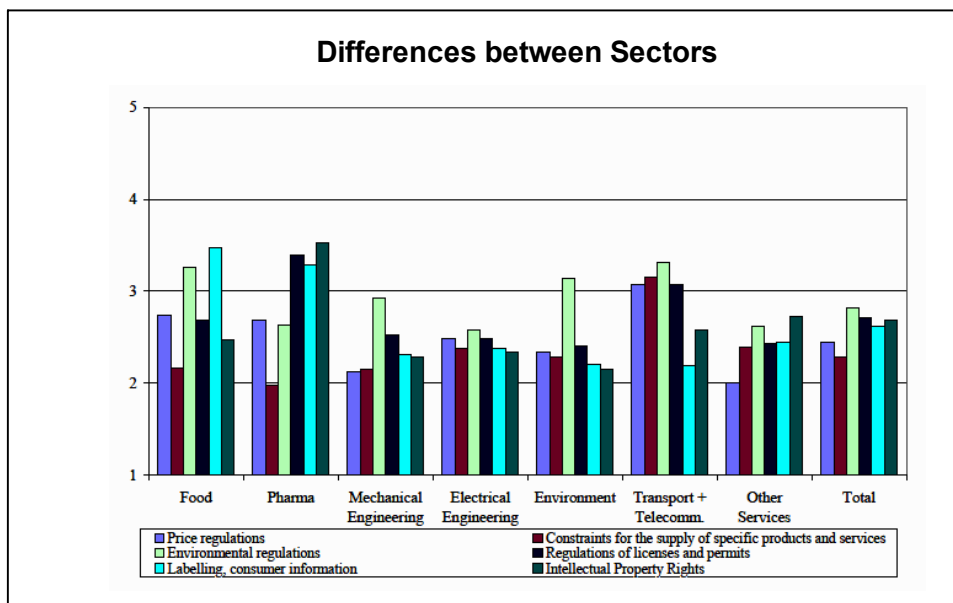


Graph 4 Ranking of the Importance of Regulations¹⁴¹

An observation of the graph ranking different types of regulations reveal that safety regulations are the most important ones for the development and introduction of new products and services, followed by the quality standards, whereas regulations of production times or opening hours are the least relevant. It can be concluded that the regulations aiming to protect consumers from damages caused by the consumption of products and services are the highest in the ranking¹⁴². Although they are of less importance, intellectual property rights reserve their places above average, followed by the regulations of licences and permits, which demonstrate that these two types of regulations cannot be ignored by the companies when innovating new products or services. Yet, it should again be noted that differences are observed between the sectors regarding the importance of the factors affecting innovation negatively.

¹⁴¹ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p 89

¹⁴² Ibid, p 89



Graph 5 Differences between Sectors Regarding the Factors Hindering Innovation¹⁴³

Graph 6 demonstrates that there are differences both for the extent to which regulations affect sectors in general and for the effects of different types of regulation on different sectors. That is to say, whereas total set of regulations are more important for some sectors, such as pharmaceutical, food, transport and telecommunications, they are of less importance for the rest of the sectors. On the other hand, intellectual property rights regulatory framework specifically is the most crucial type of regulation for pharmaceuticals, while somewhere average for mechanical engineering and least important for environment sector. The reason why protection of IP rights and patenting is less important in manufacturing industries is that it is more difficult to appropriate R&D results through patenting in those sectors¹⁴⁴.

¹⁴³ Institute Systems and Innovation Research, “New Products and Services: Analysis of Regulations Shaping New Markets”, Karlsruhe, February 2004, p 90

¹⁴⁴ Burrone, E., Jaiva, G.S., “Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises”; World Intellectual Property Organization (WIPO), p.5

5.4 Impact of Regulations on New Products and Services

As discussed in the previous section, regulations may be a hampering as well as a promoting factor for the development and marketing of new products and services.

The survey among the companies in Europe, conducted by Institute Systems and Innovation Research, reveal that the companies perceive negative influences for the input factors labour, energy and other materials when assessing the possible impacts of regulations¹⁴⁵. On the positive side, regulations foster the quality of products and services; protect the environment, health and safety of both consumers and the working force. Moreover, they provide framework conditions for legal certainty, which has a crucial influence particularly on the innovative behaviours of entrepreneurs¹⁴⁶. It should be noted that sectors once more demonstrate differences regarding whether they perceive total impact of the regulatory framework negatively or positively for the development and introduction of new products and services. While the regulatory framework as a whole has the most positive influence for the development of new products and services in mechanical engineering and other services; it has ambivalent influence in the pharmaceutical sector, since pros and cons outweigh each other, and even a negative influence in the food sector due increasing costs and the time lag required to fulfil regulatory requirements¹⁴⁷.

Concluding all the analysis done above, it can be said that different impacts of regulations, as a whole or specifically, on innovation underline the differences between sectors, which need to be taken into account when reforming the regulatory framework. It should also be noted that not only the companies but also other stakeholders, such as research institutes, in all sectors complain about the

¹⁴⁵ Institute Systems and Innovation Research, "New Products and Services: Analysis of Regulations Shaping New Markets", Karlsruhe, February 2004, p 92

¹⁴⁶ Ibid, p 92

¹⁴⁷ Ibid, p 93

incomplete harmonisation of the regulatory framework and the differences between the implementation of regulations between countries as well as within countries. This is a serious problem of regulations relevant for the introduction of new products and services due to the risk it adds to an already rather risky process¹⁴⁸. That is why the Community takes actions to achieve harmonisation and to ensure the implementation of the regulations in key fields, such as intellectual property rights.

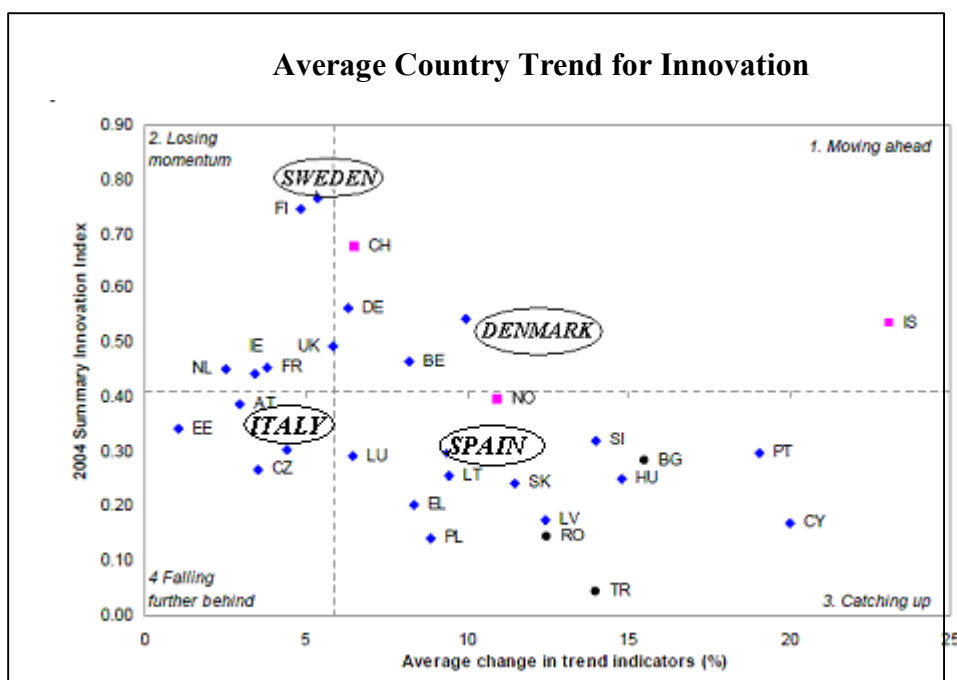
However, despite the actions taken to achieve the harmonisation with an ultimate objective of ensuring the functioning of the internal EU market, different practices can be observed in different Member States regarding their intellectual property rights systems due to the diversity of the framework conditions, cultural differences and political priorities in those states¹⁴⁹. The next chapter will discuss these differences between four Member States, which will then be followed by an analysis of the innovation performances of those countries with reference to their intellectual property protection practices.

