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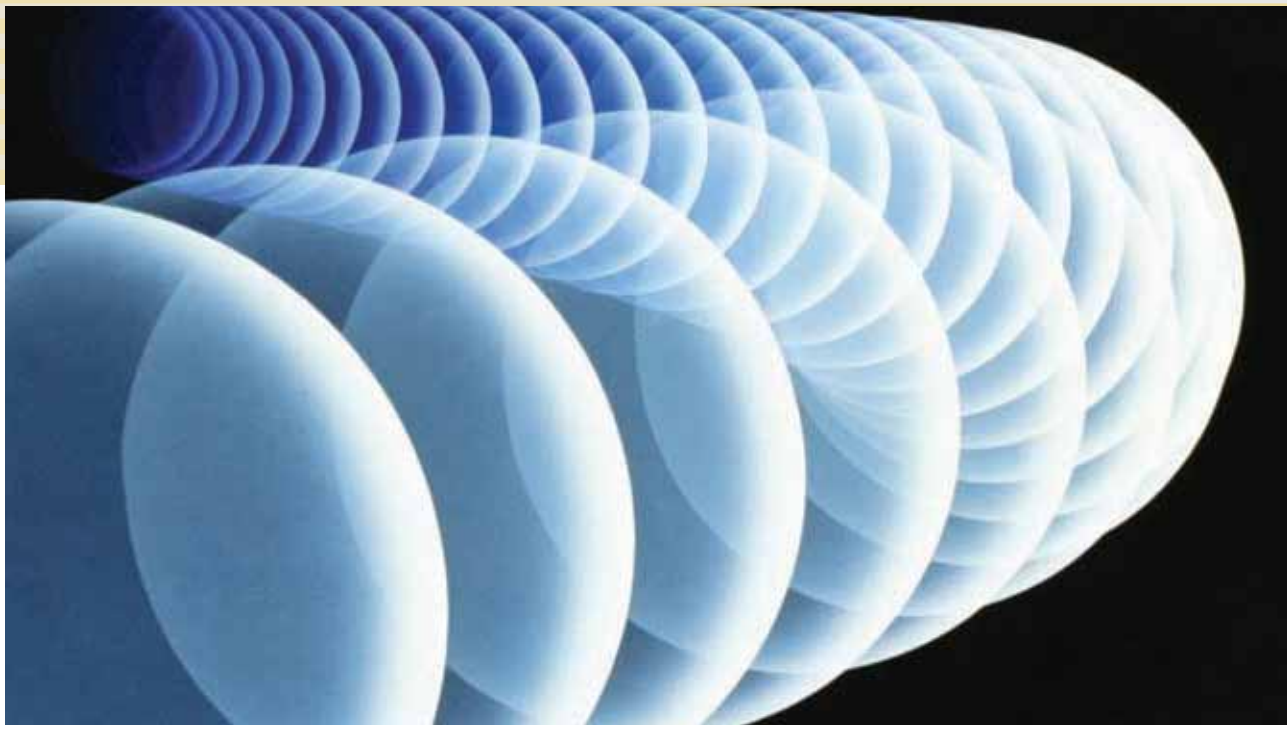
BENCHMARKING NATIONAL AND REGIONAL SUPPORT SERVICES FOR SMEs IN THE FIELD OF INTELLECTUAL AND INDUSTRIAL PROPERTY



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BENCHMARKING NATIONAL AND REGIONAL SUPPORT SERVICES FOR SMEs IN THE FIELD OF INTELLECTUAL AND INDUSTRIAL PROPERTY

Authors of the report:
Alfred Radauer (Austrian Institute for SME Research)
Jürgen Streicher (Austrian Institute for SME Research)
Fritz Ohler (Technopolis Group)

PRO INNO Europe

The innovation policy initiative PRO INNO Europe combines **analysis and benchmarking** of national and regional innovation policy performance with support for cooperation of national and regional innovation programmes and incentives for innovation agencies and other innovation stakeholders to implement joint actions. The initiative aspires to become the main European reference for innovation policy analysis and development throughout Europe and brings together over 200 **innovation policy makers and stakeholders** from 33 countries. Additional information on PRO INNO Europe is available on the Internet (www.proinno-europe.eu).

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Austria
Austrian Institute for SME Research (KMFA) – Project Lead

Technopolis Group

Belgium
Research Centre for Entrepreneurship, EHSAL-K.U. Brussel

Bulgaria
Foundation for Entrepreneurship Development (FED)

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Turkey
SIBAREN, Industrial Engineering Department Middle East Technical University

United Kingdom
Technopolis Group Brighton

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Executive Summary

Background

1. The move towards a knowledge society, together with ongoing globalisation, is frequently cited as behind the emergence of a so called "pro patent" era over the past two decades. This era can be characterised by (i) a growing importance of the value of intangible assets and intellectual property for many companies and in many industries and (ii) a sharp rise in demand for the means to protect intellectual property through the system of Intellectual Property Rights, most notably patents.
2. There is a wide-spread belief that a positive relationship exists between the level of IPR usage and innovation activities. Numerous studies underline the importance of innovation for economic growth and welfare, and, further, a significant number of investigations highlight the contributions small and medium-sized enterprises (SMEs) make to the innovation performance of the European economy. However, research also indicates that, on average, SMEs may be – due to constraints associated with their company size – at a disadvantage compared to large scale enterprises (LSEs) when it comes to using IPR. As a consequence, SMEs utilise the available IPR instruments (patents, trade marks, registered designs and copyrights) to a much lesser extent than do LSEs and rely on more informal protection methods instead. This outcome appears undesirable and suggests the existence of a market failure in that field. It also suggests the need for prompt policy actions to support SMEs in protecting their intellectual property.
3. Reasons identified in research for the under usage of IPR by SMEs comprise prohibitive costs for getting IPR protection, difficulties in enforcing IPR once respective protection is granted, a lack of awareness on the side of SMEs concerning the way the IPR system works, the time to make IP protection strategies work and a (perceived) granting practice of patent offices which allegedly grant patents to renown large companies more easily than to rather unknown small entities. Notwithstanding these barriers, it has to be also noted that there are industries where IPR plays an important role even for SMEs (most notably, in high-tech sectors such as the bio-pharmaceutical sectors or in the ICT industries).
4. Of the barriers described in point 3, the cost issue stands out. The cost issue arises on one hand when IPR protection is sought: Especially in Europe, patenting is costly and may be, furthermore, as much as 2.5 to 3 times more expensive as in the U.S. or in Japan (which is mostly attributed to translation costs incurred for the various European languages, in order to get Europe-wide protection). But even if obtained, SMEs may find it, on the other hand, difficult to defend their IPR in court: SMEs simply may not have the resources (time and funding) to go through lengthy and uncertain litigation procedures. Studies suggest that while a large share of SMEs is faced with infringements of their IPR, and a considerable share of these sustains relatively grave economic losses through copying, only a few are able to successfully litigate. In this context, it should not be forgotten that patents have two important disadvantages from the company's perspective: First, they offer blueprints to potential unlawful copiers which would otherwise not be available if the innovating firm could successfully keep the invention secret. Second, they provide protection only for a limited amount of time. Patents are thus a double-edged sword for SMEs: They can prove beneficial for protecting inventions, but in the most extreme case they can even harm a firm if it faces infringement and lacks the means to

go through with litigation. Furthermore, patents can also constitute sunk costs if the protected invention is of no commercial value.

5. A strategic issue arises in the context of answering the question why SMEs should use patents at all. As always, the disadvantages have to be contrasted against the benefits: Patents are increasingly not only used as an insurance premium, but also for marketing purposes and reputation building (e.g., in negotiations with venture capitalists in the absence of reference projects), for direct income generation through licensing agreements and for strategic reasons (e.g., in order to force competitors to design around, or to scare potential competitors off or to create bargaining chips in negotiations for envisaged R&D cooperation projects). In certain industries, these new usage patterns have led to entirely new business models where income is generally generated through IPR and only to a lesser extent by producing physical goods. The most extreme and at the same time also highly controversial case of such a business model is that of a "patent troll": a company (usually an SME) which buys patent rights from other firms (without investing itself in R&D) and sues alleged infringers, thereby forcing them to pay royalties.
6. The situation is further complicated by the fact that there is a full spectrum of instruments available to companies to protect and/or to appropriate their IP – patents are not the only option. This spectrum covers not only formal IPR instruments (in addition to patents, also trade marks, registered designs and copyrights), but also informal methods (including trade secrets, defensive publishing, lead-time advantage, and complexity of design). Using trade secrets entails keeping the invention secret, but, of course, competitors are left free to attempt to re-engineer it. Using defensive publishing entails publishing of its invention by the inventing company which makes patenting by others impossible, and obstructs competitors intending to reengineer the invention, patent it and drive the original inventor out of the market. Relying on a strategy of lead-time advantage means always staying ahead of any would-be competitor. And, relying on complexity of the design of the invention means making it more difficult for others to copy.
7. Each of these methods (and there are many more) has its rightful place, and the decision for and/or against using a particular IP protection/appropriation method is highly dependant on the context within which a business is operating (e.g., its market position, or its technological and patent standing). Company size might be in this context only one of the variables to take account of, though it may affect the appropriateness of the IP strategy pursued. A large company such as Coca-Cola might find it better not to patent the recipe of its main beverage, but to keep it secret and rely on strong trade mark protection. Other firms might take different approaches.
8. From the study findings, we can infer that no preference should be given a priori to any particular means of protecting and/or appropriating a company's IP, be it large or small. Especially, there should be no general predisposition towards patents (exceptions for certain industries not withstanding). The decision for or against a certain IP protection/ appropriation strategy is a complex and individual one and puts the question of "why and why not" to use a particular IP protection instrument or a combination of instruments on the agenda first. Only after such a decision is taken on a sound basis should a technical question, such as "how to file for a patent", or the question of subsidising patenting costs, be posed.
9. The implications for policy makers wishing to design a system of support services for SMEs in the field of IPR are, against this backdrop, three-fold:
    a. A rather broad approach should be taken towards different formal and informal methods of protecting/appropriating IPR. The support system should thus not only cover patents (and push for more patenting activities

under all circumstances), but rather should address the ability of SMEs to manage the array of IP protection/ appropriation methods effectively. This implication is consistent with what is currently happening in LSEs, where many are further developing their "patent departments" into "IP management departments".

b. The system of support services should aim at assisting SMEs to attain an awareness of (i) the value of their IP, and as well (ii) effective knowledge of the different features of the full spectrum of IP protection/appropriation instruments. At a minimum, SMEs should know the advantages and disadvantages of the alternative methods, the basic "do's and "don'ts" when using them, and, given limited resources, how to find the right service providers for particulars.

c. It is also crucial that SMEs understand IP management as part of overall innovation and business strategy. Already when R&D on an invention has started, ways to appropriate the end results should be considered. IPR issues will need to be addressed throughout the innovation process, e.g., early on it is wise to conduct a search to determine if the target invention is already patented; once the invention is market-ready, issues relating to design and branding may arise which may entail dealing with registered designs and trade marks. An explicitly laid out IP strategy within R&D and business management may help identify points in time where action is to be taken with respect to IPR.

The IPR services in place

10. The question of *"what's out there and what can be done to best support SMEs within the current IPR system"* set the key theme for the analysis carried out. The underlying study "Benchmarking National and Regional Support Services for SMEs in the Field of Intellectual and Industrial Property" mapped out the services in place for SMEs in the EU-27, Turkey, Liechtenstein, Iceland and Norway, as well as those in a number of overseas countries (the USA, Canada, Australia and Japan), that have been established to address the market failure described under point 2 and to support SMEs in the field of IPR. More specifically, it was the aim of the study to identify publicly funded IPR support services offered on a national and/or regional level from which SMEs could benefit, and benchmark a selection of the identified measures (i.e., assess and compare their performance). The next step was to single out elements of good practices using a series of case studies.

11. The study design drew on a mix of qualitative and quantitative methods, which were applied in three consecutive research phases. In the first phase, the identification phase, 279 services (224 in Europe and 55 overseas) were identified using a semi-standardised identification guideline, desk research and selected interviews with service providers. The information gathered was compiled into a database which provides service descriptions as well as key data such as contact details, customer groups targeted and type of IPR instrument/ activity supported. Based on this data, 72 services which were considered aspiring candidates to become good practices were subject to a benchmarking exercise in the 2nd phase of the research. The benchmarking phase employed a semi-standardised benchmarking guideline which enquired into a range of benchmarking indicators measuring the performance and outcome of the service, particulars of the operation and implementation and elements referring to the design and set-up of the measures. The methodology included a compulsory interview with the respective service provider and an analysis of available documents such as evaluation reports. Eventually, 15 services were selected to display elements of good practice. The case study analysis, the 3rd and last research phase, involved the execution of a user survey

using a standardised questionnaire which aimed for 50 respondents per service and additional open expert interviews. In the end, 630 users were questioned with respect to their experiences with the services. The whole study was conducted in the time frame of January 2006 till June 2007.

12. While comprehensive, the number of identified services gives only an order of magnitude of the quantity of available support services. The high variation is due to the fact that many services are offered as packages, with often one service consisting of several sub-services. The decision as to whether an integrated service was counted as one service or whether as a portfolio of individual services once it was considered relevant for the scope of the underlying study depended on the scope of the individual sub-services, the way these services were marketed and the overall organisational context (e.g., the type of organisation offering the services).
13. By far, most of the identified services (90 %) focus on patents, with some provisions for trade marks. Informal protection mechanisms are, by contrast, rarely included. Furthermore, the majority of the services focus on early stages of IPR development such as application procedures and prior art searches, and only to a lesser extent on later phases such as acquisition of existing IPR or the actual usage and exploitation of IPR. This implies that the service system in place is very patent-centric and touches the subject of IP and IPR management only at the periphery.
14. Most of the services are rather small offerings, operated by few people and endowed with rather low funding. About 35 % of the services are explicitly offered to SMEs. Most of the services are offered nation-wide (80 %), and only a fraction is dedicated to specific industries and/or technology fields.
15. In terms of type of service, the services identified can be classified into five categories: (1) pro-active awareness raising measures (which actively address SMEs and promote the usage of IPR), (2) passive information provision services (which provide IPR-related information on a stand-by basis; a case in point are patent database search services), (3) training offerings (on IPR-related matters), (4) customized in-depth consulting and advisory points/services (which offer customised advice) and (5) services offering financial assistance directly (e.g., subsidies for patenting costs) or by making provisions for IPR in the legal framework (e.g., tax exemptions). One striking observation is that few services are in the domain of training.

The performance of the services

16. The performance of the present IPR support system is highly ambiguous. Despite a rather large number of identified services, fairly few services can be described as high performers. Some "islands" of well designed programmes exist, but the majority of measures do not seem to have a strong track record.
17. There is little evidence to support a big release on "best practices'" or "good practices". At the same time, there is ample evidence for compiling "elements of good practice", understood as elements in the design or execution of those services whose characteristics and qualities are "generic", implying that their adoption runs a high probability of success. Accordingly, there is a set of elements of good practice where each of the elements can be found "out there", however not the set as a whole.
18. The strongest exploratory factors for explaining the variations in performance are contextual factors, in which the respective service has been designed, endowed with resources and responsibilities, and ultimately performed. As a consequence, in searching for elements of good practice, it is necessary to look at the services, at the overall institutions that deliver the services, and at the

overall policy level, which primarily determines the endowment with resources, the institutional locus and the (hierarchical) position of the service.

19. One key observation concerning elements of good practice is that services which are offered as part of an integrated package perform better than isolated offerings. This is due to the fact that integrated services usually tackle a broader range of issues, thus taking the complexity of the subject of IPR better into account. They also benefit from synergies among the different service elements and provide a pooling of otherwise scarce expertise on IPR matters.
20. Another important element of good practice is the competence of the service-operating staff. Services that perform better can usually draw on experienced personnel which possess ideally technical, legal and business know-how related to IPR. The availability of an adequate number of qualified staff is, however, also a bottleneck for the design of IPR support services – research indicates that few educational offerings exist in this respect, and career opportunities as well as payroll regimes in the public sector might prove often unattractive for people with the desired background.
21. Ease of access and easy identification/recognition are yet another key quality factor for IPR support services. In this context one has to note, however, that the main actors in IPR service provision are patent offices and only to a much lesser extent technology/development agencies. If technology/development agencies are operating an IPR support service for SMEs, it is often a service which is marginalised in the overall service portfolio. As opposed to patent offices, technology/development agencies are, however, well known among SMEs as providers of services for a range of innovation and R&D-related issues. As a result of being offered principally through patent offices, a large share of IPR support services seem to operate in "stealth mode" and are hardly visible to SMEs.
22. The study results suggest that there are clear cutting lines separating patent offices and technology/development agencies and their respective service offerings. Determined by history, different mind sets and different actors, there seems to be rather little exchange taking place between these two types of organisations. This situation constitutes a case of systems fallacy: While all evidence points to the need that issues related to IPR (or better: IP appropriation/protection) are to be part of overall innovation and R&D management, support on R&D/innovation and on IPR is fragmented across different institutions. Furthermore, this set-up may entail "blind spots": With patent offices and their traditional focus on formal IPR and with technology/development agencies treating IPR at the periphery, there is the (observed) danger that alternative approaches to exploiting and protecting IP (i.e., informal practices) are not covered at all by the IPR support system in place.
23. The emergence of national patent offices as services providers in Europe has to be seen in the context that the European Patent Organisation (EPO) is taking over more and more tasks of the national offices. National offices are thus seeking new roles, and an obvious option is to become service providing organisations. There are arguments both for and against such a development, if policy makers have to decide on which organisation to contract for offering IPR support services. Patent offices have been traditionally concerned with the issue of protection of IP, thus they tend to focus on registrable IPR. Patent offices possess considerable technical know-how (i.e., with respect to patenting procedures) and know-how in legal matters, and they are perceived by customers to be rather independent and objective. On the other hand, they are relatively new in the world of support offering institutions for SMEs. Technology/development agencies, by contrast, have a significant track record with regard to innovation and R&D support offered to SMEs, have a wider knowledge of the business context and are also better known by SMEs. Their IPR know-how, is, however, limited.

24. Another important issue concerns the governance of the services: Services which perform better are usually carefully designed (i.e., by assessing user needs or by carrying out ex-ante evaluations) and are subject to regular evaluation exercises. However, many of the benchmarked services do not have evaluations conducted and have in many ways insufficient quality assurance mechanisms in place. This has important implications both in terms of customer orientation (e.g., with respect to knowing the target groups and their characteristics) and in terms of accountability. To a large extent, IPR services are uncharted territory in terms of investigated and performance-assessed support services.
25. There is evidence to support the notion that timely delivery is a significant issue, especially for patent database search services. Services which excel in this area display an element of good practice.
26. Spatial distance is hardly ever seen as a barrier towards using IPR support services. The user survey conducted has shown that the issues involved in IPR matters are likely to be of so much interest to SMEs that they are willing to travel reasonable distances to get the support needed.
27. As private service offerings have not been scrutinised within the scope of this study, little can be said on the performance of offerings which are not publicly funded. It has emerged strongly, though, that patent attorneys play an important role in IPR service provision for SMEs. That is, they are often the primary service providers SMEs go to when they look for support. Patent attorneys also play an important role in the success of a number of the publicly funded support services offered, e.g., as carriers of information on such support programmes or by aiding SMEs with administrative procedures when using publicly funded measures. While for most service types there seem to be complementary effects between private and public offerings, the area of patent search services is a potential field of conflict.

Conclusions and recommendations

28. Against the backdrop of the analysis outlined above, the following recommendations are outlined. As most of the time, borders are blurring: Therefore, some of the recommendations are addressed in more than one part. As a rule and thus as a design logic, the respective sections can be read as an agenda or requirement specification for doing a good job as manager(s) of a service, as the top executive(s) of institution(s) in charge of providing a service or parts of it, or finally as policy maker(s).
29. Recommendations at the service level

    a. *Integrated IPR service packages / referral to other services.* Services should be offered in integrated packages, taking into account the complexity of the subject of IPR. This can be done by genuinely integrated services or, in order to account for scarce expert know-how and in order to increase visibility and accessibility, by referrals to other services and/or institutions, thus aiming at joint provision of services.

    b. *IPR management over IPR protection.* The complexity of the subject of IPR as a strategic issue deserves increased attention. Particularly, the business/ intellectual property management aspect is one factor where many larger enterprises seem to be far ahead of the average IPR-affine SME. With IPR being increasingly used to create revenue, while at the same time many patents which have no economic value are granted, and with many technological developments looking for applications which provide income, it seems that not the patent alone, but rather the surrounding business model is the significant success factor. Accordingly, this points to

the fact that the business perspective should be given a more central place in IPR service provision.

c. *Fostering availability of qualified staff*. A big bottleneck can be seen in the shortage of qualified people available for providing IPR support. Such people should have technical, legal and business expertise, and it is especially the latter aspect that needs particular attention. It seems necessary to foster educational initiatives at universities (e.g., business faculties, legal, and technical faculties possibly could mount a joint "train the trainer" effort), but also – to increase general public awareness – at the high school level.

