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EXPERIENCES REGARDING THE NORWEGIAN SMEs AND THE INTELLECTUAL
PROPERTY RIGHTS SYSTEM: LESSONS AND POLICY RECOMMENDATIONS

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0. Introduction

In 2001 the SME Division of the WIPO commissioned a study to explore how Norwegian SMEs currently (mis-) use the IPR system and how they might be better assisted by it. The original concern originated at the Norwegian Ministry of Trade and Industry who had started to focus on the concerns of its large proportion of very small firms. There was mounting concern that Norwegian SMEs tend, as a population, not to be proficient users of intellectual property rights and that the IPR-System could perhaps be better geared to their needs. The WIPO agreed to fund the project in order to explore this area.

This exploration resulted in a 170 page report titled, “Norwegian SMEs and the IPR-System: Exploration and Analysis”, which the STEP-Group¹ designed and carried out in consultation with the study’s appointed steering committee.² The study provides valuable material that may be of assistance for other decision-makers in other countries and contexts who find themselves addressing similar concerns. We invite the Moscow Forum to note some aspects of the relationship between SMEs and the IPR system in Norway, and to consider how we have gone about studying the complicated relationship in this national context. In this note we draw directly on the report to briefly say something about the background and design of the study, its method, as well as some of its results and recommendations.

1. Background

The Norwegian study was prompted by concerns that the relationship between SMEs and IPRs remains relatively weak in today’s environment. This is seen as particularly disquieting in a prevailing environment in which markets are globalizing, economies are becoming more knowledge-oriented, and technologies are evolving ever more rapidly. The premise is that it has become increasingly important in this context to understand how SMEs currently use the IPR-System and, on this basis, to try to determine whether the use — and the conditions for it — can be improved. This is seen as a ripe area to address as policy makers seek to improve the conditions for SME-competitiveness.

Norway feels unsure and vulnerable about how changes associated with globalization and a ‘pro-patent era’ elsewhere will impact its many small and middle-sized enterprises. This worry is especially pronounced since Norwegian enterprises, according to anecdotal evidence, have traditionally been set against patents and other intellectual property rights. Even if the anecdotal evidence is overstated (something that the study points to), there has been little to indicate that Norwegians are particularly astute at using the intellectual property rights-system to forward their competitive position especially on foreign markets. In this light Norwegian policy-makers are rightly concerned about how their economy is adapting to these circumstances.

¹ <http://www.step.no/>: The STEP group was established in 1991 to support policy-makers with research on all aspects of innovation and technological change, with particular emphasis on the relationships between innovation, economic growth and the social context. The basis of the group’s work is the recognition that science, technology and innovation are fundamental to economic growth; yet there remain many unsolved problems about how the processes of scientific and technological change actually occur, and about how they have social and economic impacts.

² Which included WIPO. Information about the study (its background, its mandate etc) are included in the report itself.

Many other countries share this sense of vulnerability with Norway. In the Norwegian case several characteristics that heighten concern can be noted: Norway is characterized by a small domestic market; it has traditionally been a commodity-based economy (fish, lumber and more recently oil), and it is still characterized by traditional industries such as basic engineering. The Norwegian study visits general issues of IPRs today and highlights some aspects of how the situation is changing and what this might mean.

If Norwegian companies are in general not well informed about the potential benefits of the IPR system, what about the many tiny enterprises in Norway? Small and middle-sized enterprises make up about 98% of Norwegian enterprises. Even the classification for SMEs is small in Norway. In another European country a 'SME' might have 249 employees: in Norway, enterprises with more than 99 are considered large. And most Norwegian enterprises are in fact micro-companies with between one and four employees. Such characteristics are certain to be shared with many other countries. The reason for concern is that SMEs obviously lack the resources (time, money, and expertise) that larger firms have to understand the IPR-system and to use it to their best advantage. In this light Norwegian policy makers are rightly concerned about how their many small and middle-sized enterprises use the IPR system.

Many countries share with Norway a large number of small and middle-sized enterprises. These firms have to a much larger degree than Norwegian SMEs difficulties mustering resources both in the form of finances and expertise to come to grips with the potential benefits afforded by the IP-system. In general, this Norwegian study offers other countries a conceptual understanding of the special position of SMEs, and what the literature tells us about their use of IPRs. (Chapter 3 in Section 1: see below)

Furthermore, some policy-makers are concerned with the way the Norwegian IPR-system is made up and whether it is advanced enough to meet the changing environment characterized by globalization and new technologies. The IP-system comprises not only the legal framework of the intellectual property rights system. It also includes a set of institutions and agencies that are involved in administering the IPR system as well as those that are involved in advising or otherwise assisting SMEs at a stage when IPRs might be relevant to them. It is imperative to understand how this infrastructure works because it directly influences whether and, ultimately, how enterprises utilize intellectual property rights in a given context.