¹⁴⁸ Institute Systems and Innovation Research, "New Products and Services: Analysis of Regulations Shaping New Markets", Karlsruhe, February 2004, p 136

¹⁴⁹ European Trend Chart on Innovation, p.2

6 Country comparison

The countries to be compared and contrasted regarding their innovation behaviours and intellectual property rights practices in current terms compared to their medium-term performances throughout this chapter are Sweden, Denmark, Italy and Spain, which are selected due to their diverse positions in the country innovation trend chart (See Graph 7).



Graph 6 Average Country Trend for Innovation¹⁵⁰

An observation of Graph 7 reveals that 2004 Summary Index, the vertical axis of the graph, stands for the current innovation performance of countries while the average change in trend indicators, the horizontal axis, represent the medium-term trend performance, and the dotted lines is equivalent to the EU average. That is to say, the graph demonstrates the comparison of current and medium-term innovation behaviours of the countries. Accordingly, countries above the EU average both in the current and medium term are labelled as *moving ahead*, countries below the average current performance but with an above average trend

¹⁵⁰ Commission of the European Communities, (2004), Staff Working Paper: "European Innovation Scoreboard", Brussels, 2004, p. 10

performance are called *catching up*, countries with a below the average in both of the categories are *falling further behind*, and countries with an above average current performance and a below average trend are named *losing momentum*. For the purpose of this paper, one Member State from all of those quadrants is picked in order to understand the differences between their innovation performances versus their intellectual property protection practices.

As a brief introduction observed from the graph, Sweden can be said to have remained as the innovator leader in 2004, yet it is losing momentum with below EU average regarding its average trend. Denmark, on the other hand, is moving ahead in the medium-term, however, it is still lagging behind Sweden with above the EU average for current performance. Spain is catching up due to its positive average performance, although its current performance is below the EU average. Italy, on the other hand, has the position of falling further behind according to the Innovation scoreboard, since it demonstrates below average values both in current and in medium terms.

6.1 Sweden

6.1.1 Innovation Practices in Sweden

According to the European Trend Chart on Innovation, the Swedish national innovation system has its strengths in the education level of the workforce, stable macroeconomic conditions and a reliable institutional framework. The country's integration into global markets and the high level of R&D facilitates the reinforcement of these strengths. Yet, it is underlined in the report that there is a general lack of incentives for radical innovation and an inadequate use of scientific achievements, which might have the effect of hampering future economic¹⁵¹.

¹⁵¹ http://trendchart.cordis.lu/tc_country_pages.cfm

The Swedish economy is recovering somewhat more dynamically than expected¹⁵², with a real GDP growth rate of 3.6 percent in 2004¹⁵³. However, according to the analysis of the Swedish National Innovation System, Sweden has shown a relatively weak long-term competitiveness in terms of innovation, economic growth and job creation, despite large investments in the production, diffusion and use of knowledge, with an average performance for most of the period 1970–2003 far from the top in the OECD rankings¹⁵⁴. A gradual loss of efficiency in previously large R&D-intensive multinational groups, the relative lack of strong incentive and support structures for radical renewal and growth through knowledge-intensive start-ups and SMEs, weaknesses in sector innovation and value added in both the private sector and public sector and a number of problematic features that have developed in the Swedish labour force and labour market are the reasons for this trend in Sweden¹⁵⁵.

Several major policy challenges that need to be addressed are identified by the Swedish National Innovation System in order to improve the Swedish preconditions for creating long-term economic competitiveness. These challenges are the need to increase the start-up rate, innovation and growth in knowledge intensive SMEs, the need to improve the efficiency of human resource, the need to create a new regime for partnerships and the need to increase the volume and impact of mission-orientated research.

For the implementation of its innovation policy, Sweden focuses on three areas, namely fostering an innovative culture, establishing a framework conducive to innovation and gearing research to innovation. A deeper analysis of the framework addressing innovation, it is observed that competition, protection of intellectual and industrial property, administrative simplification, amelioration of legal and regulatory environments, innovation financing and taxation are the main

¹⁵² Commission of the European Communities Enterprise Directorate, (2004), “Annual Innovation Policy Report for Sweden, Covering period: September 2003 – August 2004”, Brussels, 2004, p.5

¹⁵³ <http://www.fsmitha.com/world/sweden.html>

¹⁵⁴ The Swedish Agency for Innovation Systems (VINNOVA), “The Swedish National Innovation System 1970-2003: A Quantitative International Benchmarking Analysis”, Marklund, G., Nilsson, R., Sandgren, P., Thorslund, J.G., Ullström, J, Stockholm, 2004, p.6

¹⁵⁵ Ibid, p.6

concerns of policy makers. For the purposes of this paper, the focus will be on the steps taken by Sweden to protect the IPR.

6.1.2 Protection of Intellectual Property in Sweden

According to Swedish law, researchers at universities keep the intellectual ownership of inventions and patents, which constitutes an exception from the general regulation on patents on ideas developed by employees¹⁵⁶. The reasoning behind this fact is to provide universities an incentive to become more active in promoting the commercialisation of research results, and to pass these rights to high education institutions that are better equipped than individual professors to look after intellectual property rights. However, this raises the question of conflict between academic freedom of communication and economic efficiency¹⁵⁷.

VINNFORSK report was presented in spring 2003 by VINNOVA, the Swedish Agency for Innovation Systems, proposing better conditions for exploiting the research results. The report suggests launching a programme to increase universities' ability to support the researchers in the process of commercialisation, while it leaves the issue of university researchers' right to keep the ownership of IP rights untouched. However, the programme has not been bought into life yet¹⁵⁸.

Patents & Licensing Offices were established during the 1990s at the major universities in Sweden to assist researchers in the patenting and licensing processes by supplying consultation, training in IPR various topics, applying for patents etc. The Swedish Patent and Registration Office, on the other hand, grants IP rights, registers companies and issues authorisations to publish periodicals, and offers a number of commission services and training courses. In November 2003, Swedish Government proposed dividing the agency into a Patent Office and a Company Registration Office, targeting to improve service levels and reducing waits at the Swedish Patent and Registration Office¹⁵⁹. Apart from the PRV

¹⁵⁶ Commission of the European Communities Enterprise Directorate, (2004), "Annual Innovation Policy Report for Sweden, Covering period: September 2003 – August 2004", Brussels, 2004, p.30

¹⁵⁷ Ibid, p.30

¹⁵⁸ Ibid, p.30

¹⁵⁹ <http://www.sweden.gov.se/sb/d/4037/m/wai/nocache/true/a/25791/dictionary/true>

authorities, very few public schemes exist that are exclusively aimed at encouraging the use of the IP rights¹⁶⁰.