30. Recommendations at the institutional level

a. *Institutions matter: mind-sets, traditions, institutional architecture.* For implementing new or improved IPR services, it is important to consider who is offering such services. Different mindsets and traditions and thus different institutional architectures make IPR services work in different ways. A specific question arises particularly with respect to the division of labour and the attribution of roles between the national patent offices and the technology/development agencies.

b. *Fostering technology/development agencies as entry points.* Following their tradition, it is questionable if national patent offices have a neutral stance towards all forms of formal and informal IP protection and appropriation methods. Furthermore, it is questionable if they give importance to IP management as well as to IP protection. In this regard and also due to visibility issues, it is desirable to have technology/innovation development agencies act as entry points for clients regardless of whether the patent offices are developed further into fully-fledged IP offices or reduced to their core competence of registration offices.

c. *Bringing the world of patent offices and innovation agencies together.* There is a need to bring the worlds of patent offices and technology/development agencies together, following the rationale that IPR management should be part of overall innovation management. There are a number of convincing cases where cooperation between these types of institutions has worked and which could serve as role models.

d. *The governance of IPR services providing institutions*. As patent offices are a rather new type of player in SME service provision (and because they have been more or less isolated from general innovation support), the governance of the services is a critical issue. Sound governance particularly emphasises the importance of (i) careful needs analysis and service design, (ii) a systematic co-ordination and co-operation between relevant institutions, particularly between the patent offices and the technology/innovation agencies at the level of service provision, (iii) an overarching policy, and, eventually, (iv) the establishment of incentives for collaboration at all relevant levels.

e. *The interaction of private vs. public service provision should be addressed*. It seems clear that public offerings should not displace private ones, but rather enhance or ignite a market for them. In this context, well designed reward schemes (including a later privatisation of initially publicly funded services) could attract the right people to do a good job. Along the same line, it seems that cooperation with patent attorneys is a key success factor for provision of IPR services.

f. *Attracting qualified staff*. The huge importance of expert staff and the evident lack of educational offerings in this respect, especially in terms of the business dimension, have proven to be the most critical factors in the

acceptance and performance of IPR services. In this regard it is crucial to understand that there is a strong relationship between the significance of the service (as signalled by coverage, budget, staff, access to other resources, hierarchical position, expectations, planning horizons, etc.) and the ability to attract competent staff.

31. Recommendations at the policy level

    a. *Division of labour between patent offices and innovation agencies*. A specific question arises particularly with respect to the division of labour and the attribution of roles to the national patent offices and the technology/development agencies. The arguments described under point 23 point to two plausible paths: The first one is to scale down the scope of the patent offices to their core competence of patent filings (and possibly database searches) and to enrich the technology/innovation agencies with IPR services. The second one is to enrich the patent offices with additional business and intellectual asset management know-how, thus creating "institutes of intellectual property". In either case, three aspects seem to be highly important: (i) linkages between the patent offices and the development agencies should be strengthened, and (ii) high permeability for the exchange of staff between the two organisations should be a goal. (iii) Because their services are better known by SMEs, and, more importantly, because they may likely have a more neutral stance towards the usage of different IP protection instruments (given the patent tradition of the patent offices), it is probably advisable that technology agencies act as entry points for customers, not the patent offices.

    b. *Endowment as an indication of priority setting*. Many of the services are small in volume. To the extent that allocation of resources can be considered an indication of priorities, proper endowment with resources (scope, budget, staff, hierarchical position, duration) is critical and pre-determines to a high degree the performance of the services, particularly through the attraction of qualified staff.

    c. *National vs. regional approach*. There is actually no significant evidence for fostering a strong regional approach. On the contrary, there are several arguments for a genuinely national coverage: (i) high visibility of the service can be more easily achieved if the service is known throughout the country rather than only in a specific region, (ii) scarce expert know-how can be pooled at a central unit and does not need to be provided in every region.

    d. *Out-reach/spatial distance*. Out-reach to local SMEs is important, not the least for marketing reasons. The case study user survey has shown that, in general, spatial distance is not considered to be a critical success factor for IPR support services. Regional outlets can be established with the task to promote the service and refer potential customers to the central unit. This does not, however, mean that regional IPR services are of no use. If they complement the national offerings, if they have clearly defined and limited goals in the context of the region and are designed accordingly, and if they are networked enough with other services, they can provide added value.

    e. *Growing policy culture.* While most industrialised countries have developed a comparatively high level of policy culture in the core fields of technology and innovation policy, the field of IPR related services is still somewhat suffering from a rather poor policy culture, covering the whole policy cycle (need assessment, justification, and design; goal orientation in the performance phase, quality assurance and learning through monitoring

and evaluation). Hence, there is a need to foster – in parts already existing – attempts to establish a thorough evaluation culture.

f. *The cost issue:* The study set out to investigate what exists and what can be done in terms of IPR support for SMEs within the *current* IPR framework. While the results have shown that a lot of things can be improved already within the present-day context, changes to the IPR framework itself should nonetheless be tackled. This applies especially to the cost dimension: Subsidy services cannot in general compensate for the lack of a community patent (or the implementation of the European Patent Litigation Agreement and the European Patent Judiciary). Existing subsidy services seem to have in many instances more of a hidden awareness raising function than broad cost-covering goals.

g. *Towards an IP culture*: Finally, the lack of availability of qualified staff (together with the lack of educational initiatives) should be also addressed at the policy level, as it sets constraints for the magnitude of efforts possible for boosting qualified IPR usage and IP management skills of SMEs. Many recommendations can to a large extent bebased on these constraints (e.g., the national approach with a central unit providing the pooled expertise). Given the importance of a firm's IP in today's economy, policy should address the know-how of SMEs, trainers and also the general public on IP management/protection/usage matters.

1 Introduction

This document constitutes the *Final Benchmarking Report* for the study "Benchmarking Regional and National Support Services in the Field of Intellectual and Industrial Property". The study was commissioned by the European Commission, DG Enterprise and Industry as part of its PRO INNO activities and, more specifically, INNO Appraisal measures. Its aim is to identify, analyse, classify and benchmark support services for SMEs in the area of Intellectual Property Rights (IPR) as provided in the EU-27, Iceland, Liechtenstein, Norway, and Turkey and in a number of non-European countries (USA, Canada, Japan, and Australia).[1]The project was designed as a comparative benchmarking analysis focused on the efficiency and effectiveness of public-funded support services aiming at assisting SMEs on IPR issues.

In particular, it was the purpose of the study:

1. To collect and analyse information on existing support services for SMEs in the area of intellectual property rights;
2. To benchmark a selected number of relevant support services;
3. To identify good practices;
4. To disseminate the results.

The rationale behind this undertaking rests on several facts: First, the importance of SMEs for the European economy is noteworthy. Secondly, a number of studies have clearly shown that innovation, and especially innovation in SMEs, contributes greatly to economic growth and welfare. In this context, the issue of protecting innovative ideas, products, processes and services has been gaining importance and has led, since the 1980s, to think of a "pro-patent" area where ownership of rights to innovations constitute a major competitive advantage for a company. Yet, empirical evidence suggests that SMEs make little use of the available legal protection systems which would in turn call for respective policy intervention. As a result, most countries in Europe have introduced support services in the field of IPR for SMEs.

A current and comprehensive inventory of available support services – together with an up-to-date analysis of how support services should be designed in order to be of value for small and medium sized enterprises – was considered desirable. Policymakers, interested stakeholders and SMEs would thus have a central source of information with regard to what is provided in the respective countries and to what constitutes good support measures. This study intends to fulfil these two functions.

The project was carried out by the Austrian Institute for SME Research as the lead institute and the Technopolis Group as the main partner. The consortium was aided by a number of research organisations, most of whom are part of the ENSR network (European Network of Social Research). These organizations conducted research on site in their respective countries. A complete inventory of participating organisations is given in the imprint of this report.

This report is structured as follows:

- Section 2 describes the methodological approach used for this study.
- Section 3 discusses the growing significance of IPR for SMEs and establishes the basis for discussing policy options in this field. It makes a particularly strong point of looking at IP protection tools as a whole, thus emphasising the role of strategic IPR management, rather than of patenting alone.

[1] Please note that for easier recognition the term IPR is used instead of IIP throughout the document.

- Section 4 takes up the results of the preceding section, derives respective implications for policies and presents a framework of policy options which could be used to foster the usage of IPR by SMEs.
- Section 5 gives an overview of the available support services identified in the countries under scrutiny and elaborates on the features of the services. The benchmarking criteria are presented, and a selection of services is examined according to these criteria, with the goal of singling out elements of good practice. Furthermore, provisions are being laid down for certain generic types of services.
- Section 6 provides the general policy conclusion. The recommendations given aim at strengthening the usage of IPR by SMEs, but may also prove to be useful for fostering IPR utilisation as a whole.
- Annex I to this report comprises a detailed analysis of 15 case studies which were selected for illustrating elements of good practice.
- Annex II provides the full list of analysed support measures. An electronic database of these services is available separately.

2 Methodological framework

2.1 Overview on the study design

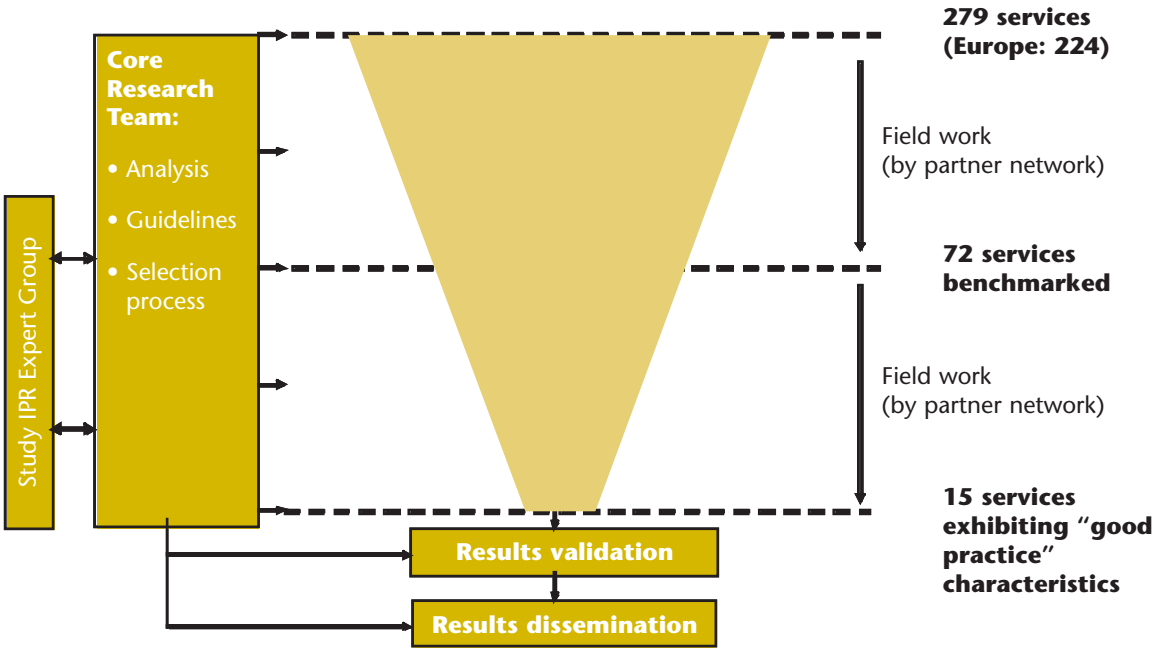
A multi-stage study design was chosen for collecting and analysing information on existing support services for SMEs in the area of intellectual property rights (IPR), benchmarking selected services and identifying good practice elements. The design involves several distinct research phases. The whole approach can be best pictured as a "selective funnel" (see Graph 1). Using this funnel, the number of services analysed is, on one hand, reduced within subsequent research phases while, on the other hand, additional information is collected for those services which remain under scrutiny. Thus, three research phases can be distinguished:

- In Phase 1, the **identification phase**, all relevant support services falling within the scope of the study were identified, categorized and, together with some key information on the services, compiled into a database.
- In Phase 2, the **benchmarking phase**, a selection of the identified services (those which looked promising to becoming good practices) was further scrutinized in order to derive hypotheses regarding elements of good practice for SME-focussed IPR service provision.
- In Phase 3, a number of benchmarked services was selected for detailed case-study analysis and for illustrating **elements of good practice**. The aim of this phase was especially to substantiate the empirical evidence concerning the elements of good practice, in particular by including the user views.

The study design was applied to 279 services identified in the countries of the EU-27, Iceland, Liechtenstein, Norway, and Turkey and a number of non-European countries (the USA, Canada, Japan, and Australia). 72 of these services were benchmarked, and 15 of these services were selected as exhibiting good practice.

2.2 The three research phases in more detail

Graph 1 Study design



Source: Austrian Institute for SME Research

As mentioned above, the research study was divided into three research phases, which shall be described in more detail below.

Phase 1: The identification phase

In the **identification phase**, a semi-standardised identification guideline was developed by the core study team of the Austrian Institute for SME Research and Technopolis. It was used by the partner network to identify relevant IPR support services for SMEs. The guideline was designed to capture the main characteristics of the services, such as target groups, types of IPR instruments covered, contact details, running times, budgets, service descriptions and objectives. The identification forms were, together with a document containing further explanations on how to conduct the research, distributed among the research partners in each of the countries to be surveyed.

Filled-out identification forms were sent back to the Austrian Institute for SME Research, compiled into a MS ACCESS database, and classified. A classification system was specifically designed for the latter task, based on the evidence received and taking into account the main features of the services. The research in Phase 1 was conducted in the time period of January 2006 till June 2006. The findings of the first phase, and especially the list of identified services, were validated by the European Commission and the GSO (Group of Senior Officials on Innovation) in July and August 2006.

Phase 2: The benchmarking phase

In the **benchmarking phase**, a second semi-standardised guideline was developed (the benchmarking guideline). It was to be completed for a selected number of services which could at that time possibly be considered as "good practice" services. This benchmarking guideline was used to query a range of indicators which were deemed necessary to gauge the performance of the service: Indicators for the design and for preparatory activities of the service offerings (such as types of preparatory activities, time spent for preparation, etc.), for the implementation of the scheme (such as quality assurance mechanisms in place or organisational issues) and, finally, indicators concerned with the output and outcomes of the services (take-up by SMEs or, in more general terms, strengths and weaknesses).

The benchmarking guideline was to be completed by conducting further desk research and by conducting a compulsory open, face-to-face interview with the manager of each benchmarked service. The research for phase 2 was carried out between August 2006 and December 2006.

Phase 3: Case study analysis of 15 services exhibiting elements of good practice

In the **third phase (the case study analysis)**, the information retrieved in the benchmarking phase was scrutinized in order to empirically back up hypotheses on the elements of good practice (i.e., elements that would contribute to a desirable performance of the service investigated and of similar other services). Fifteen **services were selected for case studies** to illustrate "good practice" elements. In order to further substantiate the evidence concerning the elements of good practice, the research methodology was further refined: On one hand, a survey was carried out in order to catch the views of the users of the services and, on the other hand, three to five open qualitative interviews with stakeholders of each service and national IPR experts were conducted in order to fill in missing information on the service as well as to assess the value and status of the service in the overall national innovation system.

The **user survey** was based on a standardised questionnaire with selected open-ended questions. The questionnaire was (with minor exceptions) identical for all services, in order to allow for cross-service and cross-country comparisons. It also included some questions from the third community innovation survey (CIS III) (Eurostat, 2004) to further allow comparisons between the innovation behaviour of

the user groups and that of the general SME population in a country. The survey was carried out by means of telephone interviews.

Table 1 indicates the response rates for the user survey, broken down by services. Fifty realised user interviews were targeted for each service, giving a planned total of 750 filled out questionnaires. For all of the services, the response rates fell short of 100%, partly because of data protection issues and partly because of deficiencies in user addresses. However, in most cases the number of filled out questionnaires is deemed sufficient for statistically significant results.

The number of realised open interviews with experts (stakeholders and national IPR experts) in phase 3 amounted to 55.

Table 1 Response rates for the user survey in Phase 3 (case study analysis) *

Nr.	title of the service	address pool (1)	contacted users	executed interviews	response rate
1	INSTI SME Patent Action (GER)	3000	460	52	11 %
2	Patent Information Centre Stuttgart (GER)	132	132	35	27 %
3	IK2 (SWE)	85	81	50	62 %
4	IOI (NLD)	200	94	50	53 %
5	IP Prédiagnosis (FRA)	82	82	30	37%
6	What's the key? Campaign (UK)	15	14	13	93 %
7	IA Centre Scotland (UK)	256	136	46	34%
8	serv.ip (AUT)	542	95	56	59 %
9	Intellectual Property Assistance Scheme (IRE)	53	53	41	77 %
10	VIVACE (HUN)	4000	450	50	11 %
11	SME Services of the Research Centre Henri Tudor (LUX)	47	41	20	49 %
12	Foundation for Finish Inventions (FIN)	138	85	49	58 %
13	Promotion of Industrial Property (ESP)	154	90	53	59 %
14	SME services of the Danish patent office (DK)	79	79	35	44 %
15	Technology Network Service PTR (1er brevet) (FRA)	385	253	50	20 %
TOTAL				630	

(1) Number of available contacts

** The case studies are presented in lose order – the numbering does not represent a ranking of any type and is used only for easier referencing.*

Source: Austrian Institute for SME Research

3 SMEs in the IPR world

3.1 SMEs and innovation: The case of IPR

Data and various studies conducted over the past years have underlined the importance of **small and medium-sized enterprises**[2] for the European economy. According to the office for official publications of the European Communities (European Commission, 2005; see also: Schmiemann, 2006), around 23 mio SMEs existed in 2005 in the EU-25 (prior to the accession of Bulgaria and Romania) representing 99 % of all enterprises. These companies employ around 75 mio people which account for two thirds of the total workforce available. Micro enterprises, which employ less than 10 employees, constitute the majority of all firms.

Besides their obvious significance in terms of numbers and jobs, one of the key strengths of the SMEs is seen in their innovation activities (Innobarometer, 2004). In general, innovation is considered to be an important factor influencing economic growth, because it has, on average, a positive impact on productivity – considered to be essential in competing in a globalised world – and on the creation of better living standards (European Commission, 2003a).

As regards the innovative behaviour exhibited by SMEs, the following can be said in brief:

- SMEs are, on average, more innovative than one might think: According to the 4th Community Innovation Survey (Parvan 2007; see also: Eurostat, 2004), about 33 % of the enterprises who have 10-49 employees and around 40 % of the enterprises with 50-249 employees can be considered innovative (i.e., they introduced new or significantly improved products or processes in the time frame of 2002 to 2004).
- When it comes to innovation, SMEs have certain advantages in terms of flexibility and adaptability (i.e., behavioural aspects) over large enterprises, while large enterprises have their advantages on the resource side (available financial funds and technical resources) (Blackburn, 2003). In addition, innovation in small enterprises tends to be less R&D-driven and is developed more informally than in large enterprises (European Commission, 2006; Blackburn, 2003).
- There are indications that innovation in general has a positive impact on employment, which is generally more pronounced with SMEs than with large scale enterprises (LSEs). This refers to product as well as process innovations (Sheikh & Oberholzner, 2001).

Against this backdrop, it seems clear that fostering innovation activities should constitute a focal point for policy-makers and that SMEs should be given special attention in the formulation of respective policies.

One of the possibilities to induce innovation is the introduction and use of property-like rights – perhaps the oldest institutional arrangement particular to innovation as a social phenomenon (Granstrand, 2005). **Intellectual Property Rights (IPR)** can be regarded as a bundle of rights that protect applications of ideas and information that have commercial value (Gowers, 2006: 11)

The IPR system has three goals (Gowers, 2006: 11):

1. To provide incentives for knowledge creation (and thus also the build-up of wealth),
2. To accumulate knowledge in a culture and
3. To protect a distinctive identity.