The Norwegian study makes the case that the workings of the IPR-system is especially important in the case of SMEs. Because of their more limited resources both in terms of time, money and expertise, SMEs are generally most dependent on the advisory and financing support that is available to it domestically. The changing environment emphasizes the importance of a well-built, competent infrastructure that can help relevant SMEs decide whether and how best to use the IP system.

Despite this, many studies take the IPR-system infrastructure and its effects for granted. This is particularly the case of those based on broad-brush comparisons of patent-statistics. This common approach overlooks important national differences that influence those statistics. For a given country, the institutions that make up the larger IP-system will be fundamentally different to that of a country like the US, which is often the focus of IPR discussions. It is therefore important to get a grasp of what domestic institutions and agencies make up the IPR-system in a country and how it might condition the utilization of IPRs at home. Mapping this infrastructure is the first step in making an appraisal of how well it functions to meet the needs of SMEs.

The Norwegian study recommends applying the National Systems of Innovation approach to a study of this area. This is an approach that has been much used in international policy discussions such as the OECD. It provides a means by which to understand the role of the relevant infrastructure. (See Chapter 2 in the Concepts and Issues section; see also Recommendation 1.1.) Further the study illustrates how to map this infrastructure (See Chapter 4 in Section 2) with a view to conducting a set of expert interviews. (Chapter 9 in Section 3) Thus, the Norwegian study suggests to other countries an avenue by which to approach the concepts and issues and to apply them, especially in cases where statistical analysis is difficult. (see Methodology, below)

2. Study objectives

In this way, the Norwegian study takes up this area of concern and provides a comprehensive exploration of the issues from the perspective of one country, Norway. The report provides a thorough look at how the literature has approached relevant issues; it presents a theoretical framework to treat the relationship between SMEs and IPRs; and it develops substantially new empirical resources in order to analyze it. A special supplement has also been elaborated to help developing countries to apply this study to their own situations.

The Norwegian study contributes a sort of a pilot study which will hopefully be followed by other WIPO countries. As such it has gathered a lot of conceptual and theoretical background which will not need to be duplicated by other studies, but which might be added to. As a general course of study, other countries can examine how this study is put together and executed in the Norwegian case. Hopefully this will provide the inspiration as well as the basis of an analysis that, in turn, can be adapted to the particular conditions of individual other countries.

In this context, the pilot study lays out three base lines for subsequent studies.

- Careful attention to country-specific conditions (the institutions that are available to SMEs)
- Attentive exploration of different types of information (including statistics)
- An understanding of the way other countries have approached the same question.

Given these general premises, the Norwegian study makes the specific recommendation (recommendation 1.1. Extension of analytic basis to other countries) that other countries should attempt to coordinate the studies they might conduct, in order to ensure a reasonable degree of continuity and comparability. We recommend that such studies should be coordinated, for example by the WIPO.

3. Report Design

In general, the approach utilized in the Norwegian case moved on four general levels. There is:

1. A conceptual level to flush out the main issues involving the relationship between SMEs and IPRs and to argue for the use of the National Systems of Innovation approach to analyzing it;
2. A survey level to explore the relevant empirical evidence in the literature, to present existing empirical information about Norwegian SMEs, and to map the Norwegian IP-system;

3. An analytic level to explore and analyze statistical evidence about IPR use by SMEs and to conduct a round of expert interviews at key points in the IP system in order to supplement the statistical picture, and
4. A recommendation level to formulate recommendations to improve how SMEs might be better assisted by intellectual property rights in Norway.

These levels are found in the three main sections of the report. We summarize these here.