One other important activity to be mentioned is that in April 2004, Swedish Government decided to set off an inquiry about the implications of patent protection on a company's economic growth. The purpose of the inquiry is to map Swedish companies' patent usage in comparison with those in foreign countries and to analyse the declining patent registrations in Sweden¹⁶¹.

6.2 Denmark

6.2.1 Innovation Practices in Denmark

Denmark has experienced declining or stagnating economic growth for the last ten years. The GDP real growth rate was merely 2.1% in 2004¹⁶², which demonstrated a significant progress compared to 0.5% in 2003¹⁶³. However, foreign debt has been reduced notably in the recent years, due to positive development in the trade balance. Moreover, Denmark has is still one of the richest countries in the world measured by per capita income¹⁶⁴.

Nevertheless, as observed from Graph 7, Denmark is in the 'moving ahead' category in the average country trend for innovation, which demonstrates that Denmark's overall innovation performance is satisfactory in the European context. Yet, it is still lagging behind Sweden, Finland, Switzerland and Germany in current terms, so there are still some areas for Denmark to cover to improve its performance to take place among the world leaders.

¹⁶⁰ Commission of the European Communities Enterprise Directorate, (2004), "Annual Innovation Policy Report for Sweden, Covering period: September 2003 – August 2004", Brussels, 2004, p.30

¹⁶¹ Ibid, p.31

¹⁶² <http://www.cia.gov/cia/publications/factbook/geos/da.html>

¹⁶³ Commission of the European Communities Enterprise Directorate, (2004), "Annual Innovation Policy Report for Denmark, Covering period: September 2003 – August 2004", Brussels, 2004, p.7

¹⁶⁴ Ibid, p.4

One of Denmark's strengths is its well functioning educational system, which helps to produce a highly skilled workforce. Yet, relatively small number of people with science and technology education could restrain future innovation performance. Besides, overall R&D investments in Denmark are still modest compared to the Barcelona objective as well as other best performers¹⁶⁵.

Denmark has restructured its entire research and innovation system in recent years to improve the long-run policy coordination, placing the overall responsibility for research and innovation policy with the Ministry of Science, Technology and Innovation. To enhance the development and application of knowledge, a number of private companies have been certified as 'Approved Technological Service Institutes', which can apply for public funding directed specifically towards the creation of knowledge and competencies¹⁶⁶. Special emphasis has been put on SMEs, innovative entrepreneurs and researchers.

It should be noted that Denmark does not have an overt stand-alone innovation policy. Yet, innovation is included as a distinct theme in various government policy documents¹⁶⁷. One of the most important developments in Denmark's innovation policy in the recent years is the 'Action Plan on Public-private Partnership on Innovation', which was initiated in September 2003¹⁶⁸. Moreover, a Foundation for High-tech development and a number of knowledge networks will be set up in Denmark to promote high-tech research and innovation through investments in strategic areas where Denmark has scientific and commercial competences.

Three areas lay at the centre for the implementation of the innovation policy in Denmark as in Sweden; fostering an innovative culture, establishing a framework conducive to innovation and gearing research to innovation. For the purpose of

¹⁶⁵ http://trendchart.cordis.lu/tc_country_pages.cfm

¹⁶⁶ http://trendchart.cordis.lu/tc_country_pages.cfm

¹⁶⁷ Commission of the European Communities Enterprise Directorate, (2004), "Annual Innovation Policy Report for Denmark, Covering period: September 2003 – August 2004", Brussels, 2004,

p.19

¹⁶⁸ Ibid, p.5

the paper, protection of intellectual property rights, which is embedded in the framework conducive to innovation, will be the focus of the analysis.

6.2.2 Protection of Intellectual Property in Denmark

The new law on patents, which came into force in January 2000, made it possible for universities, research institutions and public hospitals to take over the rights to inventions of their employees and negotiate terms of rights with companies. Together with that, the institutions are obliged to promote the commercial use of inventions¹⁶⁹.

Additionally, a project was applied in 2003 to improve electronic access to patents databases for companies and researchers, which is composed of a common entrance to Danish patents and utility models, electronic access to the complete collection of patent information of the Danish Patent and Trademark Office; and an Internet-based database comprising all publicly available information from the Danish patent database¹⁷⁰.

Furthermore, the Act on Technology Transfer at Public Research Institutions was recently passed through Parliament, allowing universities to establish a limited company responsible for the transfer of knowledge/technology to the private sector¹⁷¹.

6.3 Italy

6.3.1 Innovation Practices in Italy

Compared to Sweden and Denmark, Italy's business structure is based more on small and medium-sized firms. Increased number of SMEs has contributed significantly to the economic growth in Italy through employment creation and the very high national rate of entrepreneurship results in adaptability to the

¹⁶⁹ Commission of the European Communities Enterprise Directorate, (2004), "Annual Innovation Policy Report for Denmark, Covering period: September 2003 – August 2004", Brussels, 2004, p.26

¹⁷⁰ Ibid, p.26

¹⁷¹ Ibid, p.6

various policy impediments. The clusters of small firms, on the other hand, enable the achievement of economies of scale and high quality via through interactions between companies, as opposed to research activity in a more organised setting¹⁷².

Various measures to encourage innovation and technology have been developed in Italy, such as simplifications of the application procedures in order to encourage the participation of SMEs. One of the most recent key developments in innovation policy measures include a new law making it possible to reduce the taxable income by R&D costs, including those for obtaining a patent. Another new measure is a tax relief for researchers taking up residence in Italy, aiming at encouraging foreign researchers to Italy¹⁷³.

With an annual rate of 1.4%, Italy has been lagging behind Europe in economic growth terms over the last five years. Moreover, the country performs relatively poorly on the European Innovation Scoreboard, with only three indicators above the EU mean on the 2003 Scoreboard¹⁷⁴, which will be discussed further in the coming section.

The implementation of the innovation policy again focuses on fostering an innovative culture, establishing a framework conducive to innovation and gearing research to innovation. The framework for innovation is constructed by various parameters such as competition, protection of intellectual and industrial property, simplification of administrative procedures, amelioration of legal and regulatory environment, innovation financing and taxation. The paper will again merely deal with the intellectual property aspect of this framework.

6.3.2 Protection of Intellectual Property in Italy

In recent years, Italy has put more emphasis on the protection of intellectual property rights¹⁷⁵. For instance, 12 Intellectual Property Tribunals were established in June 2003, EC Directive 29/2001 on the harmonisation of certain

¹⁷² http://trendchart.cordis.lu/tc_country_pages.cfm

¹⁷³ http://trendchart.cordis.lu/tc_country_pages.cfm

¹⁷⁴ Commission of the European Communities Enterprise Directorate, (2004), “Annual Innovation Policy Report for Italy, Covering period: September 2003 – August 2004”, Brussels, 2004, p.1

¹⁷⁵ *Ibid*, p.21

aspects of copyright and related rights in the information society was adopted rapidly compared to other Member States, an anti-counterfeiting committee was established to co-ordinate the fight against piracy and counterfeited goods, and the current patent and trademark rules are reorganised and updated into a ‘single law’. Stronger protection for internet domain names and for the reorganisation of the Italian Patent and Trademark Office (PTO) was aimed at by the new legislation awaiting the Parliament's approval in 2004-2005. On-line users access to a new database of Italian patents and trademarks on file will be offered by PTO.