[2] For the definition of the term SMEs, the current classification of the European Commission was drawn upon. Under this definition, SMEs are firms which have less than 250 employees and either have an annual turnover of less than or equal to € 50 mio or a balance sheet total of less than or equal to € 43 mio (European Commission, 2003b).

The rationale behind implementing such rights is seen in the fact that knowledge, ideas and creations are partial public goods which are relatively easy to consume and use (and especially to copy) but expensive to develop. Without a system of exclusive rights, which give creators some control over how others use their ideas (in particular to what extent others can make money with their inventions), there would be, on one hand, much less incentives to pursue innovative activities. On the other hand, inventors still developing new products and services would try to keep their know-how as secret as possible. The latter would make especially the development of follow-up innovations (based on an original invention or idea) very difficult.

The ideal IPR system is able to overcome the gap between the societal interest in having all inventions made available widely and the individual interest of getting a maximum reward for inventive efforts by granting a creator or inventor some form of exclusivity, at least for a limited amount of time. While gaining the protection, the inventor has to make his or hers ideas public. Public disclosure disseminates the knowledge. During the period of protection, access to the use of the know-how of an inventor by follow-up innovators is limited and in the hands of the inventor; in the long run, the idea becomes a public good and follow-up innovators can use the original work freely for the development of new ideas.

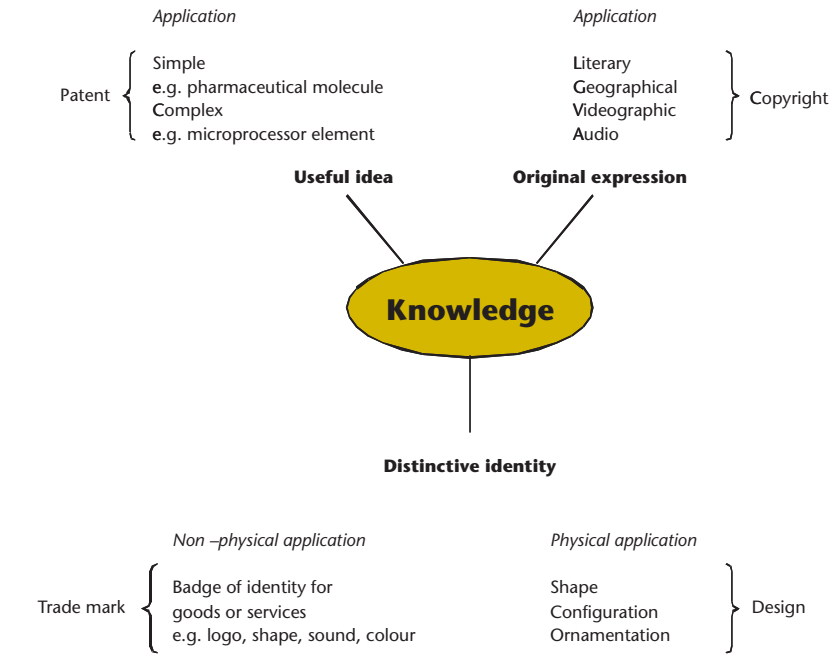
3.2 The IPR system in a nutshell

3.2.1 Formal IPR usable by SMEs

The most important IPR instruments are shown in Graph 2. They differ according to what they protect (i.e., a useful idea, an original expression or a distinctive identity), the degree of legal formality (i.e., the registration requirements) and other functional aspects (e.g., time up to which the instrument grants protection). Short descriptions of these instruments follow to provide the basic framework.

Patents cover inventions of new and/or improved products and processes (Blackburn, 2003: 6). Against the disclosure of the technical details of an invention to the patent office, the patent holder (patentee) receives the right – for a limited

Graph 2 Major IPR instruments and common applications



Source: Gowers, 2006

amount of time (mostly up to 20 years) – to stop others from making, selling or using an invention for commercial purposes without permission. The patent is not only the most traditional and well-known instrument for protecting IP, it is also the one with the highest degree of legal formality, requiring formal registration at a patent or IP office and an examination with respect to the different criteria of patentability.

In order to be patentable, an invention has to fulfil the following four criteria (Gowers, 2006: 13):

1. The invention has to be novel (i.e., the specifications must have never been made public in any way anywhere in the world)
2. It has to exhibit an inventive step (i.e., if compared to what is already known it would not be something obvious to someone else skilled in the domain)
3. It has to be capable of industrial application (i.e., being of use for industry)
4. It should not fall under a list of activities which are distinctly marked as not patentable (this would refer to, for example, discoveries, scientific theories, mathematical methods or artistic work)

It is important to note that patents are instruments which are currently operational at national levels only. A patent granted in one country is solely valid for that specific country. If patents are needed elsewhere, patent filings are necessary in each of the countries in which protection is sought. Furthermore, every country has its own laws governing patents and, though legislation is mostly similar, subtle differences may exist.

Most national patent systems require that the patent be filed in the respective national language. This means that in case an inventor seeks to protect his or hers invention in the whole of Europe, the patent has to be translated into all national languages. In order to facilitate such an international application process, a special treaty, the Patent Corporation Treaty (PCT), was signed in 1970 by – initially – 18 contracting states. The PCT was amended several times, the last time in 2001. It has now more than 100 members.

So-called PCT applications (or international applications) can be submitted for an initial filing at a specialised receiving office in one language. If the invention fulfils the requirements of patentability (which is assessed through a search by an authorised International Search Authority that issues an International Search Report (ISR)), the patent is also granted by the various national patent offices who take part in the PCT. The applicant still has to know, however, in which country he/she is looking for patent protection and the documents still need to be translated into the respective languages. Nonetheless, the advantage of having to submit only once at a central authority, together with the fact that fees for national translations have to be paid only at a later stage, constitute a major bonus over the route of individual filings in each country.

A case unique to Europe is the so-called Euro-direct patent. European countries which signed the European Patent Treaty offer the possibility of a patent being filed either at the office of the European Patent Organisation (EPO) in Munich, or at the respective national offices. Once the EPO grants the patent, the patentee only needs to have the patent translated into the languages of other European countries for which he/she is seeking protection. The validation process in the respective countries does not entail another separate examination. Hence, European companies have three routes for patenting: national only, Euro-direct and PCT.

The idea of a Community Patent

The idea of the so-called "Community Patent" or COMPAT dates back to the 1970s. The basic rationale can be seen in the legal uniformity: Enforcement can be carried out centrally; patent disputes can be settled with a supra-national patent court. Most importantly, a Community Patent would also allow for significantly reduced patenting costs by avoiding the need for multi-translations (Cannon, 2003; Ullrich, 2006). In this light, a Community Patent would fulfil key principles of the Internal European markets.

However, and while discussions about installing a framework for a Community Patent system have continued since the 1970s, no tangible results have been achieved so far. Progress has been made to the extent that legal agreements have been negotiated which tackle the costs and the judicial arrangements issues within the current European patent system. In 2000, 10 EPO members drafted the London Agreement (EPO, 2005; EPO, 2006) which aims to reduce costs of translations by introducing a cost-attractive post-grant translation regime for European patents. In addition, the European Patent Litigation Agreement (EPLA) (EPO, 2007), first drafted in 1999, proposes the creation of a European Patent Judiciary (EPJ) comprising also a supra-national European Patent Court. Neither agreement is in force yet, but there is considerable support regarding the rapid ratification of the London Agreement and an adoption of the European Patent Litigation Agreement (EPLA) (European Commission, 2007).

The latest proposed version of how a Community Patent can be set up was declined in 2004, because the jurisdictional arrangements were considered inadequate, and there was dissatisfaction with the language regime. Nevertheless, the creation of a single Community Patent continues to be a key objective for Europe to increase innovation performance and competitiveness. Therefore, the European Commission seeks to present a comprehensive IPR Strategy Communication by 2008 to tackle the main outstanding non-legislative and horizontal issues in all fields of intellectual property to support the process of harmonising patenting procedures across Europe (European Commission, 2007).

Trade marks constitute another important pillar of the IPR system. Trade marks are badges of origin for goods or services, comprising words, names, logos, colours, sounds and/or shapes (Gowers, 2006: 15). This type of IPR instrument needs to be registered with the national IP offices, and, once registered, prevents others from using the same or similar badges on the same or similar products. A trade mark, if successfully applied, allows for easier identification and lower search costs by consumers, because it stands for a specific reputation concerning the type and/or quality of products and services delivered under the mark. An important and noteworthy aspect of a trade mark is that it loses its protective function, once it becomes used as a generic term.[3]

(Registered) designs protect the appearance of the whole or part of products, including shapes, configurations and ornamentations. Protection may be granted for up to 25 years. In order to qualify for registration, a design must be new and exhibit individual character. This requirement means that the overall impression an informed user gets from the design must be different from the impression such a user would get from any other design which has been already made available to the public in either a registered or unregistered way.

[3] This can happen if a certain brand or word is, after some time, used by the general public to denote a general class of items. If, for example, the general public would start to use the term iPod for all MP3 players sold by different manufacturers, Apple would likely lose the rights to using this word exclusively for its range of music players. A case in point where this has happened is Sony, whose 'walkman' is not eligible any more for trade mark protection in Austria. Most recently, Google has advised media outlets not to use its trade mark inappropriately, as people start to increasingly call all types of internet searches 'googling' (see Gowers, 2006: 15).

In contrast to arrangements for patents, a community wide registered design (the registered community design, abbreviated CD) was implemented. Since January 2003, firms are able to register the design at O.H.I.M. (Office for Harmonization in the Internal Market (Trade Marks and Designs)) in Alicante, Spain. A design registered at this office is automatically valid in all member states of the European Union – no further validation or translation is needed. OHIM also administers the Community Trade mark, which implements structures similar to the CD for trade marks.

Copyrights comprise the fourth large pillar of the IPR system. Work protected by a copyright may not be legally reproduced, distributed and communicated to the public without the consent of the owner. Furthermore, the owner has to give permission to publicly lend, rent or perform the work under his/hers copyright. The copyright is an example of an IPR instrument of lesser legal formality, because it does not need to be registered. It arises automatically, once it is "fixed" in some way (e.g., on paper, on film, on recordings, by using files on servers in the internet, etc.).

The copyright covers the way ideas are expressed, but not the ideas themselves. For example, Dan Brown's book "The Da Vinci Code" was cleared of charges that it would infringe the copyright of an earlier book which already contained many of the theories written in "The Da Vinci Code". Using ideas from copyrighted work for one's own work is thus not considered to be a copyright infringement. Exceptions to this rule have been, however, put in place for two cases: (1) if transaction costs for clearing rights are too high (e.g., for book reviews or for copying for non-commercial private research under library privilege); and (2) in order to account for equity issues (e.g., translation of texts into Braille or copying for preservation).

Besides the four main IPR instruments above, there are also other IPR instruments which have been developed to cope with specific types of inventions. Examples include plant varieties, semi-conductor topographies, geographic indications or IPR titles for databases. These types of IPR are summarised as "sui generis rights" (as opposed to primary IP rights).

A last noteworthy type of IPR is the **utility model**. The utility model was introduced as a cheaper but simpler alternative to patents, especially with the needs of SMEs in mind. It is available only in a limited number of countries – in particular, in some European countries (Austria, Germany, France, Finland, Italy, Spain, Portugal, Poland) and, for example, in Japan, Taiwan and China. The utility model can be best described as a "patent light": It has less stringent patentability requirements, a shorter maximum life time and it is not substantially examined upon registration (in terms of prior art search), but it enjoys also a smaller degree of legal protection. Legislation varies from country to country, but the basic concept is the same.

3.2.2 Informal IP protection mechanisms

The formal IPR system provides a framework for protecting the intellectual property of a firm. As stated in section 3.1, the system can be considered to facilitate specific deals between society and inventors: The inventor receives some form of defensible exclusivity in exchange for making otherwise secret information available to the public. The aim of the system is to maximise welfare and innovation output, taking into account both the interests of the original innovator and that of follow-on innovators.

For the profit-maximising firm, it is, however, important to know that it can also use mechanisms and/or engage in behaviours outside the IPR system in order to protect its intellectual property. Such informal IP protection practices are extremely varied (Kuusisto, 2007; Kitching & Blackburn, 2003: 21). Examples include building specialist know-how into products to restrict the possibility of re-engineering, regulating access to information or, as an alternative, disseminating knowledge

within the business to circumvent dependence on individual employees, or using secrecy agreements.

Empirical evidence shows that such strategies are extremely important for all types of enterprises, not the least for SMEs. This may be due in part to shortcomings of the system of formal IPR, but may also be determined by other factors. For example, the study by Kitching & Blackburn suggests that firms believe their IP (or, to be more precise, their confidential know how) to be threatened much more by inside sources (i.e., their own employees) than by outside competitors. While many of the informal practices seem to address the inside problem alone, informal IP protection practices prove also useful for outside protection.

Some of the most cited informal IP protection strategies are:

- **The Trade Secret:** Trade secrets can be described as secret or proprietary information of commercial value (LIIP, 2003). Though there are differences in the exact definition in different jurisdictions, information classified as a trade secret usually exhibits three traits: It is not generally known to a relevant portion of the public, it has commercial value (whereby the value must stem specifically from its secret nature); and reasonable action is taken to maintain its secrecy. The most famous trade secret is probably the one held by Coca Cola regarding the recipe of its main beverage. Although trade secrets are not protected by law in the same way as patents or trade marks, trade secrets may still enjoy some level of legal protection (though the extent to which this is granted varies from country to country). In this context, one would generally distinguish between lawful means to obtain a trade secret (e.g., by reverse engineering) and improper means (e.g., by industrial espionage) – the latter would entail legal liability for the party acquiring the secret.
- **The strategy of Lead-Time advantage:** This strategy denotes a behaviour by which the company relies on being consistently more innovative than its competitors, constantly being in the lead with regard to its innovative activities. By applying such a strategy, the inventing company always has an enhanced version of its products ready for release before a competitor who has successfully copied the currently available version.
- **The strategy of relying on the complexity of the design:** The composition and building structure of some products may be sometimes so complex that competitors would incur disproportional cost to copy the product. If this is the case, a firm may rely on the complexity of its invention for protection. As with the lead-time strategy, patenting could prove counter-productive, as the patent would provide the blueprints of the invention to unlawful copiers. However, the danger is that the competitor successfully (and legally) re-engineers or re-invents the innovation on its own, and, in the worst case, even files for a patent. In such a case, the original inventor may be driven out of the market, because the patentee may rightfully press charges for infringement.
- **Defensive Publishing:** Defensive Publishing denotes a strategy whereby the company makes the blueprints of its inventions available to the public, for example by publishing in a specialist journal. That way everybody can use the invention for commercial purposes, but – as an advantage – nobody is able to patent it any more. A firm engaging in defensive publishing makes sure that it maintains its so-called freedom to operate, and mitigates the risk of being patented out of the market with its own invention. This strategy may be applied when the company believes that obtaining a patent is too costly (or litigation too risky), and there are indications that better-positioned companies will likely re-engineer the invention and patent it themselves. Companies such as IBM, Philips or Siemens operate their own journals for the purpose of defensive publishing (e.g., the IBM Technical Disclosure Bulletin).

3.3 Usage Patterns of IP protection methods by SMEs

Overall demand for and usage of IP protection methods

The **demand for IPR** has been increasing over the past decade. Graph 3 indicates the growth in patents worldwide between 1999 and 2004. With a yearly average growth rate of 26 %, demand in 2004 for patents was about three times higher than in 1999. It has to be noted that most patents stem from PCT applications, which account for approximately 83 % of the patent demand each year.

As regards trade marks and designs,[4] OHIM reports an increase from 43,144 applications for community trade marks in 1996 to 77,460 applications in 2006 (OHIM, 2007). This would correspond to an increase of around 80 % in that timeframe. As community designs have only been available since 2003, corresponding time series data is limited to the years afterwards, but the data from OHIM suggests that demand for this type of IPR is also increasing.

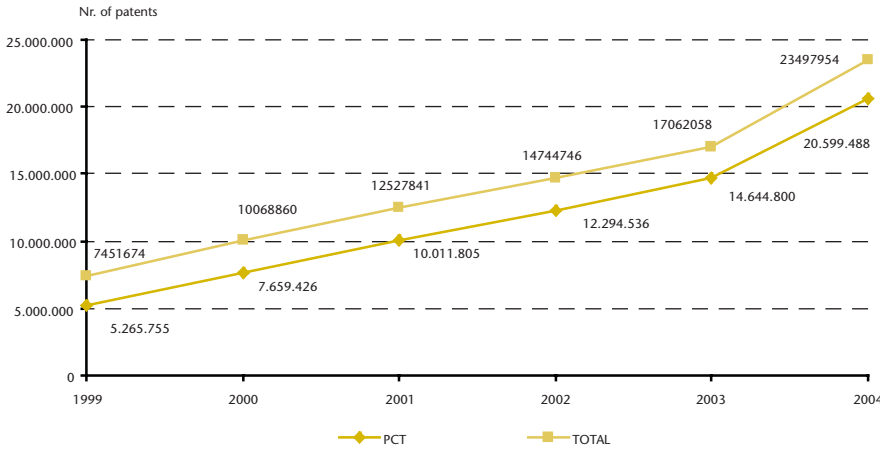
The issue of data availability concerning the usage of IPR by SMEs

While data derived from the application process is available for different formal IPR instruments, a breakdown by firm size is not possible. IP offices usually do not require applicants to provide information on company size, and mostly they do not even offer the opportunity for a respective statement on the application forms. Even if such data were to be collected by the (national) IP offices from the applicants, the results would most likely still have to be interpreted with great care. First, the fact that companies may file in any country may cause data from an individual national patent office to be misleading. Second, many large enterprises have small subsidiaries which perform patent applications on behalf of their mother firms for strategic reasons. This would introduce another bias in data from IP offices.

The Non-Use of IPR by SMEs

A quantitative analysis of IP protection activities (including patents) by SMEs can thus be – in most instances – only conducted using survey data. A number of surveys have been tackling this issue (see, for example, Thumm, 2006; Blackburn, 2003; WIPO, 2003a), the most comprehensive one for Europe being the Community Innovation Survey (CIS) (i.e., Eurostat, 2004). The results from the

Graph 3 Demand for patent rights worldwide



Source: Trilateral Statistical Report, 2004 and 2005, cited in Gowers, 2006: 25

[4] As copyrights are not registered, no data concerning the number of claimed copyrights can be derived.

third Community Innovation Survey[5] indicate – in line with findings form other studies – that SMEs make, on average, very **little use of the formal system of IPR** and use more informal IP protection mechanisms (Arundel, 2000).

Depending on the country, between 0.9 % (Bulgaria) and 9.1 % (Germany) of all the SMEs[6] applied for a patent in the time frame of 1998 to 2000. If the denominator (number of all SMEs in the country) is replaced by the number of innovative companies, the shares of patenting small enterprises (10-49 employees) would fall into a range between 4 % (Portugal) and 18 % (France), the share of patenting medium-sized enterprises (50-249 employees) would range between 4 % (Iceland) and 35 % (Sweden). As regards other IPR, slightly higher usage rates are only reported with respect to trade marks. Informal protection methods are, by contrast, used much more frequently: trade secrets by up to 50 % of the small innovative enterprises in the UK; the strategy of relying on lead time advantage by around 40 % of small- and by around 44 % of medium-sized innovative enterprises in Germany.

Large companies make much more use of IP protection methods, be it formal IPR or informal IP protection: Usage frequency is up to 5 times higher with respect to patents, but also between 2.3 (reliance on design complexity) and 2.6 times above the level of SMEs as regards informal protection methods (though part of the difference may be due to statistical artefacts, which could be dampened by using other indicators such as the number of patent applications per 1,000 employees within specific size classes).

Size and sectoral considerations with regard to IPR usage by SMEs

As CIS data refers only to companies with more than 10 employees, the area of **micro-enterprises** with up to 9 employees and their usage levels of IP protection strategies remains an area largely open for investigation. One might expect that corresponding usage levels are close to insignificant, given the observable positive correlation between company size and IP protection instruments employed. As a matter of fact, a recent study by Pitkethly found that only 7 % of the micro-enterprises in the UK applied for a patent; the share of patenting firms in other size classes was at least more than twice as high (Pitkethly, 2007). On the other hand, though, a large pool of anecdotal evidence suggests that start-ups which are based on newly developed products and/or processes, or owner-manager firms where the owner has a personal interest in patenting (thus acting more like a private inventor who only looks for personal enjoyment from fixing a technical problem) (Lahner, 2004), might benefit greatly from using formal IPR or even heavily using IPR. Thus, a differentiated approach has to be taken when analysing IPR usage by micro-enterprises.