3.1. Section One explores relevant concepts and issues. Here general aspects about SMEs and the IP system are presented, and a wide-ranging look at what the literature does (and doesn't) tell us about firm size and intellectual property rights is conducted. For a country that has no experience with this type of study, the first step is to look beyond the raw patent counts that have become widespread and to focus on analysis of IPR use. On this score, the Norwegian study provides an accessible survey of approaches that have been used to understand key relationships involving IPRs. We survey some of the main findings of the extant literature and point out some of the literature's limitations. One fundamental problem for Norway and for other countries is that the analytic literature tends to focus on the situation in countries like the US and Japan. It tends to ignore most other countries and it tends to focus only on patenting. The Norwegian study surveyed rather more of the literature than was necessary in order to help subsequent studies, especially in developing countries, to get their bearings. This allows the national policy-makers an accessible presentation of what the relevant literature says. In addition, the extended bibliography is a resource that allows the interested reader an avenue by which to look into the literature himself. (See particularly chapter 3 of section 1)

To orient the discussion we forward an analytic framework in which to conceptualize the IPR-SME relationship. The National System of Innovation (NSI) framework is used to explicate the special role the support structure plays for SMEs. Furthermore, this framework helps to describe the different components of the IP system and to highlight these as integral parts of the innovation system of Norway. And it will help to contextualize the round of interviews in Section 3. The selection of approaches essentially shapes the type of study that will be conducted. It is therefore important at the outset to widen the focus on the IP system from a stringent focus on legal or formal (text-book) economical dimensions to include the institutional framework of the IP system. The National System of Innovation approach allows us to do this: it allows us to orient the discussion of IPRs and their use to the existing infrastructure and, second, to identify interviewees that can then provide expert points of view on how Norwegian SMEs approach IPRs and the way the IP system functions in the country. This means that important information can be integrated into the study, information that might otherwise be excluded by more traditional approaches. (See chapter 2 of section 1, and the bibliography for more information)

3.2. Section Two: It is important to amass empirical evidence that might be relevant to how SMEs might use the IP system. In Section Two of the Norwegian study, we collected a variety of general information about Norwegian SMEs, such as general population distributions across industrial activities, innovativeness indicators, as well as more general evidence comparing volumes of patent applications etc. In addition we sought out other studies that could help us understand the population of Norwegian SMEs (see chapter 5 of section 2). This is very important as, in each country, the mix of companies that make up the "SMEs" will be very different: it is important to understand the population under study. In each case potential and available information sources should be investigated.

Section Two is thus a descriptive section that presents detailed information about the Norwegian IP -system and about Norwegian SMEs. It consists of two empirical subsections. The first describes the anatomy of the Norwegian IP -system: it presents a map of the Norwegian IPR system against the wider background of its Innovation System. Relevant information about Norwegian SMEs is then supplied to help get a grip on how this group of enterprises uses or might use intellectual property rights.

The compilation and analysis of formal data about how domestic SMEs utilize the IP -systems should be a centerpiece of the study. In the Norwegian case, the study realized that two sources of statistical information were available. We realized furthermore that we could, by combining these, present a detailed picture of the size -classes that actually apply for patents and trademarks and look at them over time, according to industrial activities, etc. The details of these databases (the Norwegian Patent Office patent and trademark files combined with the Registry -data of Norwegian enterprises) are found in Annex 3. In addition to this annex, the approach is also described both in the text (specifically chapters 7 and 8 in section 2).

The second subsection of Section Two then explores current IPR usage in Norway. Here, the report presents a completely new and unique look at how Norwegian SMEs are already using the patent and the trademark systems domestically. This section is based on the laborious merging of patent and trademark databases from the Norwegian Patent Office with firm-level information from Norwegian registry -data. The resulting datasets give us the firm -level information of all Norwegian enterprises who apply for patents and trademarks domestically. We are able to study the size of the enterprises that apply for patents and trademarks, their geographic location, and even turnover. This opens new vistas for analysis.

This combination of databases is the main innovation of the Norwegian study. It rests on the availability of registry data that provides firm -level information. Obviously, it is difficult to tell what sort of relevant statistical material is available in different countries. If we assume that this type of information is not available, then there should be other routes to find out something about the attitude to IPRs and how SMEs currently use the IPR system. One avenue is the interview-approach already mentioned. This should be supplemented with a carefully designed survey of different size -classes of domestic enterprises.

3.3. Section 3 reports on a round of expert -interviews that was designed to provide insight into how Norwegian SMEs approach the IP -system and how the wider IP -system caters to their special needs. These observations allow us to conclude the general assessment of the Norwegian situation and to recommend ways of improving the relationship between SMEs and IPRs in Norway.

The final level of the Norwegian study thus involves the formulation of recommendations for policy -makers. These are forwarded in light of the observations made at the other levels of the report; they should therefore be read in context of the study as a whole. In total, the Norwegian study makes 15 recommendations ranging from the general to the more specific. It follows from the design of the study that these recommendations are suited to the particular context of the Norwegian system. However, they do hold a certain degree of relevance for other countries.