6.4 Spain

6.4.1 Innovation Practices in Spain

Spanish Innovation System can be said to be still in its initial stages. The importance of innovation is still not sufficiently considered by the private, or the public sector. The problem, in general, is that the success of different measures is still not systematically evaluated and there is a duplication of efforts. However, positive trends of different innovation indicators are promising in that there are good enough starting conditions for innovation to be boosted further. The government has undergone some changes in various innovation measures during the last twelve months, yet they are merely minor compared to other countries' efforts¹⁷⁶.

Spanish economy has grown over four percent recently although with a slow down to 2.5 % in 2003. These positive macroeconomic conditions do not reflect an increase in competitiveness, since the investments are concentrated in non-productive sectors¹⁷⁷.

Spain innovation performance figures in the European Innovation Scoreboard (EIS) are lagging behind other countries in Europe for most of the innovation indicators. Besides, even the indicators with positive trends are still far from the

¹⁷⁶ http://trendchart.cordis.lu/tc_country_pages.cfm

¹⁷⁷ Commission of the European Communities Enterprise Directorate, (2004), “Annual Innovation Policy Report for Spain, Covering period: September 2003 – August 2004”, Brussels, 2004, p.1

European mean. However, the positive overall Country Trend indicates that the Country is catching up from low current values.

Currently, the Spanish Science and Technology System is involved in a deep transformation process as a result of the change of Government in March 2004. Initiative ‘Digital Cities’ with an objective to implantate information society in a local environment; Initiative ‘Juan de la Cierva’ with an objective to incorporate doctors in public and private R&D Centres; the National Programme for the Promotion of Scientific and Technological Culture allowing the generation of information of quality about science and technology and the preparation of this information to be useful and understandable for most of people; and the National Programme for International co-operation in Science and Technology aiming to increase the level of Spanish Science and Technology, both in size and quality are the most recent measures taken by Spain to promote innovation¹⁷⁸.

Protection of intellectual property rights, as a tool to implement the innovation policy, will be once again under focus to analyse the innovation performance in Spain.

6.4.2 Protection of Intellectual Property in Spain

One of the most recent activities that took place in Spain is the approval of a fund aimed at developing projects of international cooperation of patents and trademarks in March 2004. Moreover, the Spanish Office of Patents and Trademarks (OEPM) implemented a programme in August 2003 in order to speed procedure to obtain patents, where it is necessary to obtain a patent urgently¹⁷⁹.

To sum up the differences between the innovative performances and intellectual property protection practices in the above analysed countries, it can be said that the two Nordic countries, Sweden and Denmark, are performing better in innovation terms and have a highly-structured IPR systems aiming to push the innovation further. Italy and Spain, as the Southern illustrations of the paper, are

¹⁷⁸ Commission of the European Communities Enterprise Directorate, (2004), “Annual Innovation Policy Report for Spain, Covering period: September 2003 – August 2004”, Brussels, 2004, p.12

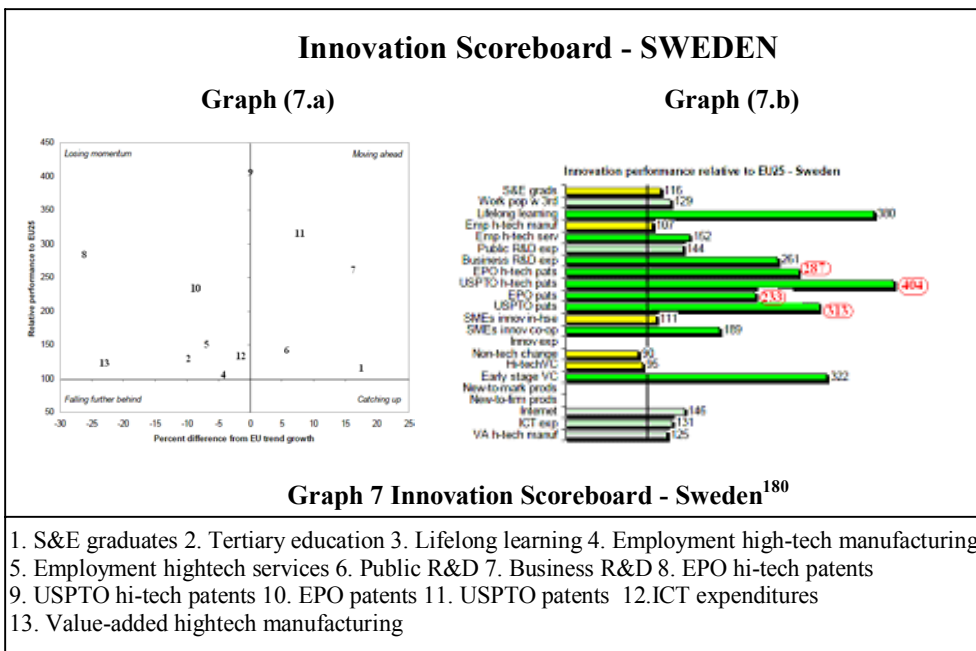
¹⁷⁹ Ibid, p.24

both currently lagging behind EU average, with the distinction that Spain is catching up while Italy is falling further behind with regard to the average change in their trend indicators. It can be observed from their IP protection practices that they are not as wide-ranging as Sweden and Denmark, although Italy made a move recently to put more emphasis on IP rights.

Having discussed the differences in innovation performances and IPR systems in Sweden, Denmark, Italy and Spain, the chapter will be concluded with an analysis of the innovation indicators in those countries, with a special focus on the IPR-related measures, in order to see whether these measures make up these countries' strengths or weaknesses for their innovative performances.

6.5 The Analysis

Sweden



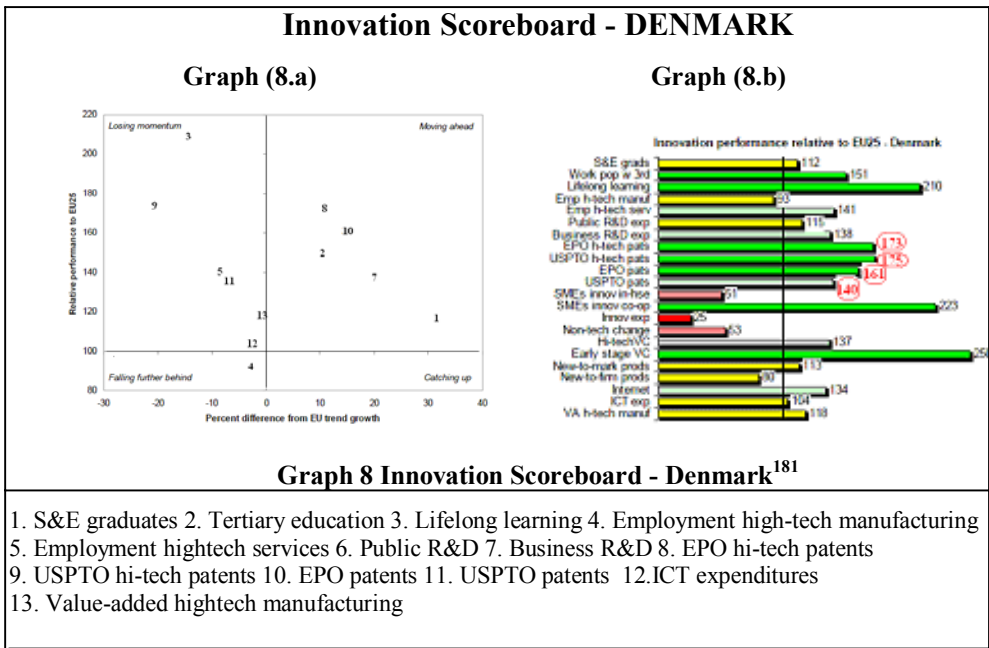
An analysis of Graph (7.a) on Sweden's innovation performance displays that Sweden's main strengths are USPTO patent applications, business and public