Similarly, while the average usage of formal IPR by SMEs is relatively low, it has to be noted that for some sectors and industries IPR is essential even for smaller firms. The most prominent such sectors are:

- **The biotech sector**: The usage of patents is especially high with biotech and most notably with bio-pharmaceutical companies. SMEs play a vital role for innovation in these industries. Long development times and the fact that often one patent alone stands behind a product make patents the primary tool for the protection of IP. The survey by Thomas (Thomas, 2003) indicates high awareness levels by biopharmaceutical SMEs with regard to IPR, a perceived high effectiveness and significance of IPR for the competitiveness of the firms and a view that patenting costs are on average not too high.
- **The electronics and ICT manufacturing industries:** Patent usage is also important in the context of electronics industries and the manufacturing

[5] Community Innovation Survey IV (CIS4) data for the usage of informal ('strategic') protection methods was not available in the data released by Eurostat. In addition, as the questionnaires for the CIS4 and CIS3 surveys are not identical and the results can not fully be compared, only CIS3 survey results were used in this study. However, one should note that CIS4 results would basically be in line with those from CIS3.

[6] For the CIS3 survey, SMEs are defined as enterprises with between 10 and 249 employees. Enterprises with less than 10 employees are not covered by the survey.

industries of the ICT sector. These industries can be characterised by rather short product life cycles and also low sales prices, coupled with small profit margins per unit sold. R&D expenses for these products are nonetheless high, and many devices have to use several technologies, each of which might be protected by a range of patents. In this environment, open innovation models play an important role, and large as well as small companies frequently combine together in changing constellations to develop these base technologies which are then to be used by several manufacturers and brands in their products. As the profit margins per unit sold are low, a significant share of the income of the ICT and electronics companies nowadays stem from out-licensing to other manufacturers and to a lesser extent from direct sales revenues (Elevald, 2007).

- **The software and entertainment industries:** The software sector is one of the most important users of copyrights, and the other one is the entertainment industry. As the products of these industries can be easily copied in the digital era, IP protection has become a key issue in these sectors of the economy. The ongoing discussion about the patentability of software is a case in point. Currently, and in contrast to the US, no IP protection in the form of a patent can be given in Europe to software as such. Apart from and notwithstanding the discussion on software patents, easy copying and distribution possibilities have been leading to the development of new business models, some of which are heavily IPR-related (e.g., double licensing with open source software). Readers are advised to refer to the corresponding and abundant literature on this topic, as the subject of IPR usage in software industries clearly goes beyond the scope of this overview for the benchmarking study.

Other users making heavy use of formal IPR are the automotive sector (with a usage pattern which is to an extent similar to that of the ICT industry), the textiles sector (here trade marks and designs are of importance, but sometimes also patents (Thomas, 2003), e.g., for high-tech, special purpose textiles) and even the food industry.

3.4 Perceived and real barriers to IPR usage by SMEs

As has been shown above – and despite relatively high usage levels in certain industries –, SMEs seem to make, on average, rather little use of the system of formal IPR. The reasons for that have been explored in a number of studies (WIPO, 2003a; Thumm, 2006; Blackburn, 2003), all of them yielding a more or less similar picture: The primary perceived constraints are the costs of IP protection, difficulties in enforcing already obtained rights, the time to make IP protection work, followed by little awareness on the side of the SMEs about IPR issues, and a (perceived and/or real) bias of patent examiners towards patent applications of large firms.

High costs of using IPR

Costs are considered to be the primary barrier by SMEs to using the formal system of IPR more intensively. This applies especially to patents. Costs incurred arise at different times in the patenting process and for different purposes. One can distinguish between pre-filings expenditures, initial filing costs and costs for conducting prior art searches or, after obtaining the patent, maintenance/renewal fees. In case the patent is to be valid in more than one country, additional costs of validation (e.g. for translations) have to be covered too, depending on the number of countries protection is sought for. It is also important to consider the costs for a patent attorney/agent (external costs) and also probable costs for enforcing the rights in case they are infringed. The latter aspect will be dealt with separately further below. The answer to the question of how expensive patenting actually is, is far from straightforward. The **costs of a patent** depends on many factors,

including, among others, the route taken for applications (PCT, national, Euro-direct), the number of countries for which protection is sought, the number of pages of an application and the technology field in question.

Roland Berger Market Research (Roland Berger Market Research, 2004) was given the task by the European Patent Office to analyse and compare the costs of patenting in different countries. The methodology included a survey of about 250 patenting companies (a mixture of SMEs and large firms) and the analysis of available data from the EPO, both from which model patents (representing "typical" patent applications) have been derived. Average costs for a Euro-direct and a Euro PCT model patent are shown in Table 2.

Comparisons with the US and Japan indicate that a Euro-direct patent may be, on average, more than twice as expensive as an equivalent US patent and more than three times more expensive than a Japanese patent. High costs in Europe are said to be mostly due to translation costs, which are irrelevant for the US and Japanese patent systems. Official fees seem to play a rather minor role – they are estimated to amount to on average € 3,470 at the EPO, € 2,050 at the USPTO and € 1,570 at the JPO. As these figures are estimates by the patentees, it may be assumed that they are already adjusted for preferential rates given to SMEs in the US (by using the so-called Small Entity Act) and by the JPO for initial filings.

It is once again important to underline that, while the figures and model patents are based on empirical data, variations with respect to certain cost categories can amount to up to 100 %. It can be easily seen that the costs are considerable for a company.

Further, it is necessary to look at the **timing of the payments**, i.e., when individual fee instalments are due. For the PCT route, for example, a patentee has to decide within 30 months[7] after having started the patenting process (the reference point in time is called the priority date), in which countries he/she is actually looking for patent protection. This gives the firm a bit of leeway for cost and strategic planning, but it also sets a deadline. Similar periods of times and deadlines apply for other cost categories in the patenting process. Overall, the cost structure and the timing of the instalments have relatively far-reaching consequences for the design of an IPR support service (especially for financial subsidies – where aspects such as what type of costs are to be subsidised or for how much time support should be given – have to be taken into account) and for the strategic IP management of a firm.

Difficult enforceability of IP rights

IP rights can only work to the extent to which they are enforceable. In case a competitor infringes the IPR of a firm, the firm should be able to litigate successfully, at sufficiently low costs and in a timely manner. In practice, however, litigation often turns out to be difficult.

Table 2 Total cost of a representative EPO patent, in €

Expenditure	Euro-PCT (1)	Euro-direct (2)
Pre-filing expenditure (excl. R&D)	9,130	6,240
- In-house cost	4,190	2,540
- External cost	4,940	3,700
Cost of processing	21,990	14,420
- In-House Cost	5,680	3,070
- External cost	16,310	11,350
Cost of validation	15,580	9,870
TOTAL	46,700	30,530

(1) average: 8 countries covered by patent
(2) average: 6 countries covered by patent
Source: Roland Berger Market Research, 2004

[7] This amount of time may differ slightly from country to country.

In a study conducted by Kingston (Kingston, 2000), 600 known SME patentees in the US and Europe were questioned about their experiences with infringement. Two-thirds of these firms were faced with attempts to copy their patented inventions. Of these, 25 % found it difficult to learn about the infringement. About a quarter of the copyings were by larger competitors. The financial damage sustained was for about half of the respondents "unimportant" or "bearable", but for 21 % it was very serious. Most of the disputes were settled out of court (80 %). Patent litigation insurance was taken out by only a small minority of the firms (14 %). However, successful claims against the insurance were only made by 2 %. Arbitration was hardly used. Case studies and anecdotal evidence suggest that large companies use their resources for litigation to intimidate SMEs rather strongly. In a considerable number of cases, SMEs did not get compensation for infringed patents.

Overall, the difficulties in establishing effective litigation procedures can be considered to be a **significant threat** to SMEs. It has to be recalled that by patenting, blueprints are delivered to potential unlawful copiers. This implies that prior to patenting proper risk assessment with respect to enforceability is necessary, and in many instances the solution would be to stick to trade secrets or to rely, for example, on a lead time advantage strategy. Kingston recommends that legislation be passed which would allow for some form of compulsory arbitration. In the absence of such legislation, it is also suggested to create a voluntary association of SME patentees (a Patent Defence Union, as Kingston called it). Members of such an association would agree to settle all IPR-related disputes by technical arbitration. Such a scheme would most likely, according to Kingston, cover about one third of all infringement cases.

Time required to make IP strategies work

The time to make an IP strategy work constitutes another important barrier. Again, this refers especially to patents, and relates on one hand to the complexity of the patenting process (especially, if protection is sought on a global scale) (Kitching & Blackburn, 2003) and, on the other hand, to the time it takes till patents are granted. Due to the increase in the number of patent applicants, considerable backlogs exist at practically all patent offices. For the EPO, for example, the yearly amount of patent filings has increased by 50 % over the past decade, while productivity increased only by 30 % (Abbott, 2006). In principal, the EPO takes the approach of giving examinations more time in order to guarantee high-quality standards for the granted patents. In light of the "avalanche" of applications, however, this puts considerable strain on the examiners and triggered, for example, a strike at the EPO offices in Munich in early 2006. In addition, the high quality approach can be considered to be at least partly responsible for the cost differences between Europe, the USA and Japan described above. On the other hand, high quality patents imply fewer court and infringement cases.

Perceived and real unfair granting practices

Anecdotal evidence suggests that SMEs believe that patent examiners grant patents to large enterprises more easily than to SMEs, based on the higher reputation of larger companies and/or out of fear of their lobbying power. In response, large enterprises emphasize their more professional handling of patents and IPR. The extent to which such claims and counter-claims are true is of course subject to debate, as the results of Kingston (Kingston, 2000) have shown.

Limited awareness of IPR issues and limited know-how within the enterprise

It has also been said that general awareness of IPR issues is, on average, low by most SMEs (De Marinis, 2002; Blackburn, 2003) – prompting publicly funded support services in this area. A Roland Berger study of the 1990s, for example, came to the conclusion that there is a major information deficit among SMEs on the patent system which is not sufficiently addressed by government policies (EPO, 1994 cited in WIPO, 2003a). Along the same line, a study by the General Accounting Office (GAO) of the United States of America (US-GAO, 2003) suggests that limited knowledge among small firms about foreign patent laws and systems

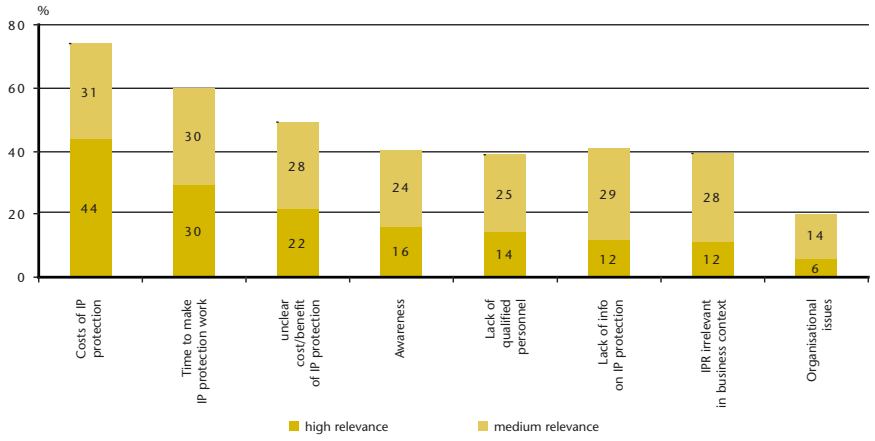
– together with high costs and limited resources – may constitute major barriers for patenting abroad. A recent study by Pitkethly showed similar results (see also section 5.4.1) (Pitkethly, 2007).

Graph 4 shows the barriers to using IPR, as they are seen by the users questioned in the scope of this study. While there is a bias present with these SMEs (given that they actually make use of IPR support services, in contrast to other small and medium-sized companies which may not be even aware that such services exist), some points are interesting to note. First, in line with other study findings, costs and time issues are thought to be the major obstacle for a higher IPR usage. These aspects can be considered factors outside of the company. Inside factors are reported by the questioned SMEs to play, by comparison, a lesser but still not insignificant role in hindering the use of IPR. Only 16 % see lack of awareness of IPR to be a major barrier. Only 14 % see a lack of IPR expertise within the company to be a major barrier. Information on IP protection seems to be adequately available, with only 12 % seeing a lack of information as a major factor. Organisational issues are of even less concern.

These results may be interpreted in several ways: Inside factors actually may not play such an important role after all (if compared to outside issues), and policy should, as a consequence, only concentrate on lowering the costs of the IPR system and making it more time-efficient. This interpretation might be true either because internal issues are, in general, not a high priority problem as concerns IPR (in which case the other study findings would have to be questioned), or because the service providers did a good job in transferring IPR know-how to their customers.

There are several hints, though, suggesting why another scenario seems more plausible. First, SMEs rate the **overall cost/benefit ratio** to be, after the cost and time issues, the third largest barrier to using IPR. The implication is that the costs clearly outweigh the benefits. However, it could also point to a demand on the side of the SMEs for a better explanation of what the benefits of using IPR are, and if they are worth the costs. It is interesting to note in this regard that most respondents believed that the provision of information on "why and why not to patent" to constitute a much more important key factor for the quality of an IPR support service than the availability of material on "how to patent". Given that many service providers complained about the lack of available quality staff while the competence of staff was rated to be the most important quality factor for a service, and also given that the skills required for an ideal IPR expert involve technical, legal AND business know-how, it is hardly conceivable that the majority of SMEs can marshal such staff in sufficient quality and quantity.

Graph 4 Perceived barriers for using IPR, SME users of services which were selected as case studies for illustrating elements of good practice, in %



Source: User survey, n= 350

Care must be taken that statements and complaints by SMEs are **interpreted with caution**; indeed, it may be that SMEs may – on average – overestimate their know-how and resources. It could also be that the complaints about the high costs are exaggerated, and that awareness of IPR in general is lower than anticipated by the SMEs. It should also be recalled that the sample of SMEs providing the information is biased towards those who make use of IPR support services and, hence, are likely to have a greater awareness than those who do not. To put this in the right context, it might prove useful to analyse how IPR is treated in large companies.

3.5 IPR in large companies – The case for a strategic approach to IPR

IPR in large companies is hard to analyse in detail because it is generally viewed as proprietary and confidential, involving as it does the core know-how of a company. As a matter of fact, anecdotal evidence suggests that public statements on the IPR policy of a company may also include, at least in part, misleading information, in order not to give potential competitors hints about what the company is doing. However, some general characteristics of how large companies treat IPR, and lessons small firms can learn from their large counterparts, can still be derived from various studies and presentations.

First, one has to notice that large enterprises seem to be faced with very much the same challenges as SMEs. Costs are a considerable factor, and court trials are also mostly seen as a measure of last resort (Matthews et al., 2003). Notwithstanding the different extent to which SMEs and large scale enterprises (LSEs) are actually subjected to the cost issue, one might still wonder why companies of all sizes engage in IPR protection at all.

The answer to this question is certainly not straight-forward, and calls for a more detailed analysis regarding the benefits of using IPR. Traditionally, and as stated before, IPR is used as means of protection. However, with growing importance of IP in general, the usage areas of IPR have become much more manifold:

- **Protecting against copying:** IPR may be used in the traditional way as an insurance premium to protect against imitation and copying.
- **Scaring potential competitors off:** IPR is also used in order to signal competitors that they have to expect trouble if they try to enter a market with products similar to the ones protected by patent.
- **Creating reputation:** IPR could be also used to underline the competence and innovativeness of a firm. This is especially important for two areas: First, for securing financial funds. Second, for marketing in general. Using IPR for securing financial funds may be highly relevant for SMEs, too, especially for start-ups. For the latter, patents may help in negotiations to secure venture capital funds for a project that would otherwise be treated as non-existent.
- **Forcing to design around**: Firms which try to enter a market dominated by a patent-protect product may need to design around, which is mostly coupled with a number of disadvantages (higher development costs, less usability, loss of time, etc.).
- **Generating income**: Patents may be used to directly generate income. This is done by using licensing agreements. Under such an agreement, the licensee obtains the right to use the patent against payment of a royalty to the patent holder/licenser.
- **Creating freedom to operate**: As court procedures are costly and lengthy, two firms might agree to use each other's IPR for free and refrain from litigating for individual patent "infringements". Such mutual licensing agreements are denoted by the term cross-licensing.

- **Facilitating R&D collaboration**: IPR may be used to provide the framework of working relations between companies engaging in mutual R&D projects; IPR might thus help to overcome concerns on losing company know-how to the research partners.

All in all, it becomes clear that a range of benefits or opportunities are available by using IPR, only one of which is insurance against unlawful copying. On the other hand, there are also challenges present which result from the barriers described above. These challenges indicate the risks of IPR: providing blueprints of an invention to competitors; the inability to protect against infringement; losing the freedom to operate by being patented out of the market; sunk costs because of IPR of no commercial value or unsustainable costs for litigating and/or maintaining IPR. Last but not least, there are a number of IP protection instruments to chose from – each with its own benefits and risks. And there is always the option of doing nothing, which could be more useful than doing the wrong thing under specific circumstances.

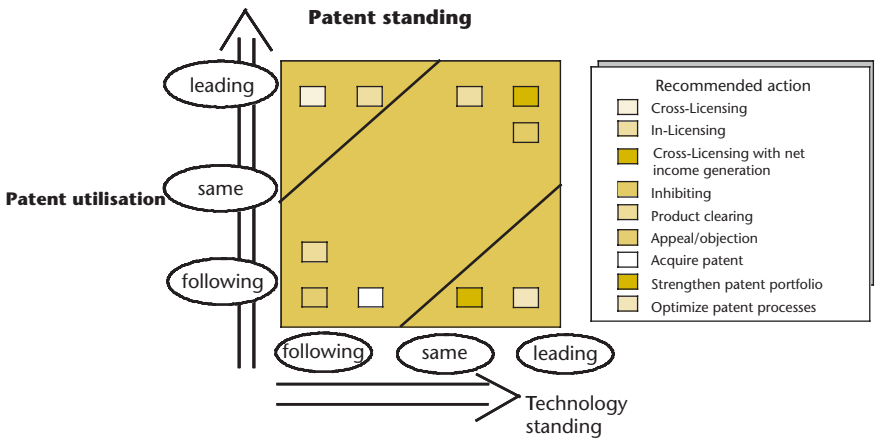
To manage all the challenges and risks, many large companies have developed IP strategies which basically serve three goals (Peham, 2006):

1. To **create a patent and IP portfolio**, where the cost/benefit ratio is maximised. Such a portfolio (sometimes also called a patent pool) serves to secure the firm's own development and market activities, creates freedom to operate and generates additional income (as opposed to the classical method of producing and selling products to end users only).
2. To **identify potentially harmful IPR** owned by competitors and be able to react to this early on.
3. To use **IPR as a source of technological information** (e.g., by monitoring patent databases).

Such a strategy provides the basis for taken action, for example, regarding the usage of certain IP protection instruments. The extent to which IP protection instruments are employed depends on many factors: The technological standing of the company regarding certain products and, the strength of the patent and IPR portfolio are two examples. The matrix shown below in Graph 5 is, for example, used by SIEMENS as decision guidance.

The findings of Matthews, Pickering and Kirkland suggest that integrating the IPR strategy into wider management considerations in a coherent and structured manner may be viewed as a prerequisite for successful implementation (Matthews et al., 2003). The collaboration of researchers, patent managers and attorneys, lawyers, and commercial managers is thus by-and-large considered to be crucial.

Graph 5 Matrix for the usage of different IP protection methods, depending on market position/standing



Source: Peham, 2006

The first step to ensure that IP management is integrated into day-to-day business operations is generally to write down and codify the IPR strategy in a respective document. This document explains what procedures are to be followed when important aspects concerning the IP of the firm arise and/or sets out responsibilities for different IPR-related tasks. For the latter, many companies have set up dedicated IP departments. Some of them were former patent departments, and the name change alone indicates the higher significance of focussing on IP protection instruments as a whole rather than only on patents. Though the organisational embedding and the level of autonomy assigned to these departments vary greatly, it is on average acknowledged that clear lines of responsibility are needed.