Ultimately it is the specific set-up of the particular country and the specific conditions in which it finds itself that will determine the relevance of such recommendations. Furthermore it should be appreciated that, in any context, an improvement generally involves a process which may take a long time. Since we are talking about the behaviour and expertise of individuals in SMEs as well as in the support structure, the important part is that the process that is ultimately implemented addresses an actual need and that it is properly designed and dimensioned to solve the problem. Therefore, the recommendation that we make in the report to initiate such processes are generally not once-off cut and dry solutions that can be uncritically duplicated.

4. Primary Findings of the Empirical Study

A center piece of the report is the exploration of how Norwegian SMEs currently use the IPR system in Norway. The general impression from the database work is that SMEs are, in absolute terms, big users of the domestic patent and trademarks systems, and that they use these types of rights to an increasing degree. At the same time however, this work shows that larger enterprises are much more intensive users of both systems and indicates that they are much better users as well.

These impressions coincide with the results of the expert interviews. Together the empirical materials suggest a number of concerns and problems, and it allows a vantage point to forward a set of recommendations to address them. These are reviewed in the recommendations section below. Here we will review some of specifics about current use.

4.1. Patents

The report shows that:

- In absolute terms, roughly the same number of patents are applied for by domestic SMEs as by large domestic companies, while the majority of applications come from independent applicants.
- The number of patent applications has risen strongly during the 1990s: the strongest growth has in fact been the population of applications involving SMEs.
- In relative terms, large enterprises apply on average 40 times more often than micro enterprises; 20 times more often than small; and eight times as often as medium-sized enterprises for patent protection. On average, a little more than one domestic application is made every year per 100 Norwegian firms.
- Larger enterprises tend to apply for more than one application to a much larger degree than smaller firms. In general, the smaller the firm size, the fewer the average applications are made.
- The applications of large firms differ from those of smaller applicants in terms of technology. While forty percent of Norwegian applications for chemistry and pharmaceutical-related technologies were from large enterprises, more than eighty-five percent of the applications for electrical engineering were from the other size classes.
- The propensity to patent is fundamentally related to the key product (NACE classification) of the applicant. Applicants involved in electrical equipment are 3 times, offshore enterprises 10 times, and R&D service enterprises 20 times more likely than average to apply for a patent.
- There are major differences in the geographic distributions of patent applicants. Large applicants tend to concentrate in urban areas.

- A major difference between smaller and larger applicants is the 'success' of their patent applications. The study shows that the level of non-grant—especially cases in which the applicant withdraws his application—is dependent upon size. SMEs withdraw one in three applications while independent applicants withdraw more than half of their applications.

4.2. Trademarks

The report shows that:

- The volume of applications from Norwegian applicants grew more quickly than patents (nearly 80%) from the first to the latter half of the 1990s.
- In absolute terms, applications from large enterprises made up under thirty percent of all applications during the decade, and their volume grew least quickly. The volume of SME applications was higher, and it grew more quickly.
- In relative terms, an average of eight applications were filed in a five-year period per 100 firms in a given year. The propensity was highest among the largest firms, with over 104 applications per 100 firms. The equivalent was three for the smallest firms, eight for small, and 17 applications for medium-sized firms.
- The occurrence of multiple applications is again related to size. While only 28% of the smallest firms identified were involved in 2 or more trademark applications, the equivalent for Large Enterprises was nearly 90%.
- Industrial activity strongly conditions applications for trademark registration, in a way that complements that of patent applicants. Enterprises in Basic Services (NACE classification) dominate trademark applications, while many others come from Business Services and ICT Services.
- Trademark applications are first and foremost an urban phenomenon. Oslo and environs, Trondheim, and Bergen account for nearly three-quarters of the total number of Norwegian applications.

5. Recommendations

The database work, the expert interviews and the literature survey helped identify apparent concerns, needs and problems in the relationship between IPRs and SMEs in Norway, and suggests what can be done to improve both the use and the conditions of use of the IP System for this population. Based on this work, the report makes three sets of a total of 15 recommendations. These range from the general to the more specific.

5.1. Measures to improve knowledge about the inter-relationship between SMEs and the IPR system.

The first set of recommendations addressed the lack of reliable and relevant data, and the scope for improving analysis in this area. The literature survey exposed a limitation of the literature to patenting and to selected advanced countries, with only a small set of studies dedicated to the size-based propensity to patent. The report recommends that the Norwegian study be extended and adapted to other WIPO countries (1.1.); that the basis for analysis in Norway be improved, and that more detailed analysis be supported in Norway. (1.2. and 1.3.)