¹⁸⁰ Commission of the European Communities Enterprise Directorate, (2004), "2004 European Innovation Scoreboard Country Pages EU25 + Candidate countries", Brussels, 2004, p.48

expenditures on R&D, and science and engineering graduates, since these values are above EU-average currently as well as in the medium term. The rest of the indicators are situated on the upper left corner, meaning that Sweden performs better than EU-average on these parameters currently, yet the average performance is lagging behind the EU standard. It should be noted that value-added high-tech manufacturing is in the alarming zone, since medium term performance is well below the EU average, although current performance is slightly above the average line. A similar conclusion can be drawn for EPO high-tech patents; although Sweden's current performance is satisfactory, it is far below the EU-average in the medium term.

It can be observed from Graph (7.b) that the indicators concerning the intellectual property rights perform extremely higher than the EU-average. Sweden can be said to have been actively utilising its intellectual property rights system. This fact may be one of the reasons explaining Sweden's being the top performer in Europe, although the country is losing momentum in its innovation performance in the medium-term.

Denmark



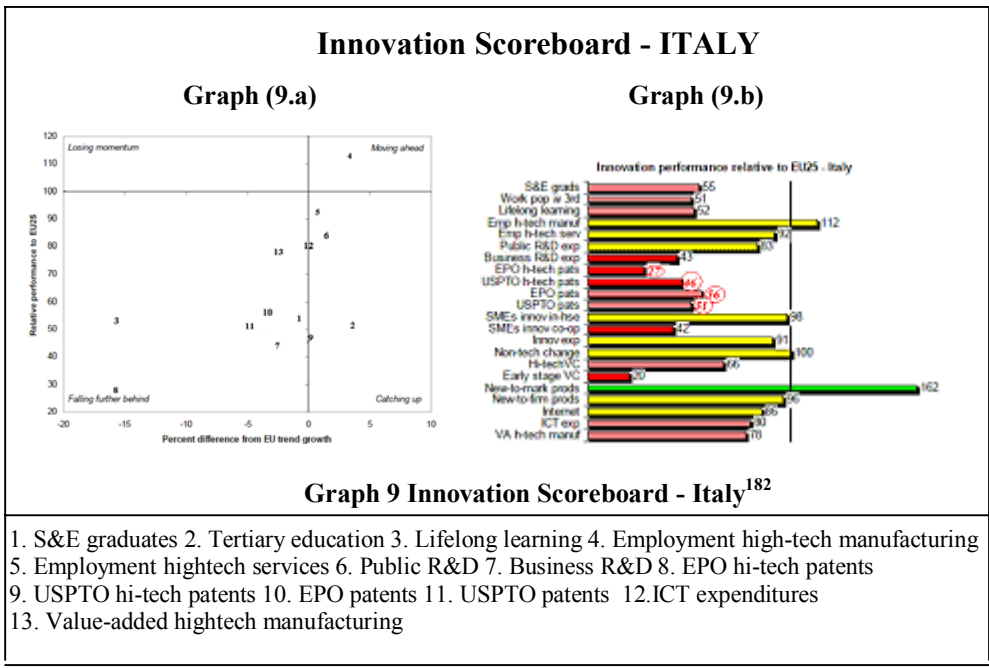
The graphs above demonstrate that Denmark is above EU-average, both in current and medium terms; regarding its patent applications in European Patent Office (EPO), tertiary education, business R&D, science and engineering graduates, and public expenditure on R&D. Lifelong learning, patent applications in United States Patent and Trademark Office (USPTO), employment in high technology services, value-added high-technology manufacturing, and total expenditures on information and communication technology are above EU-average in 2004, yet below the standard in medium term. It is also observed that employment in medium / high-technology manufacturing is Denmark’s main weakness regarding its innovation performance.

A closer look at the values related to intellectual property rights in the Graph (8.b) reveals that patent applications and high-tech patent applications both to EPO and to USPTO are ‘high’ when compared to the EU-average, only exception being USPTO patent applications with a ‘medium-high’ value. It can be concluded that although these are not the only relevant parameters, the high level of patent

¹⁸¹ Commission of the European Communities Enterprise Directorate, (2004), “2004 European Innovation Scoreboard Country Pages EU25 + Candidate countries”, Brussels, 2004, p.6

applications contribute to Denmark’s relatively successful innovation performance when added together with other aspects making up the national innovation policy.

Italy



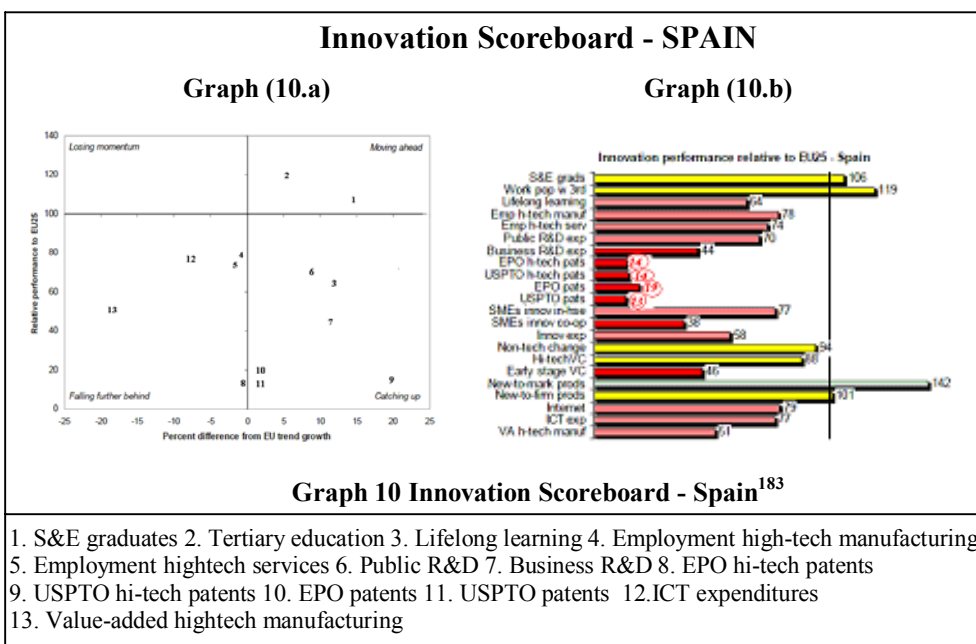
It can be observed from the Graphs (9.a) and (9.b) that the only indicator for Italy that is above EU-average in current and medium terms is the employment in medium/high-tech manufacturing sectors. Regarding the medium term only, it can be concluded that employment in high-tech services, public R&D expenditures, tertiary education and the number of USPTO high-tech patents are above the EU-average, yet the last indicator mentioned is far below the EU-average in current terms. The rest of the measures are below the mean in both aspects, number of EPO high-tech patents being in the far end of the red zone of “falling further behind”.