Following the establishment of an adequate IPR supporting structure, the challenge is to raise awareness on IPR matters throughout the company. To this end, company-internal trainings are the primary instrument of choice – distributing the IPR strategy documents alone may not be sufficient as the documents may end up as "*…weighty volumes…used…as door stops*" (Matthews et al, 2003: 46). In day-to-day business operations, it is eventually important to "think IP" and act accordingly. This entails a process of continual learning, revision and refinement, based on company-internal observations and also on intelligence concerning the activities of competitors.

The income-generating function revisited – The significance of business models

The **income generating function of IPR** is, in addition to the marketing/reputation creating functions of IPR, worth a more detailed look in the IPR management context, as it may have consequences for the whole organisation of a business. Such changes in corporate organisational structures can be especially observed in the manufacturing industries of the ICT sector.

The **ICT manufacturing industries** are nowadays characterised by very short product life cycles, very low production costs and low profit margins. At the same time, however, there is also high pressure regarding the development of new innovations, which is in turn mostly associated with high R&D costs. Many products are made up of a variety of technologies, whereby each of the technologies may be protected by their own range of patents.

A key factor in the context of IPR: open innovation

Traditionally operating companies may not be flexible enough to cope with the challenges presented by such a business environment.[8] A possible, and widely chosen, alternative way to tackle this issue is to open up the R&D departments and enter in joint-venture agreements with other companies (mostly other large competitors, but also SMEs) in order to share development costs (Elevald, 2007). This is often done on a per-innovation or per-technology basis, and the nature of such agreements entails a range of different forms of co-operation – sometimes loose R&D cooperation agreements, sometimes membership in an alliance (e.g., the alliance on a particular DVD format), but often also separate legal bodies ("joint" spin-offs). As a result of this open innovation approach, the rigid one-company/one R&D department model tends to break down into a conglomerate of larger firms and SMEs, characterised by mutual trade interests and complicated mutual ownership structures involving also competitors.

In this environment, revenue is only to a small extent created by having end-users pay a margin on top of development and production costs. Instead, the primary source of income is derived from licensing to other producers who sell the end-product under different brands to consumers. The inherent risk of litigation resulting from patent infringements (considering, as stated before, that many ICT products employ technologies protected by many different patents) is reduced by

[8] Traditionally operating companies would in this context denote companies with a single large R&D department which works only for the firm it is part of, which develops the innovations, has them patented, and hands them over to production and marketing, from where they are sold with a profit margin to end-users.

entering into cross-licensing agreements. Under such agreements, large firms and the conglomerate of joint-ventures and spin-outs under their control value each others IP portfolio and agree to use each others IP. To the extent that they are of equal value, use will be at no cost; if they are of unequal value, the firm owning the lower-valued IP pool will compensate the other firms. In addition, all parties agree to refrain from pressing charges for individual patents (or other IP titles) which are part of the portfolios.

IPR thus plays a crucial role for making open innovation constructions work in a business context. In fact, the usage of IPR may be considered to provide the basis for new forms of business models. Again, the choice of a firm regarding the extent to which it enters R&D collaborations is a strategic one, and will depend on the strengths and weaknesses of its technology and IP portfolio. Sometimes it may be better to license technology from someone else; sometimes it may be better to develop ones own and try to keep key knowledge secret; sometimes it is better to revert to defensive publishing (for this purpose, for example, some large firms such as SIEMENS publish their own journals – see also section 3.2.2); other times it may be the best choice to create a spin-out company together with a competitor. The key rationale behind such decisions is, however, always the same: To maximise revenue by designing a workable business model using different forms of IPR and IP protection methods as building blocks whereby the individual position of the company in the market is taken into account.

3.6 Lessons learned for SMEs: IPR Management and business models matter

The preceding analysis has shown several things: First, LSEs pretty much face the same problems concerning the costs of the IPR system (though these cost constitutes a lesser burden); they, too, fear litigation. Secondly, those companies have to be well aware of their own IPR (and that of their competitors) and chose their IPR actions carefully, depending on the company's situation. Making the IPR strategy a known and a lived practice throughout the company is seen as a challenge.

The situation for SMEs seems to be not that different: SMEs find themselves also in diverse market positions (depending on their technology and IP standing) and have to react to it accordingly (though the reaction and IPR strategy might look different, due to the different resources at disposal (e.g., with respect to collaborative R&D projects with large companies SMEs might find themselves pressed more to have a strong IPR protection before they enter negotiations)). While practically most of the study evidence points to a market failure regarding the IPR system and its usage by SMEs primarily due to its high costs (especially in Europe), it seems also clear – after a more thorough analysis – that the situation is far more complex. It may well be, for example, that a SME finds itself – IPR-wise and despite the cost barrier – in a much better position than many large companies, if it cleverly makes use of the IPR and informal IP protection tools available. In the most extreme case, SMEs can adopt a business model where they solely rely on acquiring foreign IPR (without investing in R&D themselves) only to afterwards threaten potential infringers that they will press charges. In many such cases, the dispute will be settled out of court and the suing company (the so-called "patent troll"; see also text box below) will obtain royalties.

The patent troll as an SME-affine example of new IPR-related business models

The term "patent troll" basically describes a patent owner, often a SME, that enforces patent rights against accused infringers, but does not actually produce or supply services based on the patents in question. Though definitions of the terms vary, a key constituting factor seems to be especially that the trolls are in a position to negotiate licensing fees which are grossly out of alignment with their contribution to the alleged infringer's product or service.

Being a patent troll is actually not unlawful as such. Proponents of patent trolls underline that such companies increase the liquidity of IP by providing a ready market for patents which the respective inventors cannot exploit or commercialize. Furthermore, patent trolls are said to facilitate legal access to IP by pooling (licensing, aggregating) patents governing a certain technology from different origins/inventors. Finally, a positive influence on innovation is ascertained as the troll's activities are said to provide incentives for the making, and public disclosure, of new inventions.

By contrast, critics point to the increased costs for manufacturers that need to be taken account of as a precautionary measure, due to the possibility of having to pay royalties for IP not owned. They also point to higher costs for product developers, because patent databases have to be monitored more closely. All in all, patent troll SMEs can be highly successful on their own and even important because of market-functioning considerations, but they are in turn also a potential threat to other companies – be it SMEs or large enterprises.

The implications for SMEs seem to be threefold:

- **SMEs should be at the last aware of the IPR system.** Even if they don't use formal IPR, it is still advisable that they monitor the IPR environment of the business regularly. This is especially true for SMEs operating in High-Tech sectors, but even for industries where patents do not yet play a role it could prove helpful to stay alert – given the tendency that the borders between traditional industries get increasingly blurred and the tendency that over time more and more types of innovations tend to become subject to some type of IPR regime.
- **SMEs should adopt a strategy on IPR and integrate it into overall (innovation) management.** SMEs should be, as a pre-requisite, able to assess the value of their IP. This would imply that they also are able to consider how to put IP to its best use. The key issue with an IPR strategy is that it may not (only) be a protection strategy, but it can also constitute a new way of doing business.
- **There should be by no means a predisposition towards patenting**. Patenting is only one of the tools available for using IP (rather than only protecting IP), and informal tools, such as trade secrets or defensive publishing have a rightful place within the current IPR framework. Patents may be the primary choice on many or perhaps even most occasions – but to patent without proper risk assessment and with no means to litigate could prove disastrous. Similarly, patenting without a proper well-defined goal could lead to money being wasted.

4 The policy agenda for SMEs – Issues to be addressed in the study and beyond

4.1 Lessons learned for policy makers

In section three it was shown that successfully coping with IP and IPR is considered to be a critical factor for a number of industries, and of increasing importance for many of the rest. It was also shown that a company, be it an SME or a large enterprise, has to be fully aware of IP and IPR issues surrounding its business. It should ideally implement a rather broad IP and IPR strategy, embedded into overall innovation and business management. Given the many functions the IPR system offers today, the rationale behind formulating an IPR strategy should be maximising profits, rather than only protecting IP. This seems to interlock firmly with relatively new IPR-based business models and might imply a change of mindsets and cultures regarding the use of IPR by SMEs: It is not the IPR itself that actually counts, but the strategy and business model behind its usage. For policy makers acting in the current IPR framework, this has a number of important implications:

- There is **no undisputed positive relationship between the number of times an IP protection method (or an IPR tool) is used and the innovation performance**, or even further, the business performance of enterprises. As filing patents might prove to be useful as well as harmful to a company, policy makers should refrain from using patent statistics as a "true" measure of innovation performance and keep the limitations described in various studies in mind.
- The **critical success factor is the employment of an optimal and qualified mix of different IP protection tools**. Awareness and know-how regarding the usage of all IP protection methods are thus pre-requisites, and the availability of such knowledge to all relevant players and stakeholders, including SMEs, support service providers, and others, should be a goal. This notion of awareness is somewhat different from awareness of the basic functions and procedures surrounding patents. It covers not only technical and legal know-how (i.e., knowledge on "how to patent") but also business know-how ("why to patent") (see also section 5.4.1).
- Depending on the business model employed, **company size** is not necessarily a primary enabling / inhibiting factor for using IPR. Examples can be found of large enterprises which manage IPR badly, and examples can also be found of SMEs which cope well with IPR. The existence of both examples supports a more differentiated view of the barriers analysed as they concern the usage and non-usage of IPR by SMEs.
- At the same time, the possibility cannot be ignored that the **barriers identified in these studies point to a market failure of the IPR system regarding SMEs**. This would necessitate policy intervention. Of all the barriers identified, it is especially the costs and the related litigation issues which are striking. Given the higher costs of patents in Europe (as compared to the US and Japan), measures to reduce the costs (e.g., by using subsidies or by changing the IPR framework) seem justifiable. However, in light of the other aspects described above, it is questionable whether subsidies alone will be able to improve significantly SMEs' usage of IPR. Care is needed in the design of a service offering financial support for the filing of patents.

4.2 Policy options with regard to SMEs

To better understand the overall policy environment it is thus important to go beyond the field of IPR related policy and include also the area of innovation support, higher education and research policy. Interestingly, a number of parallels between these policy fields can be revealed which creates opportunities for synergies. Table 3 lists the policy options available to policy makers in the field of IPR to boost IPR usage performance by SMEs. However, a closer look reveals that most of these policy options are generic in nature and cover a wider range of issues to support innovations created by small firms.

It should be noted, though, that synergy fields are also likely to be potential fields of conflict – from an institutional point of view, for example, attempts by two different organisations to integrate their respective overlapping service portfolios into one single portfolio might entail competition between those parts of the organisations which have similar service offerings. As a matter of fact, the competition or conflict mode may be rather the exception than the rule. Mostly, the relations between the institutions providing the respective services (IPR-related vs. innovation-related) have demonstrated mutual isolation, but, increasingly, collaboration is emerging between them, based on division of labour. In some cases, the respective institutions have broadened their portfolios by integrating additional services or service components. In the best case, this enlargement / integration is used to increase the awareness of IPR issues on the side of the innovation agency and vice versa, and serve as a basis for institutional collaboration.

Table 3 summarises a range of evidence collected from numerous evaluations of government programmes and measures. It has its focus on the organisational aspect of institutions, particularly when addressing aspects such as "need / market failure" and "justification" as the input into the policy process, "strengths", and "limitations" as those variables that determine the profile and performance of the services eventually delivered.

Furthermore, from an institutional perceptive, the manifold aspects of providing IPR support services to SMEs, as indicated in Table 3, give rise to the question of **collaboration as well as conflicts** and **blind spots**. While conflicts mainly reduce efficiency, the existence of blind spots leads to a more serious consequence, namely of **missed opportunities**. Thus, in the search for principles of good practice, (i) the architecture of institutional relationships and (ii) related issues of good governance are the most critical issues to consider. Accordingly, the dimensions listed below are to be analysed:

Context

This set of factors describes the overall institutional division of labour including the mutual relationships between the involved institutions. The latter can take several forms:

- **Governmental institutions** (mainly ministries), taking over the roles of principals vis-à-vis RTDI agencies, patent offices etc. Under very general conditions, these principals typically move into the notorious asymmetry between the principal and the agent. While the former relies on its formal power, the latter derives its power by the accumulated knowledge and information as well as the built-up networks and relationships. Accordingly, the balance between the principal and the agents is an omnipresent issue in terms of the quality of governance and the origin of synergies, conflicts, and blind spots.
- **National patent offices**. They exhibit by far the longest tradition. Large parts of their self-perception are determined by their monopolistic position as a sovereign authority. During the last decade many of the national patent offices changed their position and role into a service-oriented organisation. As

Table 3 Characteristics of policy areas with relevance to IPR services

Policy area	Need / market failure	Justification	Strengths	Limitations
(Pro-active) awareness raising activities and public relations	This service type actively addresses and/or contacts SMEs and promotes the usage of the IPR system. Services of this type are usually road shows, open days, exhibitions, etc.	Systematic under-investment of SMEs in innovation and exploitation of intellectual assets support increasing the share / number of firms recognising the role of IPR.	Ease of set-up, can be combined with other innovation related or follow-up activities.	Often biased towards administrative aspects of filing (formal) IPR
(Passive) information provision services	These services provide information on a stand-by basis for interested SMEs, such as through patent information centres and search services in databases.	Patent searches are (i) highly specialised and (ii) seldom performed; thus they are not part of standard business routines of SMEs– resulting in a classical market failure.	Patent offices and attorneys use patent information for fulfilling their core business. They are thus the natural candidates for providing the services as they can provide them at marginal costs.	Often a too-strong (built-in) focus on formal IPR; and little attention to the strategic dimensions of IPR and their roles in general innovation management.
Training	This category subsumes all educational activities in IPR matters where SMEs are the main beneficiary. Both sides, SMEs and service providers are target groups for training measures.	Increased awareness and know-how are considered key to better exploitation of intellectual assets.	Proper training can increase the *absorptive capacity* of firms both for better exploitation of intellectual assets and for the utilisation of other IPR related services. IPR training can be linked to other training needs.	There are several limitations: (i) training can degenerate to another means of marketing existing services, (ii) there may be a too narrow focus on patents and the respective procedures, (iii) service providers' staff may itself have deficiencies due to limited training opportunities (iv) the quality of the material taught is highly significant for the success, which calls ex-ante for a proper review of the necessary contents and an assessment of the quality of the contents delivered by the providers acting in the field now
Customized in-depth consulting and advisory points/ services	Services in this category go much more into the details of IP and IP protection and offer customized support to SMEs. This category often coincides with innovation related services whose broader scope implies an approach individually tailored to the needs of particular SMEs.	Two main justifications: (i) market failure resulting from a poor understanding/ valuing of the intellectual assets of a firm from a strategic perspective, (ii) policy failure resulting from a too narrow definition of IPR issues and respective support services.	Properly designed, it enhances the intellectual assets of the firm in a broad sense. At the same time service-providing institutions can operate on a broader field to assist SMEs.	Customized in-depth consulting requires a profound competence of consultants. Their short supply has proven a serious bottleneck, and more is needed to attract high profile staff.
Financial assistance & legal framework	This category includes service offerings in the field of financial subsidies for the registration of patents and/or in the domain of tax provisions from which SMEs can benefit and which are established in the national legal frameworks.	High entry costs, particularly for patents, act as barriers to the registration of patents. Financial subsidies for patenting are in the tradition of financial subsidies for R&D and innovation.	Ease of set-up, can be combined with other innovation related services such as general innovation / R&D subsidies.	Again, (direct or indirect) financial assistance emphasises formal IPR protection regimes rather than a strategic, comprehensive approach towards exploitation of intellectual assets.
RTDI support	Most industrialised countries have established a wide range of RTDI support services. Typically, the respective services are provided by specialised agencies. In most countries, there is more than one agency at the national level, plus those at the regional level.	Historically, two rationales have supported the establishment of *integrated* innovation agencies: the increased adoption of (i) the ‚systems of innovation' concept, (ii) principles of new public management in the field of RTDI support. Notwithstanding this, financial support still dominates the portfolio of services at the cost of regulation / standardisation, education and training and intellectual assets / properties.	RTDI agencies are typically well established, visible, enjoy high attention and are powerful (in the long run they absorb the power of their principals, the ministries),	Paradoxically, most of the merits of RTDI agencies serve at the same time as potential disadvantages, as they exhibit a certain 'institutional arrogance', due to their dominance in providing financial support. They may exhibit blind spots in the provision of services which are not primarily aimed at funding but rather at building awareness or providing counselling. Accordingly, collaboration between the world of general RTDI support and that of exploitation of intellectual properties are needed to overcome the phenomenon of "institutional lock-in".

a consequence, they included additional services and functions into their traditional portfolio. Two of the most challenging aspects in this transformation are (i) their openness to IPR protection and exploitation beyond formal methods, and (ii) their co-ordination and collaboration with other institutions, particularly with RTDI agencies.

- **(National) RDI agencies, regional development agencies**. In terms of reach and scope (and size), they are the winners during the last 10 to 20 years of RTDI policy development. In most industrialised countries, they act as the central 'market places' for delivering a wide range of research and innovation related services. Accordingly, they have very much contributed to and benefited from the above mentioned principal-agent-asymmetry. Interestingly, it is rather the rule than the exception that the relationship between the world of IPR and general innovation support is rather weak – probably fostered by the monopoly of patent offices.
- **The private sector**. The most relevant group in the private sector are patent attorneys, patent information firms and business consultants. They typically act as brokers or domain specialists, providing in-depth consultancy, mainly on legal, technical, and management matters. Due to their private status, their portfolio of services is rather selective, insofar as they cannot afford those services which are often publicly supported, such as awareness or training schemes. A quite recent type of private-sector actor is the so-called patent troll, which combines all three qualifications (legal, technical and business), typically acting as a small company that enforces patent rights against accused infringers, but does not manufacture products or supply services based on the patents in question.

Internal organisation, portfolio of services, practices

During the last two decades, most if not all innovation related policy institutions have been inspired by the concept of "systems of innovation", based on the assumption that the performance of a given institution is mostly determined by the overall system architecture and its position within the institutional landscape. Notwithstanding this, there is a quite plausible assumption that the internal characteristics of institutions are dominant over the scope of services and the performance of their delivery. Accordingly, the internal (hierarchical) structure of the respective institutions, their strategies, their practices, the composition of their services, and not the least their key staff outweigh the influence of the role of their position in the institutional system.

As regards the internal division of labour, it is decisive, whether the institutions (particularly patent offices and RTDI agencies) are organised either according (i) to **instruments or related (classes of) services**, emphasising the homogeneity of provision or (ii) based on specific **target groups**, emphasising the homogeneity of utilisation. Obviously, the orientation toward target groups provides better pre-conditions to adopt new or existing IPR related services or to co-operate with third parties rather than the division of labour based on instruments or services.

Furthermore, the portfolio of the services provided by an institution determines the readiness to adopt new services. As regards RTDI agencies, there is a strong indication of a broadening of the portfolio. Not unlike RTDI agencies, patent offices also tend to enlarge their portfolio, however by differentiating their existing services (awareness campaigns, training, pro-active support).

Finally, the quality of practices, employed in the respective agencies, shape the ways in which new services are adopted, implemented, and provided: Need assessment, monitoring, quality assurance, and evaluation are the most relevant dimensions as regards the professionalisation of services. As regards policy culture – particularly policy planning, monitoring and evaluation, RTDI agencies are generally more advanced as compared to the traditional patent offices. The difference has to do with the more dynamic environment and a higher level of

competition of the RTDI agencies, and the monopolistic status of the patent offices.

History

History matters in many regards. The most relevant factor is without doubt the existence of predecessor services, because these, by nature, create earmarked budgets, formal responsibilities and job descriptions, structures, and a clientele of stakeholders. Often, this leads into **lock-in situations**, where future directions and decisions are to a large extent determined by past directions and decisions, and thus history affects the perception of new opportunities and needs.

Paradoxically, we can assume that internal organisation and thus (past) division of labour generally determine the adoption of new services and the adaptation of existing services to a higher degree than "rational" reasoning.

People & staff

While there is little evidence for the idea of history as the "story of great men", there is plenty of evidence on the decisive role of experienced staff for the scope and quality of the services, irrespective of the service under consideration. Moreover, as the task of IPR is concerned, three interconnected areas of knowledge and experience are critical: technology / domain knowledge, management – particularly of intangible assets, and legal affairs. Given a number of restrictions in the public sector regarding income, career opportunities, and job advancement, there are, obviously, specific restrictions in the recruitment and development of highly qualified staff. As a consequence, the 'job environment' – thus the location within the overall institution – tends to be a critical factor in the performance of the respective services.