5.2. Measures involving general 'attitudes' towards, and knowledge about, intellectual property rights in Norway

The second set of recommendations addresses measures to improve central aspects of the IP -System, including industrial IPR policy and education. In Norway there is a need for a more unified policy on questions that involve the strategic use of intellectual property rights. A vitalization of the national discussion on IPR issues and the development of a more unified policy on questions that involve the strategic use of intellectual property rights would invigorate awareness of IP issues not least among small and medium -sized enterprises; it would serve to heighten consciousness about the IP -system within the wider innovation system; and it would help deepen the understanding of the IP -system both in institutions and enterprises. (2.1.)

There is also an expressed need to try to integrate IPR -issues more actively into the national educational system. (2.2.) Today IPR issues are isolated in Norway to parts of the legal education. Balanced exposure to the IP -system within the existing educational framework is seen in the long -term to be the best way to promote more sophisticated use of the system. The study therefore encourages initiatives to study and implement the best ways of accomplishing this.

5.3. Recommendation targeting the operative form and function of the IP -system as a whole

The third set of recommendations presents a number of basic recommendations that target individual parts of the Norwegian IP -system. At the top -level, we challenge the institutions of the IP -system to explore how they can together improve their efficiency in helping SMEs. We recommend exploring initiatives that encourage greater exchange of experiences and know -how across institutions in the IP -system. There is also a need to nourish the current outreach activities undertaken by the Norwegian Patent Office. We recommend that this work be systematically followed up and that the experience of other countries be actively monitored in order to ensure the use of best practices on this front. (3.3., 2.3.)

The study encountered several indications that the overall working of the IP -system in Norway could be improved. One major concern that emerged is that the considerable number of smaller entities who already use the patent and the trademarks system have significant problems in doing so effectively. The database work especially raises the question (via high withdrawal rates) of how skilfully SMEs use the system. The study recommends that the national IP systems should aim to reduce the number of withdrawals that result from misconceptions of the system or in poor competences in dealing with it. (3.1.)

The recommendations address other more specific areas where it is important that the underlying problem and possible solutions be further understood and addressed. In general, we recommend that this work be initiated by the responsible and competent institutions. It is recommended for example, that greater attention be directed to IPR issues by the central institutions of the support structure, especially the Research Council. Other initiatives to be considered include targeting use of design rights (3.4.); whether petty -rights/utility patents should be introduced to the IP -System of Norway (3.8); and whether patent agents should undergo formal certification. (3.5)

The report also encourages the IP -system to explore emerging issues. These include studying the ramifications for the infrastructure of the increased emphasis on the commercialization of academic research in Norway and elsewhere. (3.9) Other topics wanting attention involve evaluating initiatives developed elsewhere to address more established problem areas. One such area involves measures to activate idle patents and design rights to the best advantage of small and medium -sized enterprises. (3.7)

Finally, the report finds the improvement of SME security in litigation cases of vital importance. (3.6) The study indicates that this is a central underlying concern for small and medium-sized enterprises. Insurance schemes are seen as a way to deter indiscriminate infringement proceedings leveraged against weaker parties, whose enforcement capabilities are limited. Insurance schemes under consideration or implemented elsewhere should therefore be evaluated for their relevance in the Norwegian context.

6. Conclusions

In conclusion, it is worth highlighting for the Moscow Forum the recommendation to extend the type of study to other country contexts. In this context, the Norwegian study indicated that one of the fundamental stumbling blocks in addressing how SMEs may be better assisted by intellectual property system is the lack of reliable and suitably detailed information about how SMEs used different IPRs in different IP -systems. We showed that patent-data dominates the analytical basis for the "IPR studies" and that these studies are limited to individual countries. We know very little about the practical uses of other rights such as design, copyright and trademarks, and we know very little about the situation in the vast majority of countries. Further we noted that the specific use of intellectual property rights should be related to the specific institutional set -up of the IP -system in a given country, as these differ considerably from country to country.

In view of this, we recommend that the type of pilot -study undertaken here should be extended to other WIPO member countries. At this stage, studies that map the IPR systems of individual countries, that explore how the concerns about their small and medium -sized enterprises are addressed by those systems, and that investigate how SMEs in those countries approach and utilize the systems, are seen as the best way forward. At this stage, studies that map the IP -systems of individual countries, that explore how the concerns about their small and medium -sized enterprises are addressed by those systems, and that investigate how SMEs in those countries approach and utilize the systems, are seen as the best way forward. In order to ensure a reasonable degree of continuity and comparability, such studies should be coordinated, for example by the WIPO.

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