When the indicators directly related to intellectual property rights are analysed in the Graph (9.b), it can be concluded that all of the four indicators are well below the EU25 average, number of EPO patents and USPTO patents demonstrating

¹⁸² Commission of the European Communities Enterprise Directorate, (2004), “2004 European Innovation Scoreboard Country Pages EU25 + Candidate countries”, Brussels, 2004, p.20

medium-to-low values whereas number of high-tech patents in both of the offices demonstrate low values. Even though it is impossible to draw a direct link between Italy's innovation performance and intellectual rights practices, it can be concluded that relatively low numbers of patent applications is an indicator of Italy's position as "falling further behind" in the country innovation performance index.

Spain



It can be observed from the Graphs above that tertiary education as well as the number of science and engineering graduates are the main competences of Spain. Main weakness of Spain, according to Graph (10.a) is the value-added high-tech manufacturing. On the other hand, public and business spending on R&D, lifelong learning, number of EPO patents and numbers of both types of USPTO patents are above EU-average in medium terms, however, the values for patents are all still well below EU25 mean in current terms.

¹⁸³ Commission of the European Communities Enterprise Directorate, (2004), "2004 European Innovation Scoreboard Country Pages EU25 + Candidate countries", Brussels, 2004, p.14

It can be observed from the Graph (10.b) that the Spanish indicators concerning the intellectual property rights perform extremely below EU-average. However, it should be highlighted that these values are even lower than Italy, although Spain is better situated in the country innovation index than Italy. This fact demonstrates that even though number of patents is an indicator of innovative performance, it cannot by itself explain the innovation performances of countries.

7 Conclusion

As discussed throughout the paper, innovation has been recognised as one of the main driving forces of the economy long ago. However, the emergence of knowledge economy put special emphasis on the concept together with the challenges it brought. Managing the knowledge became increasingly important in order to make the best out of the innovative capacity of the companies as well as the countries. This resulted in the need to have a superior understanding of intellectual property rights (IPR), since these rights are the means to solve the market failures faced by innovating firms by creating property rights over knowledge. Having observed these facts, this paper was motivated to understand the relationship between innovation and intellectual property rights, illustrated by the country comparisons for their IPR practices and innovative performances.

The study began with a short introduction of the evolution of the policies in European Union (EU), from SME to entrepreneurship policies, which was found to be due to the fact that entrepreneurs are recognised to serve as the key mechanism to commercialize the knowledge created in the organizations. This was followed by the increasing importance of innovation policies, since it was realized that not all entrepreneurs are innovative and that there was a need for promoting entrepreneurs to be more innovative to ensure the competitiveness of Europe.

A conceptual framework was then established to analyse the relationship between regulations and innovation. Among the three types of regulations, namely economic, social and administrative, intellectual property rights were placed in the administrative type of regulations. Positive and negative impacts of regulations on innovation were discussed on the basis of this framework. Additional incentives to innovate was mentioned as a pro of the IPR system, whereas their potential as an obstacle for the diffusion of new technologies and products through additional protection for monopolistic practices as a con.

The paper then continued with an analysis of the intellectual property rights systems in detail. The conflict between IP rights and provisions of EC Law on competition law and free movement of goods and services was covered in this section. As discussed in detailed in the paper, the owner of an IP right in one Member State has the capability to prevent the importation of products lawfully marketed in another by suing for infringement of his rights, which leads to a conflict with the Community provisions on the free movement of goods and services. The holder of the rights may also distort competition by provisions included in a licensing agreement or else by abusing its dominant position in the market, which leads to a conflict with the Community provisions on the competition. These dilemmas resting within the Community Law were discussed, and then concluded with a discussion about the need for more harmonisation at the Community level.

The paper then continued with the discussion about the enterprises' perspectives about the role of regulations on innovation. Objectives of innovation activities, factors hampering innovation, the importance of regulations relevant for the introduction of new products and services, and the impact of regulations on new products and services were analysed for this purpose. It was concluded that regulations, as a whole or specifically, have different impacts on innovation, which underlined that the differences between sectors need to be taken into account when reforming the regulatory framework and that there was still a room for harmonisation in EC Law regarding the issue.

Then finally, different practices among four Member States regarding their intellectual property rights systems, despite the actions taken to achieve the harmonisation, was covered in order to understand the innovative performance differences of those counties. Among the countries chosen, Sweden and Denmark, were found to be above EU-average in terms of their current innovative performance. These countries were also found to apply well-built intellectual property practices and demonstrate above EU-average patent applications as an innovation indicator. Italy and Spain, on the other hand, demonstrated below EU-average current innovative performance, although Spain was making better

progress on average trend. Intellectual property protection practices in those countries were found to be less wide-ranging than the countries previously mentioned, supported by smaller number of patents than EU-average. However, it was also emphasised that as an indicator of innovation, number of patents were found to be lower in Spain than in Italy, although Spain performs better in the innovation index than Italy.

All those observations mentioned above lead to the conclusion that similar patterns can be observed between well-structured intellectual property protection systems and good performance in innovation and vice versa. However, number of inventions which have been patented, as an intermediate output measure of innovation, cannot by itself explain the innovation performances of countries. For that reason, it can be concluded that intellectual property rights need to be put in a comprehensive framework and should be considered in line with other indicators to better understand the overall impact of the regulations on innovative performance.

The differences observed throughout the study between sectors as well as countries regarding their perceptions about the effects of regulations on innovation and their innovative performances highlight the difficulties in applying one single innovation policy for all Member States. Therefore, an analysis of these differences and the reasons behind these disparities can be a useful tool for the policy makers in European Union.

8 Appendixes

8.1 Appendix I: Definitions for Table 8 & Table 9¹⁸⁴

HUMAN RESOURCES

1. S&E graduates (% of 20 - 29 years age class)

S&E (science and engineering) graduates are defined as all post-secondary education graduates in life sciences, physical sciences, mathematics and statistics, computing, engineering and engineering trades, manufacturing and processing and architecture and building.

2. Population with tertiary education (% of 25 - 64 years age class)

Number of persons in age class with some form of post-secondary education with reference to the population between 25 and 64 years inclusive.

3. Participation in life-long learning (% of 25 - 64 age class)

The participation in any type of education or training course during the four weeks prior to the survey. Education includes both courses of relevance to the respondent's employment and general interest courses, such as in languages or arts.

1.4 Employment in medium-high and high-tech manufacturing (% of total workforce)

Number of employed persons in the medium-high and high-technology manufacturing sectors.