As regards to the general availability of staff, the existence of so-called *patent trolls* indicates the general possibility of teaming up these distinct competencies, provided there is the expectation of job satisfaction (the motivating factor) and future income (the hygiene factor).

Selecting the right institutions, content and business models

Putting all determinants together – the well-known slogan of "putting the right people at the right place" – sheds light on the whole issue of organising the provision of innovation support services.

One major aspect is the **identification and selection of the right institutions**, taking into account the dominating role of past practice and experience and thus the scope and content of the new or adapted IPR support service. Clearly, a broader and more integrated approach is more supportive than the provision of services addressing only specific aspects of the world of IPR.

The other major aspect is **access to and recruiting of experienced staff**. Experienced staff can compensate for the disadvantage of services located at the periphery of the providing institution or provided through collaborative activities.

As a matter of fact, the a priori definition and specification of IPR is critical for the specification of needs, its translation into service specification, selection of the proper place in the universe of institutions and, not the least, selection and recruiting of proper staff. Traditionally, IPR support services are aiming at the procedural aspects of registering patents and thus of "how to patent"[9]. More advanced IPR support services (should) address the issue of "why and if to patent" and "how to exploit intellectual assets" rather than to protect them. Accordingly, the (implicit) "**business model**" strongly determines what is considered as priority, the completeness of service characteristics, and expected outcomes and impacts.

[9] The implicit policy behind the "how to patent" approach is often "more patenting". We hesitate to follow these arguments, as we observe a misuse of counting of patents as an indicator of technological advancement or competitiveness of firms, regions, and of nations, which, at the end, is doing a disservice to the issue of the role of intellectual properties.

Understanding actual practices should thus be at the beginning and at the end of understanding and investigating the (implicit) "**business models**" of the involved stakeholders.

Policy delivery and the role of geography, collaboration as an opportunity to bridge spatial distance

Policy delivery and the role of location factors has become a critical issue in the past decade. Paradoxically, with the unprecedented diffusion of internet-based information and related services, the increase of the **regional** dimension of RTDI policy is one of the most striking features of the last 10 to 15 years.

As regards IPR support to SMEs a number of issues emerge that are relevant in the identification of good practice in supporting SMEs in IRP affairs. The most prominent one is a certain **loss of terrain of National Patent Offices** to the benefit of European patents. This change has triggered a re-thinking of their roles and, as a consequence, the launch of specific, more customer-oriented services at the level of NPOs. At the same time, **regional development agencies** bloomed to an extent which might be questioned, taking hundreds of 'helping hands' for a population of one million inhabitants rather as the rule than the exception.

Finally, the question of **collaboration amongst specialised institutions** arises. There is quite some evidence that NPOs act as a source of specialised knowledge which can be fed into the broader portfolio of services of RTDI and/or regional development agencies. Here we find favourable opportunities for feeding in and blending a broad range of specialists and specialised services in the field of general business management and related support, and knowledge management with a focus on IPR, provided either by public institutions or private firms, including patent attorneys.

Public vs. private: The role of patent attorneys, the crowding out issue

Although there is some evidence that the provision of public innovation support services has threatened to crowd out private services, particularly those of private consultants, the overall picture is to the contrary. It is rather characterised by **missed opportunities and blind spots**. They presumably result from a too-narrow definition and perception of IPR with a too-strong focus on **rights** rather than on **properties**. Even more, only a minority of services address the question of "why patenting". Rather, they help guide the struggle through the alleged administrative jungle.

Another aspect, which again results from the narrow definition of IPR, is the **missed opportunities from non-collaboration**. It can be seen later in the study that, in search for good practice, the overwhelming majority of identified good practices are provided in collaboration, blending the specialities of distinct institutions.

5 Towards Good Practices – The real world of IPR support services

5.1 What's out there for SMEs: Evidence-based policy

The last two chapters have built the framework of issues to be considered for setting up an adequate support structure for SMEs in the field of IPR. This framework describes the challenges for the design of support structures and ways that policy can deal with them. The following section provides a practical assessment of how policy addresses the subject of IPR in connection with SMEs.

The analysis focuses less on IPR policy at a strategic level, and more on the **actual support services given as it is perceivable by SMEs**. Furthermore, the IPR system is taken as it is – the analysis does not, for example, cover a discussion of the ideal design, such as whether and how a community patent should be implemented or whether software patents are necessary. The scrutiny is thus completely evidence-based and focussed on the support service level.

As a first step with respect to the benchmarking of regional and national support services in the field of intellectual and industrial property, an inventory of support services (together with some key data) in the field of IPR was created and the respective data entered into a database. Support services in this context were considered to be services which *"...assist enterprises or entrepreneurs to successfully develop their business activity and to respond effectively to the challenges of their business, social and physical environment"* (European Commission, 2001). These services had to be IPR-related, according to the definition of IPR provided by the WIPO (WIPO, 2003a; 2004).

In order to be eligible for analysis, IPR services had to fulfil the following criteria:

1. Services had to be **publicly funded**. Privately offered services were thus only eligible, if they are at least partly funded by public authorities and if they act in line with public policy.
2. The services had to **target SMEs** – either explicitly or implicitly, as evidenced, for example, by a significant share of SME users.
3. The service had to target as a whole or in analysable parts **IPR issues.**
4. Concerning the degree of legal formality of the IPR instruments covered, it was attempted to keep the approach more open and also to include to some extent services that tackle less formal methods of protecting the intellectual assets of a company, such as unregistrable IPR (e.g., copyrights) or informal protection methods (e.g., trade secrets), for example. This step was taken against the backdrop of the findings presented in the previous chapters. However, a provision was laid down that preference should be given to **services targeting registrable IPR (especially patents)** in the identification process, and that only in case that no sufficient number of services could be identified, should other services be included in the delivery.
5. Only services offered at the **national or regional** level were eligible for inclusion – services offered by European governmental bodies and/or at the EU level (e.g., the IPR Helpdesk) were thus excluded, unless they were outstandingly important in the context of the national IPR service landscape (e.g., in some, especially smaller, countries the patent libraries).

By applying the inclusion criteria stated above, the research team was able to identify 279 support services in the field of IPR for SMEs, 224 of which were operated in Europe.[10] A further 55 services were identified overseas. Despite the thorough analysis and rigorous quality assurance mechanisms in place (i.e., the compiled list was cross-checked with IPR experts and validated by the Group of Senior Officials for Innovation from the European Commission), completeness of the list can not be guaranteed[11]. Table 4 provides a breakdown of the number of identified services by country.

One important observation concerning the identified services is that the **number of services varies greatly with countries**. The high variation is due to the fact

Table 4 Number of identified support services for SMEs in the field of IPR, by country

country	number of services
Australia	31
Austria	14
Belgium	3
Bulgaria	4
Canada	11
Cyprus	1
Czech Republic	10
Denmark	5
Estonia	5
Finland	10
France	6
Germany	17
Greece	5
Hungary	20
Ireland	4
Italy	8
Japan	8
Latvia	1
Liechtenstein	2
Lithuania	10
Luxembourg	4
Malta	1
Norway	3
Poland	23
Portugal	2
Romania	13
Slovakia	11
Slovenia	3
Spain	12
Sweden	7
The Netherlands	4
Turkey	3
United Kingdom	12
USA	6
TOTAL	**279**

Source: Austrian Institute for SME Research

[10] The number of services may deviate slightly from the number of services in the published electronic database, as the database was at the end of the study updated to e.g. include some new IPR services which were not operational at the time of the analysis.

[11] An important precondition for a service to be considered in the study arose from the willingness of the service provider to cooperate with the study team. Further on, it became evident during the progress of the research, that many countries were in the process of designing new services (especially services that tackle the issue of protecting intellectual property and dealing with counterfeiting in China), which had at the time of investigation not been operational. These services are thus mostly not part of the underlying investigation, due to the lack of a track record for the consecutive analysis.

that many services are offered as packages, with often one service consisting of several sub-services. The decision, whether such an integrated service was counted as one service or whether a portfolio of individual services was entered into the database depended on the scope of the individual sub-services, the way these services were marketed and the overall organisational context (e.g., the type of organisation offering the services).

Taken together, it should be noted that the number of services identified should not be taken as an absolute count, given that each research team involved has likely differently made the division between "packaged services" and "unpackaged-stand alone" offerings in individual cases. Moreover, it should be kept in mind that this is a dynamic field with services being created, merged, split and shut down constantly over time. Nonetheless, the resulting measure gives a fairly reliable order of magnitude estimate of the number of services available.

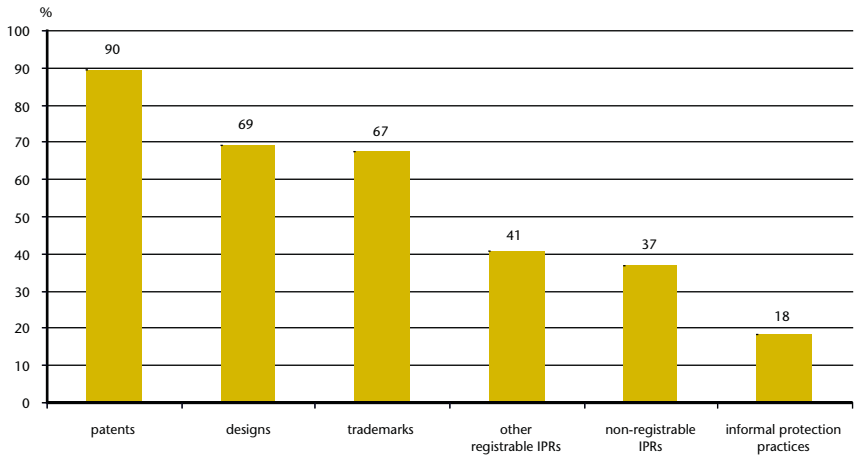
The majority of the services identified are targeted at registrable IPR. As Graph 6 indicates, 90 % of the services offer support regarding patents, 69 % concern registered designs, 67 % concern registered trade marks and 41 % offer support related to other registrable IP rights (e.g., utility models). The last two categories – non-registrable rights (37 %) and informal protection practices (18 %) – are much less prevalent.

These figures are not surprising given the patent focus of the research design. However, statements by research partners and experts in several countries suggest that these results would more or less hold even if the scope of the identification process would be widened and all available services offered in the field of unregistrable IPR and informal protection practices were included in the identification process.

The analysis of the support services also shows that 35% of the services were dedicated explicitly to SMEs. Most of the services (80 %) were offered nationwide and about 20 % were offered at a regional level.

Further more, as Graph 7 shows, the majority of the services identified (about 74 %) address the phase of development and registration of an IP protection instrument. The preceding phase (research on innovative projects and related IPR (e.g., prior art searches)) is supported by around half of the services; 37 % of the services deal with the acquisition of existing IPR; and 60 % with the actual usage and exploitation of IPR. The high focus of the services on registration issues is even more apparent if one looks at the actual service descriptions: In many cases, service

Graph 6 Degree of legal formality of IP protection methods covered by the services identified, percentage of services *)



*) Multiple counts allowed
Source: Austrian Institute for SME Research, n = 279

elements covering especially the later stages of IPR usage seem to be of less scope and significance in the overall service context than the parts dealing with registration and development. Many services target multiple phases of IPR usage at the same time.

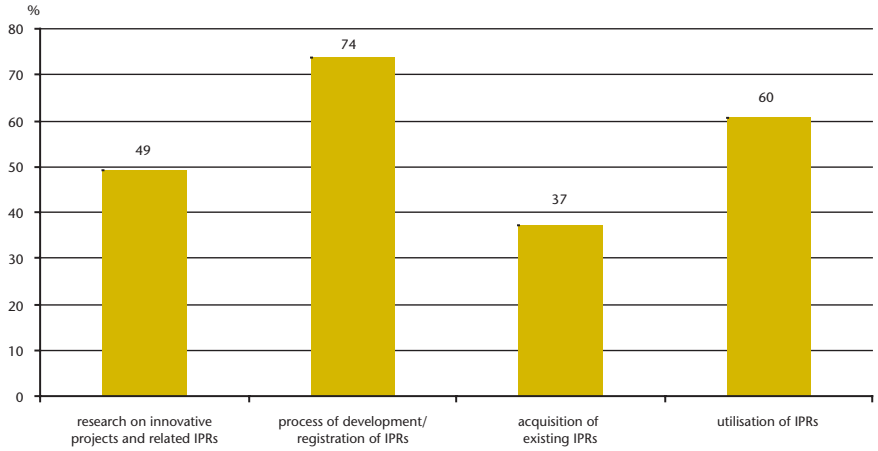
The fact that a rather large quantity of services come in the form of integrated packages causes severe multiple-counting problems when trying to classify these services. In principle, one could distinguish between **embedded services** (that is, IPR services that are part of a service portfolio where the portfolio itself is not targeted at the issue of IPR) and truly **integrated IPR services** (where several IPR services such as a subsidy, information material on IPR and training in IPR matters together form a larger IPR service portfolio). An example of an embedded service could be a thematic support programme in the field of biotechnology, where R&D projects are supported and a small service element deals with IPR consulting. Similarly, IPR advice offered in incubators and technology parks can be also seen as embedded services.

Several options exist on how to classify such services, including those pre-developed by the World Intellectual Property Institution (WIPO) and by the European Commission (see Table 5). Following an initial assessment by the research partners, and a review of the available information–especially the qualitative service descriptions –, it was decided to use the WIPO definition as a basis for classification and revise it slightly for the scope of the underlying study. The goal was to develop a classification system with a minimum amount of multiple counts, a comprehensive number of categories and with a labelling system which, on one hand, provides more information on the type of activities implemented by the services and, on the other hand, reflects the real world of service provision (in the sense of evidence-based policy analysis).

Thus, the classification system applied in the scope of the underlying study distinguishes between five different categories ("functional classification system"):

1. *(Pro-active) awareness raising activities and public relations:* This service type actively addresses and/or contacts SMEs and promotes the usage of the IPR system. Services of this type are usually road shows, open days, exhibitions, etc.
2. *(Passive) information provision services:* These services provide information on a stand-by basis for interested SMEs, such as patent information centres, search services in databases, etc.
3. *Training:* This category subsumes all educational activities in IPR matters where SMEs do benefit to a larger proportion.

Graph 7 Phase of IPR usage targeted, percentage of services *)



**) Multiple counts allowed*
Source: Austrian Institute for SME Research, n = 279

4. *Customized in-depth consulting and advisory points/services:* Services in this category go much more into the details of IP protection and offer customized support to SMEs. This category often coincides with integrated services whose broader scope implies an approach individually tailored to the needs of particular SMEs.
5. *Financial assistance & legal framework:* This category includes service offerings in the field of financial subsidies (mainly for the registration of patents) and/or in the domain of tax provisions SMEs can benefit from and which are laid down in the national legal frameworks.

This "functional" system has the advantage that it is quite specific on the instruments employed by the services and their functions/aims. By contrast, the WIPO definition tends to mix up instruments and phases of usage (for example, an "assistance for IP exploitation" service might also be in its very nature a "customized advisory service on IP"). The "functional" approach, being based on broad empirical observations in the course of this study, may also lead to slightly less double and multiple counts. And it provides a clear distinctive category for the financial and legal framework measures, as opposed to the rather heterogeneous information services, a feature suggested by the results of a cluster analysis performed on the identified services in the scope of the underlying study.

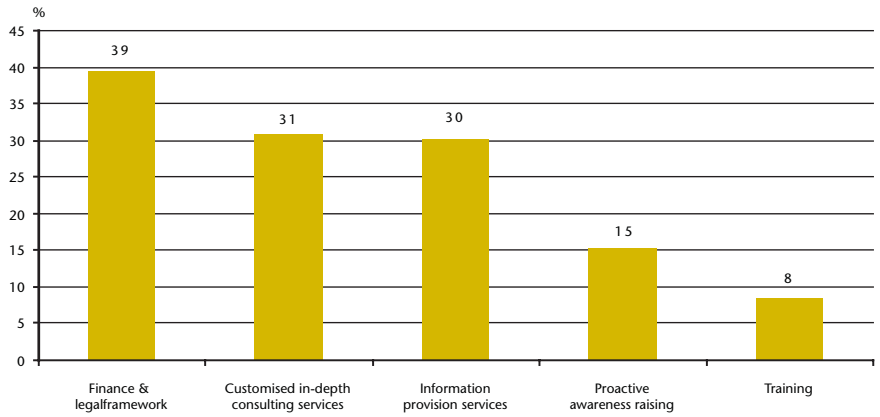
Graph 8 provides a frequency count of the identified services considered relevant for the following research steps[12] according to this functional evidence-based

Table 5 Pre-developed classification systems for IPR support services for SMEs

WIPO Classification	Classification according to the Commission Staff Working Paper
1. Awareness-raising and training on IP	1. Reception, facilities and basic information,referral
2. Technological information services	2. Professional information services
3. Financial assistance	3. Advice and direct support
4. Customized advisory services on IP	4. SME-specific training
5. Assistance for IP exploitation and technology transfer	5. Finance
	6. Premises
	7. SME-specific strategic measures

Sources: WIPO 2003a, 2004; European Commission 2001

Graph 8 Functional evidence-based classification, percentage of services



**) Multiple counts allowed, n =210*
Source: Austrian Institute for SME Research

[12] Only those services were included, for which there were sufficient indications that they may display elements of good practice with regard to the study goals (210 services).

classification system. By applying this categorisation, 39 % of the services are in the domain of finance and legal framework. 31 % are customized in-depth consulting services, and around 28 % are (passive) information provision services. Pro-active awareness-raising activities make up 15 % of the identified services. Surprisingly, training services account for only 9 % of the measures. This low share might indicate a lack of respective service offerings – which was in later research phases also corroborated by the experts interviewed.

Despite of the multiple count issues, the functional classification system aims to offer – together with the frequency count of Graph 8 – a comprehensive overview of the main activity areas of IPR support services for SMEs. It has to be remembered that this classification tries to be as evidence-based as possible, and as such it does not necessarily reflect all the policy options available. And, given the multiple count problem, one could still argue for slightly different classifications.

In fact, if policy makers would decide to increase the variety of services in certain activity fields, while decreasing the number in other fields, the classification system would have to be updated in order to better reflect the changed structure. Cases in point are, for example, the currently observable rise of support services which deal with counterfeiting issues in China (and a number of other emerging markets) and which offer support on-site. Sub services could very much form a class of their own in the future, if more of these are to be established. The same could also apply to fostered hypothetical IPR litigation insurance schemes, or equally hypothetical state-supported patent pools for SMEs.[13]

In the following benchmarking exercise and in the good practice analysis, due account of the classification system will be taken in order to allow for performance assessments in distinctive activity areas, without giving a preference to specific service types in advance. Some generic service types (which are subsumed under one of the five headings) will be, nonetheless, discussed separately as they have peculiarities which policy makers, who wish to set up similar services, would probably need to address.

5.2 Looking for gold: The benchmarking process

5.2.1 The selection process for the benchmarking phase

The 210 services classified according to the functional classification system served as a pool for the next phase of the research exercise, the benchmarking procedure. The aim of the benchmarking procedure was to measure the performance of the services in question and to single out candidates and principles of good practice. These 210 services were initially considered aspiring candidates which could make it into the next research phase. The final selection was then made by thoroughly scrutinising the available information and applying the following selection criteria:

1. *Clear- and soundness of the objectives of the service stated:* The service was to have clearly identifiable goals from which SMEs could benefit and which were sensible in the study context (e.g., they addressed an important IPR-related issue and were stated in such a way that they could be achieved).
2. *Clearness of the service design and service offerings:* The organisation and the modes of operation were to match the service goals, and, ideally, also hint at an effective and efficient mode of operation.
3. *Focus on registrable IP protection methods:* The services were to have a focus on registrable IPR. This requirement is in line the aim of the underlying study, but it also keeps track of the finding that most services focus on registrable IPR anyway.

[13] See the respective recommendations of Kingston, 2000 and Moulin & Thue, 2005.