1.5 Employment in high-tech services (% of total workforce)

Number of employed persons in the high-technology services sectors

KNOWLEDGE CREATION

1. Public R&D expenditures (% of GDP)

Difference between Gross domestic expenditure on R&D and Business enterprise expenditure on R&D

¹⁸⁴ Commission of the European Communities, (2004), Staff Working Paper: "European Innovation Scoreboard", Brussels, 2004

2. Business expenditures on R&D (% of GDP)

All R&D expenditures of the business sector (manufacturing and services).

3. EPO high-tech patent applications (per million population)

Number of patents applied for at the European Patent Office (EPO), by year of filing.

4. USPTO high-tech patent granted (per million population)

Number of patents applied for at the US Patent and Trademark Office (USPTO), by year of grant.

5. EPO patent applications (per million population)

Number of patents applied for at the European Patent Office (EPO), by year of filing.

6. USPTO patents granted (per million population)

Number of patents granted by the US Patent and Trademark Office (USPTO), by year of grant.

TRANSMISSION AND APPLICATION OF KNOWLEDGE

1. SMEs innovating in-house (% of all SMEs)

Sum of all SMEs with in-house innovation activities.

2. SMEs involved in innovation co-operation (% of all SMEs)

Sum of SMEs with innovation co-operation activities.

3. Innovation expenditures (% of all turnover)

Sum of total innovation expenditure for enterprises. Innovation expenditures includes the full range of innovation activities: in-house R&D, extramural R&D, machinery and equipment linked to product and process innovation, spending to acquire patents and licenses, industrial design, training, and the marketing of innovations.

4. Share of SMEs that use non-technical change (% of all SMEs)

Implementation of 'advanced management techniques', 'new or significantly changed organizational structures', or 'significant changes in the aesthetic appearance or design in at least one product'.

INNOVATION FINANCE, OUTPUT AND MARKETS

1. Share of high-tech venture capital investment

High-tech venture capital includes the following sectors: computer related fields, electronics, biotechnology, medical/health, industrial automation, and financial services. Venture capital is defined as the sum of early stage capital (seed and start-up) plus expansion capital.

2. Share of early stage venture capital in GDP

Venture capital investment is defined as private equity raised for investment in companies.

3. Sales of ‘new to market’ products (% of all turnover)

Sum of total turnover of new or significantly improved products for all enterprises.

4. Sales of ‘new to the firm but not new to the market’ products (% of all turnover)

Sum of total turnover of new or significantly improved products to the firm but not to the market for all enterprises.

5. Internet access/use

Level of Internet access by households and level of Internet access by: enterprises (% of all enterprises)

6. ICT expenditures (% of GDP)

Total expenditures on information and communication technology (ICT). ICT includes office machines, data processing equipment, data communication equipment, and telecommunications equipment, plus related software and telecom services.

7. Share of manufacturing value-added in high-tech sectors

Total value added in manufacturing in five high technology industries: pharmaceuticals, office equipment, telecommunications and related equipment, instruments and aerospace .

8.2 APPENDIX II: Types of IP Rights

Innovation in its broadest sense may be protected through a variety of different intellectual property rights, depending on the nature of the innovation, the sector a company is operating in, the legal instruments available in a given country and a company's business strategy¹⁸⁵.

Patents

Patents grant the holders a monopoly over a new and inventive product or process, and the right to prevent others from making, disposing of, using, importing a product, which is the subject of the patent or derived from it, or using the patent process itself¹⁸⁶. It is determined in the European Patent Convention that the right applies for a maximum 20 years¹⁸⁷. Patents are directly related to innovations.

Trade marks

Trade mark rights confer on the holder an exclusive right to use a special sign or a mark to differentiate its products or services¹⁸⁸. A trademark can be registered even if it is a non-invented word. Trade mark law in EC Law was harmonised by First Trade Marks Directive¹⁸⁹, which gives Member States the discretion to deal with the procedural details regarding trade mark issues.

Copyright

Copyrights protect "works", such artistic literary, film and music, from unauthorized exploitation by third parties¹⁹⁰. Since this right only prohibits copying of the work, it does not result in a monopoly over the work. Copyright Directive¹⁹¹ aims to harmonise certain aspects of copyright and related rights in the information society. However, there are still greater differences between the

¹⁸⁵ Burrone, E., Jaiva, G.S., "Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises"; World Intellectual Property Organization (WIPO), Geneva, p.3

¹⁸⁶ Jones, A., Sufin, B.; "EC Competition Law, Text, Cases and Materials"; Oxford, Second Edition, 2004, p.688

¹⁸⁷ Ibid, p.688

¹⁸⁸ Ibid, p.689

¹⁸⁹ Dir. 89/104/EEC (1989)

¹⁹⁰ Ibid footnote 186, p.689

¹⁹¹ Dir. 2001/29/EC (2001)

laws of EU Member States in respect of copyright than there are with other forms of intellectual property¹⁹².

Designs

Industrial designs are also only protected against copying, not against independent creation. The 1998 Directive on the legal protection of designs, which confers on the holder of the registered designs the protection for twenty-five years, merely achieves partial harmonisation¹⁹³.

Know-how

Know-how is commercially valuable information since it is needed to achieve a significant development, production, or use. Yet, because it does not fulfil the necessary criteria for patentability in most cases, it is not patented or registered in any way¹⁹⁴. Know-how issue is covered in block exemption on technology transfer agreements, and is protected by contractual provisions¹⁹⁵.

Miscellaneous

Other intellectual property rights covered are plant breeders' rights, semiconductor topographies, databases and computer software.

8.3 Appendix III

8.3.1 Case Law on the Free Movement Principle: Existence, Exercise and the Exhaustion of Rights

The distinction between existence and exercise of IP rights, which was discussed in the main text of this paper, was challenged by the Advocate General (AG) on the case between *Merck and Co Inc and Primecrown LTD*¹⁹⁶, stating that “A property right which cannot be exercised has no value”¹⁹⁷.

¹⁹² Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.689

¹⁹³ Ibid, p.690

¹⁹⁴ Ibid, p.690

¹⁹⁵ Ibid, p.690

¹⁹⁶ Cases C-267 & 268/95, (1996) ECR I-6285, (1997) I CMLR 83

¹⁹⁷ Ibid footnote 192, p.694

*Consten and Grundig*¹⁹⁸ was the beginning of the development on the distinction between existence and exercise¹⁹⁹. As the “sole representative” for Grundig for France, Consten had to take a minimum amount of the product, provide publicity and after sales service. Consten also undertook not to sell similar products capable of competing with Grundig good and not to make deliveries for or to other countries from the contact territory. Moreover, Grundig allowed Consten to register in France the *trademark* GINT, which it could use against any unauthorized sales in France. Hence, this agreement granted an absolute territorial protection to Consten, which was a means for Consten to prevent parallel imports of Grundig products into France. The Court held that the aim was to isolate the French market and maintain artificially, for products of a very well known brand, separate national markets within the Community, and that the agreement distorted competition and conflicted with Article 81 EC²⁰⁰. In its judgement, the court also mentioned that “...*contested decision to refrain from using rights under national trade-mark law in order to set an obstacle in the way of parallel imports does not affect the grant of those rights, but only limits their exercise... to give effect to the prohibition under Article 81(1)*”.²⁰¹ Therefore, in its ruling, ECJ created a flexible instrument for its case law and reduced the possibilities for intellectual property rights to divide the internal market²⁰².