4. *Level of innovation employed:* Services which employed new ways of pursuing certain goals were especially looked into, as respective experiences could provide valuable insight into promising novel ways of offering IPR support to SMEs.
5. *Take-up by SMEs and or other available performance measures:* In the selection process, considerable emphasis was placed on information concerning the actual performance of the service, as indicated, for example, by the SME take-up, available evaluation results, the reputation of the service, or any other available performance figures. Overall, the service was to have a proven track record.
6. *Country context:* This selection criterion was put in place in order to account for different stages of economic development (following the assumption that less developed countries might need different types of IPR support services than developed countries) and, similarly, to account for differences in country size.
7. *Policy context:* This criterion refers to the way the service interacts with other innovation support measures, institutions and services.

In total, 72 services were subjected to the benchmarking process. Of the 72 services, it was possible to obtain 66 workable questionnaires from the service providers.

5.2.2 Benchmarking criteria – dimensions along which the performance of services can be assessed on a comparative basis

In analysing a heterogeneous set of support services and determining whether one support service is doing better than another, it is necessary to ensure, on one hand, that the measures used allow for comparisons among all types of services analysed, and on the other hand that the measures also take into account service and context specific modes of action which contribute to the success of the service and are not immediately identifiable as such by an outside person. It is clear that no single performance indicator can fulfil these functions simultaneously.

Notwithstanding this, there are a number of requirements which have been repeatedly identified in research and literature and which a policy intervention (be it a policy itself, or a support service or programme derived from it) must meet in order to be considered successful (Friedewald et al., 2004): The policy intervention has to be *necessary* (there has to be a market failure which needs to be addressed) and *achievable* (which relates foremost to work done in the design phase of the intervention). It also has to be *manageable* (this relates to the ability to quickly respond to changes in the framework conditions of a service), *measurable* (one ought to know whether a service is currently performing well or not; hence, the necessity of a monitoring system), *connectable* (the measure must be able to reach out to key stakeholders and target groups and interact with them) and, eventually, it has to provide an *added value*. The latter aspect demands that a policy action/ support service should achieve something which would otherwise not have happened at all (pure additionality) or would have happened to a lesser extent (e. g., later in the future). A further requirement can be seen in the fact that experiences gathered should allow for *long-term learning.*

The so-called *policy cycle model* is, especially in Europe, a generally accepted way of tackling the requirements outlined above; it is believed (and there is plenty of evidence to this end) that policy interventions of all sorts which follow the cyclic model perform better than interventions which pursue other ways of achieving their goals. The model suggests that a policy intervention ideally distinguishes three phases, each accompanied by evaluations which assess how well the service is performing in that particular phase (Radauer & Zinöcker, 2006):

- In the *design phase*, amongst others, the need for the intervention and how this intervention should be designed is assessed, the goals are stated, the instruments with which to tackle the problem are considered, and the possible outcome is gauged.
- In the *implementation phase*, attention is paid to the daily operation of the service, such as can be seen in the amount of overheads involved, the lines of responsibility, the complexity of internal communication flows, the operation of available monitoring systems or the way and extent to which marketing activities are carried out.
- The *results phase* focuses on the performance of the service, e.g. in terms of achieved goals with respect to the target group. Lessons learned form the ex-post evaluation tackling this issue are then used for the design of a new following policy intervention or modification of the existing. As a consequence, the cycle is restarted from the beginning.

The systematic approach of the policy cycle model (with its close adherence to evaluations) – together with the identified framework conditions – determined the structure of the system of benchmarking indicators which was developed for the purpose of the underlying analysis. The indicators developed are to reflect the different elements of the policy cycle. In the context of IPR support services; this means that distinctive groups of indicators have to separately address the three policy phases outlined above. At the same time, the indicators have to take account of the specifics of IPR. The latter aspect was a special challenge regarding the design of performance indicators. As has been shown in preceding chapters, the

Table 6 Overview of important benchmarking indicators used for assessing the performance of the IPR support system

Benchmarking dimensions and benchmarking criteria		
Development and design		
expert input	preparation time	soundness of the goal system
stakeholder input	existence of a predecessor service	budgets allocated
ex-ante assessments	existence of target figures	human resources employed (quality and quantity)
Implementation		
choice of service offering organisation	relationship with national, regional and EU policies	level of integration with other (IPR and non-IPR) services of the service offering institution
cooperation patterns between different department units and/or external organisations (division of work(contractual agreements)	existence of in-house and external referral activities	efficiency of administration
interim evaluations	monitoring	other types of quality assurance mechanisms during implementation phase
marketing activities	geographical location of service provision – spatial distance to customers	
Performance and results		
input: expenditures for service activities (e.g. volume of provided subsidies)	output: Take-up by SMEs (e.g., number of SME beneficiaries)	output: Level of knowledge about the service in the target group (e.g., hit rates for web pages)
output: outcome measures (e.g., number of patents filed with support from the service)	added value/additionality	changed attitudes towards the usage of different IP protection instruments
reputation of the service within the target group	increased awareness of SMEs regarding IPR	general user satisfaction

Source: Austrian Institute for SME Research/Technopolis

usage of different IP protection/utilisation methods (including IPR) is highly specific to the business-environment in which a firm is operating.

Table 6 lists the most important benchmarking indicators used in the scope of the benchmarking exercise. For making these indicators operational, and in order to account of the heterogeneity of the services analysed, a rather qualitative approach was taken, using a mix of open-ended and standardised questions for the design of a guideline (see also section 2.2). This guideline was applied to an interview with the respective service provider, and to the subsequent assessment of the information gathered.

It has to be recalled from section 2.2, though, that the benchmarking data of phase 2 is primarily based on desk research and foremost on provider perceptions. It can be argued that especially the latter might only give a biased (and to an extent also superficial) view on the success of a service. This problem is inherent in benchmarking studies such as the one conducted, where there is a trade-off between getting a comprehensive overview and at the same time providing as much detailed information as possible.

However, the possibility to conduct user surveys with a significant amount of SMEs and to interview more than one person per service with regard to stakeholders and IPR experts provided a unique opportunity to dig deeper and substantiate claims regarding good practice elements on a much broader empirical basis. Furthermore, the user survey also allowed the identification of elements of good practice which were not reported as such by the service providers.

5.2.3 Selected services to display elements of good practice

Table 7 provides an overview of the selected services for case studies used to analyse and demonstrate elements of good practice, as derived from the discussion and the results of the benchmarking process described in the preceding section. The case studies are presented in lose order – the numbering does not represent a ranking of any type and is used only for easier referencing. For a full description of the case studies, please refer to annex I of this report.

5.3 Elements of good practice

5.3.1 A first glance: The quest for good practices (and the regress to elements of good practice)

The following section elaborates on the different elements of good practice identified in the context of IPR service provision for SMEs. The discussion draws on one hand on the results of the benchmarking exercise (phase 2 of the research) and on the other hand on selected results of the third phase, the good practice analysis. With respect to the latter, and as stated in section 5.2.2, it is especially the user survey that helped to underpin hypotheses derived from the benchmarking process regarding elements of good practice.

One might wonder at this point why throughout the study the term "**elements of good practice**" is used, rather than simply the term "good practices". The reason is that despite the rather large number of services identified, "good" services were hard to spot. A very few seemed to be of outstanding quality, the rest exhibited some positive performance features but also areas for improvement. As a result, the notion of good practice services was dropped in favour of a notion of underlining service features which could, each for itself, pose as a blueprint for the design of similar offerings. This approach also better accounts for the heterogeneity of the services analysed, and the diverse institutional and political contexts the services are embedded in within each country.

Table 7 Selected Services for the good practice analysis in Phase 3

Nr.	Title of the service	Type of service	Comments with respect to service description and/or elements of good practice
1	INSTI SME Patent Action (GER)	• Customized in-depth consulting and advisory services/points • Finance (& Legal Framework)	• Integrated service offering a financial subsidy for first patent applications • Nationwide coverage offered by central institution with regional partners • Broad impacts with rather little resources
2	Patent Information Centres (GER)	• Information Provision Services • Customized in-depth consulting and advisory services/points	• One-stop-shop for information/research on patents • Integrated approach (workshops, SME working group, etc.) • Large number of users
3	IK2 (Innovation and Knowledge) (SWE)	• Information Provision Services • Finance (& Legal Framework)	• IPR within general innovation support; access to IPR supported by specialised staff • Extensive networking • Integration into a portfolio of general innovation support schemes
4	Innovation by Patent Information (IOI) (NLD)	• Customized in-depth consulting and advisory services/points	• Programme involving cooperation between a development agency and the national PTO • Focus on patent searches • Positive evaluation results
5	IP Prédiagnosis (FRA)	• Customized in-depth consulting and advisory services/points	• One expert assesses, within 1.5 days, state of the art of IPR usage in a SME (free of charge) • Part of the INPI service portfolio • Regional networking, expert staff, standardised tools
6	"What is the key?" - Campaign (UK)	• (Pro-active) awareness raising measures/ Public Relations	• Successful awareness raising campaign by the UK PO • Collaboration with external stakeholders and agencies • Part of a larger IPR service portfolio of UKIPO (integrated approach) • Example of what a national PTO can do
7	IA Centre Scotland (Scottish Intellectual Assets Centre) (UK)	• (Pro-active) awareness raising measures/Public Relations • Customized in-depth consulting and advisory services/points	• Unique service that focuses on Intellectual Asset Management (rather than a specific IPR protection tool such as patents) • Events, advice, publications, standardised tools/checklists • Integrated service, expert staff, IA Management instead of "patent-only"
8	serv.ip (AUT)	• (Pro-active) awareness raising measures/ Public Relations • Information Provision Services • Training	• Patent search services, awareness raising for SMEs and training • Spin-out of the Austrian PTO, organised as a company (another example of how PTOs can evolve) • Expert staff, timely delivery, promising take-up with SMEs

Table 7 Selected Services for the good practice analysis in Phase 3 *(continued)*

Nr.	Title of the service	Type of service	Comments with respect to service description and/or elements of good practice
9	Intellectual Property Assistance Scheme (IPAS) (IRL)	• Customized in-depth consulting and advisory services/points • Finance (& Legal Framework)	• Financial subsidy for patent applications • Long-standing programme (since the 1970s) • Integrated approach & uniqueness
10	The VIVACE Programme (HUN)	• (Pro-active) awareness raising measures/ Public Relations • Training	• Example of IPR support in an EE context • Broad approach • Little historic burdens to cope with
11	SME Services pf the Center for Public Research Henri Tudor (LUX)	• Customized in-depth consulting and advisory services/points	• Integrated approach: trainings, awareness raising, publication (LIIPS) • Example of what can be done in a small country • Expert staff • Course (DIPS) deals with IPR management on a broad level
12	Foundation for Finnish Inventions (FIN)	• Customized in-depth consulting and advisory services/points • Finance (& Legal Framework)	• One-stop-shop for inventors and patentees • Offers its service in regional centres, delivered by expert staff • Organisational approach (broad, integrated)
13	Promotion of Industrial Property (ESP)	• Finance (& Legal Framework)	• Example of what can work in regional context • Financial subsidy for patent applications in a region with below-average patent usage • Complements some other IPR support measures • Relatively high impact
14	SME Services of the Danish Patent and Trade Mark Office (DKPTO) (DEN)	• Customized in-depth consulting and advisory services/points	• High activity levels of the Danish PTO in this respect • Renown and comprehensive website • Operate "IP Score" (IT-based IP assessment tool) • Trainings courses
15	Technology Network Service–Intellectual Property (TNS IP) (FRA)	• Customized in-depth consulting and advisory services/points • Finance (& Legal Framework)	• Operated nationwide using a network of experts with regional outlets • Subsidy available for a 5-days in-depth consulting regarding IPR management and/or first patent application, carried out by appointed expert

5.3.2 Design of the services: History and governance matter

The policy cycle model revisited

The idealised policy cycle model described in section 5.2.2 works under the assumption that regular evaluations are carried out in each cycle phase – preferably by an external evaluator – and the information gathered is exchanged with all actors involved, especially key stakeholders and policy makers. In this context, one can distinguish between *ex-ante evaluations*, *interim/on going evaluations* and *ex-post evaluations*. Evaluations usually employ a range of instruments (mostly a mix of qualitative and quantitative methods of social sciences) in order to achieve their goals, and it is the scope of the issues addressed, together with the methodology employed, as well as the adherence to certain quality standards, that sets evaluations apart from other types of quality assurance mechanisms.

So, one of the first questions to ask is how well the services designed follow the policy cycle model. The answer to this can be given by examining a) how the service came into existence (design phase) and b) what quality assurance mechanisms have been put in place during its operational time. As the range of quality assurance mechanisms scrutinised herein comprises also ex-post evaluations, there is – for the purpose of the question whether the policy cycle is adhered to – no direct need to look more into the actual results/performances of the service

History of the services

The services selected for the benchmarking process in the scope of the underlying study vary considerably with **age**. About 30 % of the services were implemented before 1998; 16 % are older than 20 years. By contrast, about 55 % of the measures were implanted in 2001 or later. By far the largest number of services are on-going and have no specified end date (78 % of those for which such information was retrievable).

The main activity areas addressed by policy in the past years seem to lie in the domain of passive information provision (12 new services since 1999; 3 still active from before that time period), pro-active information services/awareness raising (10 such services or service elements where data was available on this issue were set up after 1999, 4 are older), and subsidies/legal framework (6 such services enacted before 1999, 11 afterwards). By contrast, services of type III (training) and IV (customised in-depth consulting) (see section 5.1) are, on average, older. For type IV services, this can be explained by the greater amount of time necessary in order to establish integrated services of a wider scope – some form of continuity and a learning curve are needed here.

With respect to financial subsidy services, a shift can be observed: While older services tend to be more isolated offerings supporting patenting as such (e.g., the Austrian Patent Loan Action or the Irish IPAS scheme), newer subsidy services are more tailored to specific target groups (especially first time patentees) and also fulfil an awareness raising function (cases in point are the French 1er brevet (1st patent) service and the German INSTI SME patent action) (see also section 5.4.1).

The **preparation time** for the services – at least for those where information on this issue was still accessible – varied within a range of 1 month to 72 months, depending on the type of preparatory activities undertaken (see Graph 9 for the types of activities). On average (median value), six months were needed to set up a service.

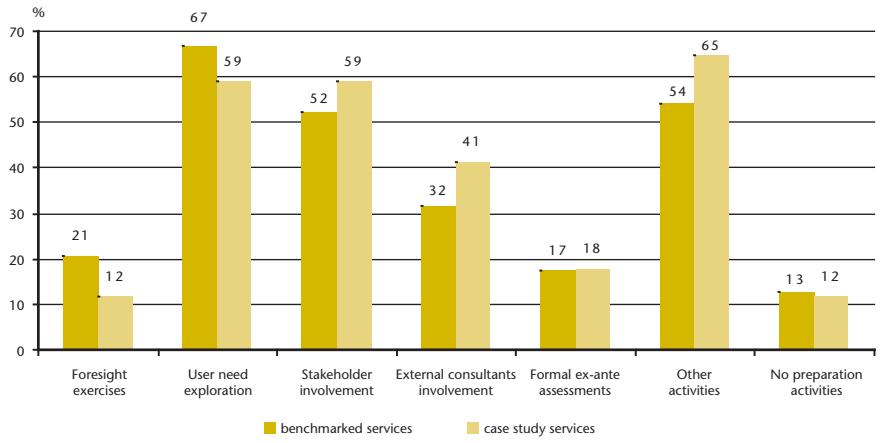
About half of the benchmarked services had a **predecessor service**. In the group of the case study services (i.e., the 15 services which were selected for analysis in phase 3 – see section 2.2), the respective share was higher (65 %). The existence of predecessor services can be seen as a positive aspect, but may constitute also a negative characteristic. On the positive side, one can learn from experience and use or respectively adapt existing structures to new needs with little effort. On the negative side, there is the danger of lock-in situations: Predecessor services create

earmarked budgets, customer pools, job descriptions and operation modes. In most extreme cases, and without proper input from the outside, the old structures determine the new ones. This is why services set up in Eastern Europe, for example, may have a benefit over the ones in old EU countries – they simply do not need to cope with legacy structures. Adding to the problem is also the often visible way of decision making, involving changing sets of actors and/or the pervasiveness of subjective views on a subject – the end result might be a "garbage can" of IPR support services, which looks chaotic from the outside and which has evolved into its state by chance rather than by rational decision making.[14]

Graph 9 shows the **activities** which were carried out **for the preparation of the launch** of the support services scrutinised in the benchmarking process. It can be easily seen that user need exploration (used in 67 % of the benchmarked services) and the involvement of stakeholders (which took place in 52 % of the investigated services, and even more with the case study services (59 %)) accompany for the most part the introduction of IPR services. Disappointingly, only 17 % of the benchmarked services had formal and thorough ex-ante assessments conducted; only about a fifth of the services used foresight exercises. The level of involvement of external consultations lies at about 32% for the benchmarked services. This share is higher for the case study services of phase 3 (41 %). About 13 % of the benchmarked services had no analysable preparatory activities. More than 54 % of the benchmarked services and 65 % of the case study services had "other" action taken in order to set up the service.

Taken together, these results suggest that the design phase differed a lot among the services analysed, and that – most likely – it deviated in many instances also considerably from the ideal policy cycle model. This seems not only to be corroborated by the low share of ex-ante exercises conducted, but also by the rather considerable share of services for which no preparatory action has been taken. Furthermore, the variety of paths taken to design services within the group of "other preparatory" activities partly supports the argument that the existence of services in their particular operation modes is only to an extent the result of a thoroughly planned process: Mentioned activities range from "direct governmental

Graph 9 Type of preparatory activities conducted for setting up the services investigated, percentage of services



Source: Benchmarking process, n (benchmarked services) = 66, n (case study services) = 15

[14] The garbage can model developed by Cohen, March & Olsen in 1972, offers a description of how decision making processes are handled in organisations: Decisions are mainly taken against the backdrop of problematic and subjective preferences (which become only clearer within the process), the lack of knowledge of organisational regulations and structures governing the decision making process and fluid participation, meaning that acting people and decision makers change constantly and certain subjects are discussed repeatedly on and on. Problems, solutions, acting persons and opportunities to reach decisions are independent flowing dimensions which create a context where the decisions taken are not the result of rational thoughts, but stem from the interaction of the mentioned dimensions. The resulting situation is a rather chaotic one (i.e., a garbage can), where the choice of solutions applied to problems is more likely due to chance (Cohen et al., 1972) than to rational thinking.

order", to "personal initiative", to "[usage of learning] experiences gained through the activities of the whole organisation".

The extent to which user needs have been actually scrutinised may also be subject to discussion: In some instances, the consultation of focus groups was involved; in others *"...demand was clear form the number of questions the 'parent service' received about IPR" (service provider)*. For many older services, the way the services came into existence was not even traceable.

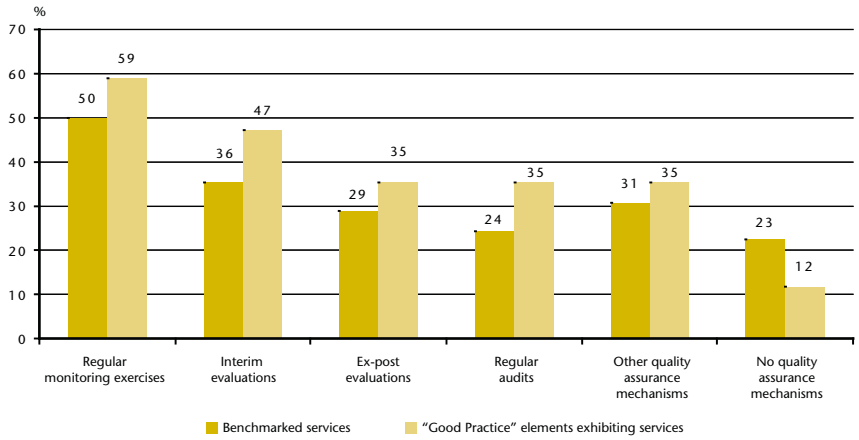
Quality assurance

Graph 10 provides an overview on the type of **quality assurance mechanisms employed**, differentiated by services in the benchmarking phase and by services which were actually selected as case studies for phase 3 of the underlying research, the good practice analysis. As can be seen, a rather large share of services (23 %) has no quality assurance mechanisms in place. The majority of the services (59 %) conduct regular monitoring exercises, under which activities such as the collection of feedback forms or reporting activities to the funding organisation (e.g., yearly reports) are summarized. "Other" quality assurance mechanisms (such as working groups with customers) are implemented in 35 % of the services in the benchmarking phase. Overall, only half of the services have formal evaluations conducted (interim, ex-post evaluation or regular audits). In addition, evaluations seem to be conducted less frequently on services from the patent offices than on those from other types of organisations. Against the backdrop that the services selected for benchmarking already present the better performing ones, this result may thus indicate a lack of evaluation culture in the IPR-for-SMEs service world.