8.3.2 Case Law on Article 81: Exclusivity and Territorial Restrictions

The discussion the dilemma between the provisions of a licensing agreement and Article 81 started with the decision in the *Nugesser*²⁰³ case, which is also known as “*Maize Seed*”²⁰⁴. In its decision, the Court distinguished between an ‘open exclusive licence’, where the licensor agrees not to provide licence to another party and not to exploit the right itself in the specified territory; and an ‘exclusive

¹⁹⁸ Cases C-56 & 58/64, (1966) ECR 299

¹⁹⁹ Korah, V., “Introduction to EC Competition Law and Practice”, Hart Publishing, 7th edition, p.258

²⁰⁰ Cases C-56 & 58/64, (1966) ECR 299, parag. 46-48

²⁰¹ Cases C-56 & 58/64, (1966) ECR 299, parag. 50

²⁰² Ibid footnote 199, p.259

²⁰³ Case 258/78 (1982), ECR 235

²⁰⁴ Bellamy & Child, “European Community Law of Competition”, Sweet & Maxwell, Fifth Edition, p.648

licence' which is equivalent to absolute territorial protection²⁰⁵. Under open exclusivity, the provisions do not claim to affect the position of the parallel importers and the licences for other territories²⁰⁶. In contrast to the Commission's view, ECJ concluded that the exclusivity provisions did not automatically infringe Article 81(1). Taking the economic context into consideration, the Court concluded that competition was not restricted if the exclusivity provisions were necessary to induce the licensee to enter the transaction. Therefore, it can be observed from ECJ's ruling that specific nature of the product has to be considered when deciding whether or not the provisions fall under Article 81(1)²⁰⁷.

The Court maintained this attitude of not to conclude in advance that agreements with contractual restrictions necessarily distort competition in the following cases²⁰⁸. In *Eruaw-Jacquery v Hesbignonne Societe*²⁰⁹, having recognised the fragile nature of basic seed, which was the product in question to be licensed within the case, ECJ recognised the need for quality control and for assuring the proper handling of the product by the licensor²¹⁰. Therefore, it was held that absolute territorial protection was not within Article 81(1) due to the special circumstances of the dealt case.

8.3.3 Case Law on Article 82:

8.3.3.1 Acquisition of an Exclusive Licence

In the case *Tetra Pak Rausing v Commission*²¹¹, Tetra Pak was dominant in aseptic food packaging sector and was held, by the CFI, to be abusing its dominant position when it took over Liquidpak, which was the exclusive licensee of a patent relevant to the manufacture of aseptic packaging. The patent licence in question compiled with the Block Exemption 2349/84 on patent licensing

²⁰⁵ Whish, R., "Competition Law", LexisNexis, 5th edition, 2003, p.740

²⁰⁶ Bellamy & Child, "European Community Law of Competition", Sweet & Maxwell, Fifth Edition, p.651

²⁰⁷ Jones, A., Sufrin, B.; "EC Competition Law, Text, Cases and Materials"; Oxford, Second Edition, 2004, p.708

²⁰⁸ Ibid footnote 205, p.741

²⁰⁹ C 27/87 (1988), ECR 1919

²¹⁰ Ibid footnote 207, p.708

²¹¹ Case T-51/89 (1990) ECR II-309

agreements, yet this fact did not affect the decision. As mentioned above, although the acquisition of an intellectual property right does not naturally lead to an abuse; it depends on how it affects the competition. In this case, Tetra Pak was already technologically significantly ahead of its competitors and the licensed patent was the only existing process, which gave other companies to compete with it. Therefore, the company was found to have the effect of distorting competition.

8.3.3.2 Compulsory Licensing and Refusals to Supply Intellectual Property Rights

One of the main areas of concern between intellectual property rights and Article 82 occurs when a dominant undertaking refuses to allow others to use its rights. The key question is the extent to which the owner of right can be obliged to license it to a third party²¹². Refusal to supply IP rights concerns copyrights and designs more than it does patents, since patents provides compulsory licensing in certain situations itself.

The ECJ considered the issue first in the car manufacturer cases *Renault*²¹³ and *Volvo v Erik Veng*²¹⁴. In these cases, the third parties wanted to acquire licences of the manufacturers' IP rights in order to produce spare parts. The Court held in the eighth paragraph of its ruling that the right of the owner of a protected design to prevent third parties from manufacturing, selling, or importing, without its consent, products incorporating the design constitutes the very subject matter of the exclusive right. Therefore, a refusal to grant the licence cannot in itself constitute an abuse of a dominant position since it will deprive the owner of the substance of its exclusive right. However, it should be noted that an undertaking might be abusing its dominance where it "refuses to supply spare parts to independent repairers in an arbitrary manner, charges unfair prices for spare parts, or decides not to produce spare parts for the models still in circulation"²¹⁵.

²¹² Whish, R., "Competition Law", LexisNexis, 5th edition, 2003, p.758

²¹³ Case 53/87 (1988), ECR 6211

²¹⁴ Case 238/87 (1988), ECR 6211

²¹⁵ Ibid footnote 215, p.759

The next time this issue was covered was in *Magill*²¹⁶, where Mr Magill wished to acquire the licence to publish the comprehensive listings of three television companies broadcasting in UK and Ireland in a magazine for a week in advance and was refused by the broadcasting authorities. In its ruling, the Court held that three television companies abused their individual dominant positions by this refusal since the companies themselves did not offer this product and there was a potential demand in the market. It was concluded that the refusal was provided a means to reserve to the television companies the downstream market for television guides, and therefore there was no justification for the act²¹⁷.

The “essential function” concept was introduced in paragraph 71 in *Magill* case, where the CFI stated “... the copyright is no longer exercised in a manner which corresponds to its essential function, within the meaning of Article 30 (ex Article 36) of the Treaty, which is to protect moral rights and ensure a reward for the creative effort, while respecting the aims of Article 82...”²¹⁸. The essential facilities doctrine with regards to licensing was also mentioned in *IMS v NDC*²¹⁹, where pharmaceutical data provider company IMS refused to grant licence for the brick structure it formed with an assistance from the customers. The brick structure became the standard for the industry and it was very costly for the doctors and pharmacies to switch to any other kind of information source. In paragraph 35 AG mentions that the refusal to grant a licence falls under Article 82 where there are no objective justifications for such refusal; and use of the intangible asset is ‘essential’ for operating on a secondary market, therefore owner of the right would ultimately eliminate all competition on that market by such refusal. However, that is subject to the condition that the undertaking seeking the licence intends to produce goods or services of a different nature that are aimed to answer specific consumer requirements not satisfied by existing goods or services. Consequently, the Commission ordered the IMS to license its intellectual property

²¹⁶ Case 241-242/91 (1995), ECR I-743

²¹⁷ Whish, R., “Competition Law”, LexisNexis, 5th edition, 2003, p.759

²¹⁸ Jones, A., Sufrin, B.; “EC Competition Law, Text, Cases and Materials”; Oxford, Second Edition, 2004, p.769

²¹⁹ Case 418/01 (2004), 4 CMLR 886

to a third party, which was the first decision in that direction, except for an interim one, since 1989²²⁰.

²²⁰ Whish, R., "Competition Law", LexisNexis, 5th edition, 2003, p.761

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