One can observe that services that are evaluated tend to perform, on average, better than non-evaluated ones. The services selected as case studies for presenting good practice elements have, on average, tighter quality assurance mechanisms in place than the benchmarked ones.

Not using **evaluations** on the IPR services analysed seems to have implications especially in terms of accountability and customer orientation – the latter opposed to the service provider's self-perception. In the first case, it is questionable whether the funding bodies of the services actually do have all information necessary to gauge performance. In other cases, it seems that the knowledge of the service providers about their customers may be limited. Even with some case study services, it was difficult to obtain large enough contact databases which contained all necessary contact information as well as information on the types of customers (SMEs, patent attorneys, large enterprises, etc.). Data protection issues play a role, but they seem to be only part of the story.

Graph 10 Quality assurance mechanisms in place, percentage of services*) **)



*) *Multiple counts allowed*

**) *Ex-ante evaluations would in the strictest sense also be part of quality assurance mechanisms, but are discussed for better readability as part of the preparatory activities (see Graph 9).*

Source: Benchmarking process, n (benchmarked services) = 66, n (case study services) = 15

5.3.3 Institutional set up: A case of systems fallacy

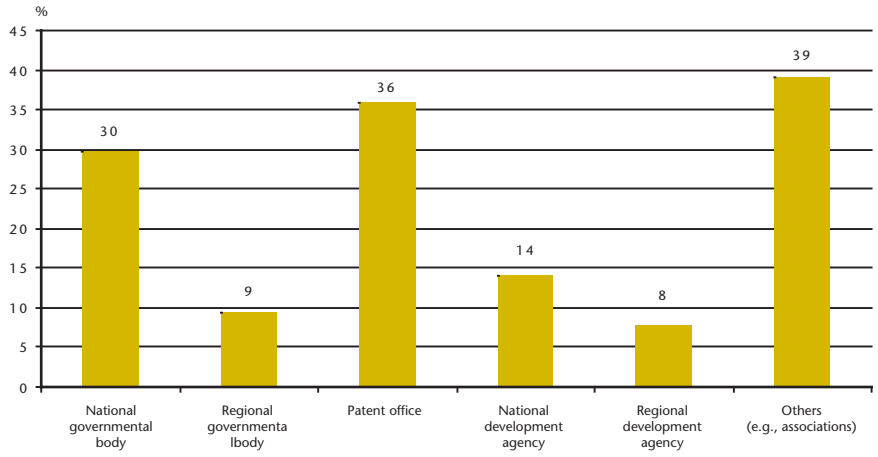
The **institutional background** (in terms of what type of organisation is offering the support service) may constitute a vital issue concerning the probable performance of an IPR support measure. Historic context, customer base, qualification profiles of the staff, mindsets present and embeddedness of the organisation in the overall innovation policy landscape are all likely to have an impact on the way the service is delivered.

Graph 11 shows that IPR services are to a significant extent operated by **national patent offices** (36 % of the benchmarked services are run by this type of institution), and to a much lesser extent by technology/development agencies (which account for 14 % and 8 % of the benchmarked services, respectively). Governmental bodies (national and/or regional ones) can be considered to form to a certain degree a group together with many of the organisations subsumed under the "others" heading. This reflects contractual arrangements between the governmental bodies and, e.g., associations, research institutes (the DIW Cologne, for example, which is responsible for the INSTI programme; an IPR programme in Germany) or private companies, whereby the service is either offered jointly with or on behalf of the governmental bodies. The remainder of other in the "other" services is comprised of technology parks, chambers of commerce or incubators which usually offer smaller IPR services (e.g., referral services to patent attorneys within the scope of open days).

This institutional set-up may come in many ways as a surprise:

- **Development/technology agencies** are usually concerned with services offering support for R&D projects and/or projects aimed at implementing innovations. They are at the heart of many national innovation systems and have been acting increasingly as executing agents for the operation of support measures in the two above mentioned fields (this trend is also called "agencification") (OECD, 2002). Hence, their service portfolio covers a rather large range of topics, of which many are of direct relevance to SMEs. One could thus expect that development agencies would also play a vital role in IPR service provision, even more in the light that – recalling from the previous section – IPR management should be ideally addressed as part of innovation management. It seems that if IPR services exist within development/technology agencies, they are often marginalised within the overall service portfolio: IPR services are often run by a rather small team of experts within the agency who enjoy a kind of "exotic" status among the agency staff.

Graph 11 Type of service offering institution of benchmarked services, percentage of services*)



*) multiple counts allowed
Source: Austrian Institute for SME Research, benchmarking process, n=66

- By contrast, the relatively high number of services run by **national patent offices** is at first sight astonishing, against the background that the original task of the patent offices was (is) the handling of patent applications and the processing of respective filings as a public authority. However, according to expert opinions, their emergence as service providers may be viewed as a reaction to the development that the European Patent Office (EPO) has been taking over more and more tasks of the national offices. National patent offices find themselves increasingly under pressure to look for new roles and activity fields or face the prospect of being cut/shut down in the long run. Becoming a service provider is in this context an obvious option.

Having a service operated by a development agency or a patent office may entail advantages and disadvantages in either case. Development/technology agencies are, according to the experts interviewed, generally said to be well known among SMEs (because of their wide range of services available) and to possess a lot of business know-how. However, their IPR know-how may often not be well developed, and they also do not have a track record regarding IPR.

By contrast, due to their **history**, patent offices have knowledge of IPR – at least to the extent of patents and the technicalities regarding their administration. Further on the plus side, patent offices are considered to be reliable and impartial. On the downside, most experts agree that patent office staff have rather little business knowledge and may be too much focussed on patents (as implied by the organisational history). Furthermore, the status of a public authority brings with it the need to adhere to a certain bureaucracy, which many experts would see in conflict with customer-orientation. Certain services (such as subsidy services) may, furthermore, have the potential to harm the impartial character attributed to the patent office as a public authority.

The lack of evaluation culture, together with the increasing and important role of national patent offices in IPR service provision for SMEs, suggests that IPR services are, in terms of investtigated innovation policy instruments, to a large extent uncharted territory. The main cast of actors in IPR service provision often seems to be different from that of the more general innovation and R&D support world, the world of the technology and development agencies. This can be seen as an example of **system fallacy**, as the IPR services clearly operate with innovation-related goals. This system fallacy is further aggravated, as the subject of proper IP management and the usage of less formal IP protection methods are hardly tackled – thus, "blind spots" are created.

5.3.4 Employed resources: Expert staff and budgets as key issues

High impacts of policy interventions can only be achieved if appropriate resources are dispatched to tackle the issues surrounding the intervention. The resources which were investigated in this context comprised available budgets, such as for subsidising patent applications, and the availability of human resources in sufficient quality and quantity.

The factor human resources

As regards the **number of staff**, one can say that a high share of the benchmarked services is operated only by small teams: 35 % of the staff teams employ at most 3 full time equivalents (FTEs); 18 % see only one FTE in charge. On the premium end, one can find a few services which employ 80 FTEs or more, comprised mostly of services which draw on a network of experts or service providers and which have a small coordinating team at the headquarters. However, services with more than 10 FTEs account for less than 18 % of the benchmarked services. Bearing in mind that the selected services for benchmarking are presumably among the larger ones (because of the requirement to be analysable and to have a pool for successfully interviewing 50 users in the course of the good practice analysis), one can conclude

that the majority of the IPR services offered are small in terms of manpower employed.

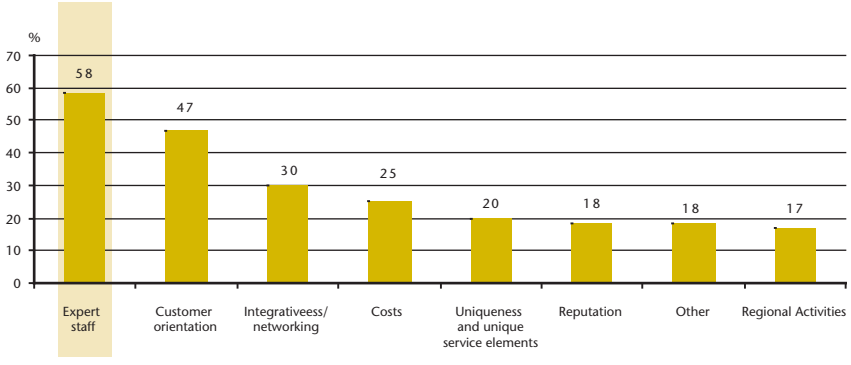
An important core success factor, as it is perceived by the service providers and also corroborated by the results of the user survey on the case study services, is the **competence of the service operating staff** (Graph 12). This is underlined by service providers and users of the services alike. Most of the service provider's statements about service strengths related to the level of qualification of the staff (58 %). Issues which could be summarised as "customer orientation" ranked second; all other factors were mentioned only about half as frequently as the qualification issue.

The **user survey** conducted on the 15 case study services provided even more compelling evidence on the significance of expert staff. Within the scope of the survey, the users were asked to rate a range of aspects according to their relevance for the quality of a service similar to the one they used. Graph 13 shows that 77 % of the users deemed the factor of staff competence to be of high relevance, another 12 % gauged this factor to be of medium relevance. Taken together, the competence level ranked first as a quality issue. This can be seen rather independent of the type of service used. Breakdowns according to the individual case studies showed a similar picture. The results are comparable because the question was posed in identical manner to all users, regardless of the type of utilised service.

The significance of qualification levels rests on the fact that matters related to IPR – **ideally** – require **technical**, **legal** and also **business know-how**. These requirements entail a cascade of consequences for the set up of IPR support services, the first one being that the level of experience demanded tends to call for senior staff with relevant academic background and work experience rather than for younger staff who just graduated from university.

Respective candidates are, however, likely to be scarce – and thus also expensive. The situation is further aggravated in the light of limitations arising from payroll regimes and career opportunities in the public sector as opposed to those of the private sector. Yet another limiting factor is the lack of educational offerings (see, for example, Moulin & Thue, 2005 for the Nordic countries in Europe). This lack is, according to expert opinions, especially apparent with regard to the business dimension of intellectual property management: Technical knowledge seems to be, by comparison, more frequently available (patent examiners in the patent offices are usually scientists or engineers), and legal knowledge is available from the private sector in the form of patent attorneys who also have a technical or scientific background.

Graph 12 Perceived strengths of the services by the service operators, percentage of services *)



*) multiple counts allowed

Source: Benchmarking process, n = 66, clustering of responses to open question into groups performed by Austrian Institute for SME Research

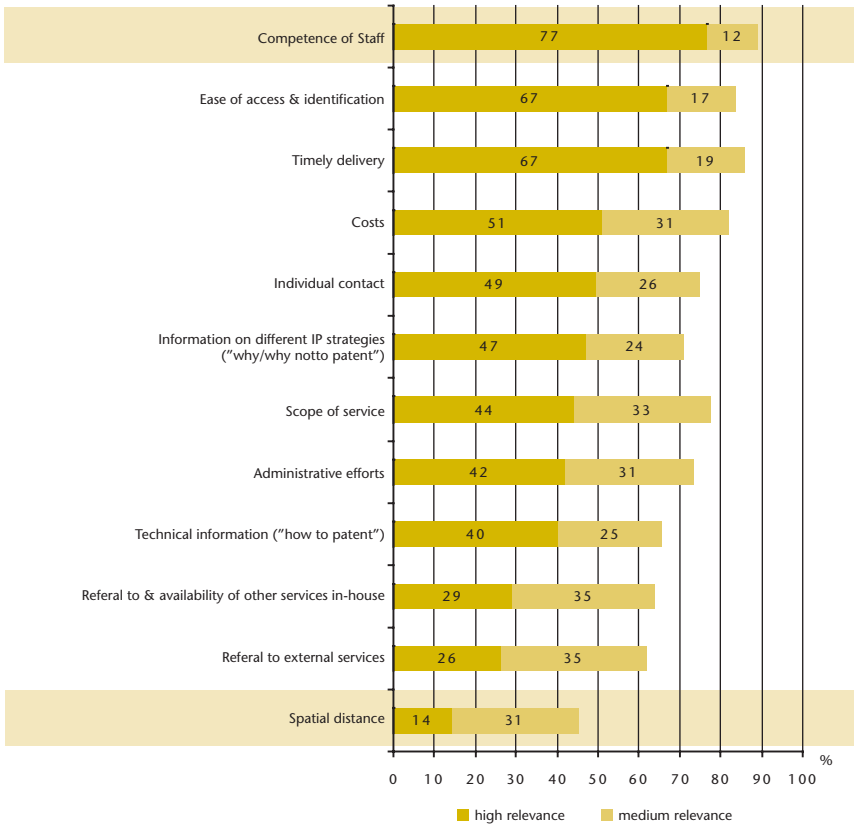
As a matter of fact, anecdotal evidence suggests that the tight market for knowledgeable IPR experts is indeed a limiting factor for expanding the service offerings:

> *"Maintaining knowledgeable staff has proven difficult." (service provider 1)*
>
> *"We are faced with a lack of skilled and multilingual staff." (service provider 2)*
>
> *"[We have] difficulty of retaining staff at regional level; the salaries are not attractive." (service provider 3)*
>
> *"One of the greatest benefits we had [from using this service] was to note that there are indeed very few knowledge people – and to learn to live with that." (SME user of an IPR support service)*

The statement made by the third service provider has an implication arising from the lack of human resources: It will not likely be possible to offer high quality IPR support services to SMEs in each and every regional outlet or locality. However, this might not pose a big problem, as **spatial distance** is considered to be the **least important** quality factor for an IPR support service by the user base. Again, this result regarding less importance for spatial distance holds for almost all services analysed – probably because there is not an every day need for such measures, and if such a need arises SMEs are willing to travel a reasonable distance.

Against this background, it appears sensible to opt for a centralised approach: A nation-wide offering could pool knowledge and human resources at some main headquarter location, while regional outlets market the service and refer interested parties to the main unit. This could also have positive implications with regard to marketing and visibility.

Graph 13 Key quality factors for the provision of IPR services, user perceptions according to relevance, service users in %, aggregated answers



Source: Austrian Institute for SME Research, services considered = all (15); n = 630

Budgets

Of the service providers in the benchmarking process, 73 % eventually provided budget data. Care must be used in comparing budget figures because the services have different service goals and designs and also different accounting and costing standards.

The reported numbers suggest nonetheless that the benchmarked services may, on average, be funded at rather low levels. The median amounts to € 187,000 p.a., which means that about half of the services may draw on less than that amount. Taking overheads into account, the median would be at around € 158,000 p.a. – hence, around 50 % of the service providers can spend at most € 158,000 p.a. on direct support activities. For the case study services, in contrast, the average budget available amounted to almost € 400,000 p.a., all available for direct service activities, again using median values.

These results provide additional evidence that, despite the large number of identified services, only small pockets of well-funded schemes exist for supporting SMEs in the field of IPR.

5.3.5 The performance of the IPR support services

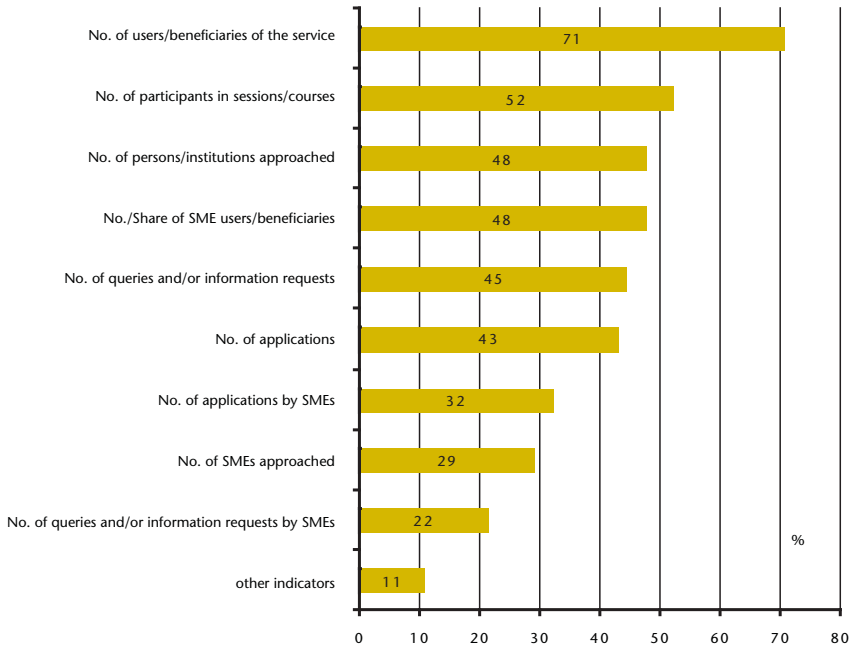
While the preceding section examined the resource (or input) side, this section now looks at the output/outcome side. The analysis presented draws on the one hand on information provided by the service providers in phase 2 of the research mission, e.g., monitoring data. On the other hand, important insights are gained from the results of the user survey in phase 3.

5.3.5.1 User take-up and out-reach

User take-up

Graph 14 shows which indicators are used by the service providers to monitor the take-up of the offerings. It shows that most of the services collect information on the number of users or beneficiaries of the services (71 %). The usage of more

Graph 14 Indicators used to measure take-up of the services, percentage of services



Source: benchmarking process, n = 66

detailed indicators is lower, but this, of course, has to be seen in the light of the suitability of specific measures in the individual service context.

Only about half of the service providers reported actual figures for the number of beneficiaries. The range – between 4 and 286,244 – was quite spectacular and has to be seen (i) against the individual service designs/type of services and, following this, (ii) in terms of what service providers count as beneficiaries. Accordingly, there is a qualitative difference between, for example, the number of visitors to a website and the number of persons who received one-to-one in depth consulting. Furthermore, some providers actually do not have information on the number of beneficiaries as such, but use proxies as estimates, e.g., the number of supported projects instead of the number of supported companies. The usage of such proxies may involve issues like double counting. Given also different service goals and scopes, it does not make sense to compare data concerning for the number of users of the service, however relevant this might be as a monitoring indicator for the individual service.

Having said that it is still interesting to note that about 70 % of the services reported having more than 100 users p.a. The median value recorded amounted to 463 users. Yet, when looking for services for the case study analysis, services which would forward contact data for as many as 50 users were hard to find. Data confidentiality may play a role in this context, as may also issues related to governance (see also section 5.3.2). According to experts, the actual SME user base for many IPR support services – especially for services which extend funding or provide in-depth consulting, i.e. what one could consider to be higher level services – may be rather small.

User out-reach

Against this background, many service providers, and also users of the services analysed as case studies, point to the lack of visibility of the offerings and rather weak marketing activities, especially in Europe. An explanatory factor for the difficulties in reaching out to the target group can be often seen in the institutional set-up (see also section 5.3.3). Rather low endorsement with financial resources also seems to frequently constitute a constraint for larger outreach activities.

5.3.5.2 Expected and actual outcome and impact of the IPR support services

Graph 15 shows the indicators used by service providers to measure the outcome of their activities. Notwithstanding the fact that some of the measures might not be relevant for specific types of service, one can clearly see that service providers tend to focus most on customer satisfaction and on the number of IPR titles (especially patents) filed and/or granted with support from the service when gathering information on the actual outcome of their activities.

Most providers who take account of user satisfaction believed that their customer base is generally happy with the services offered. The extent to which these statements are backed up by evidence, however, varies considerably. While some conduct user satisfaction surveys and few carry out evaluations, others base their opinion on circumstantial evidence (such as that people usually do not complain) or on hearsay only. The results of the user survey, however, show that the vast majority of the users of the 15 case study services are highly satisfied. Only at times have there been complaints about issues related to timely delivery or administrative burdens.

Patents filed with support from a service – a misleading indicator?

The indicator in Graph 15 "patents filed with support from the service" is used to different extents by about a third of the benchmarked services. However, it was possible to obtain actual figures only for about a dozen measures; the others rejected quoting figures for one or a combination of the following reasons: (i) data protection issues (ii) apparent young age of the programme, and thus the lack of a track record particularly given that there may be considerable time lags between

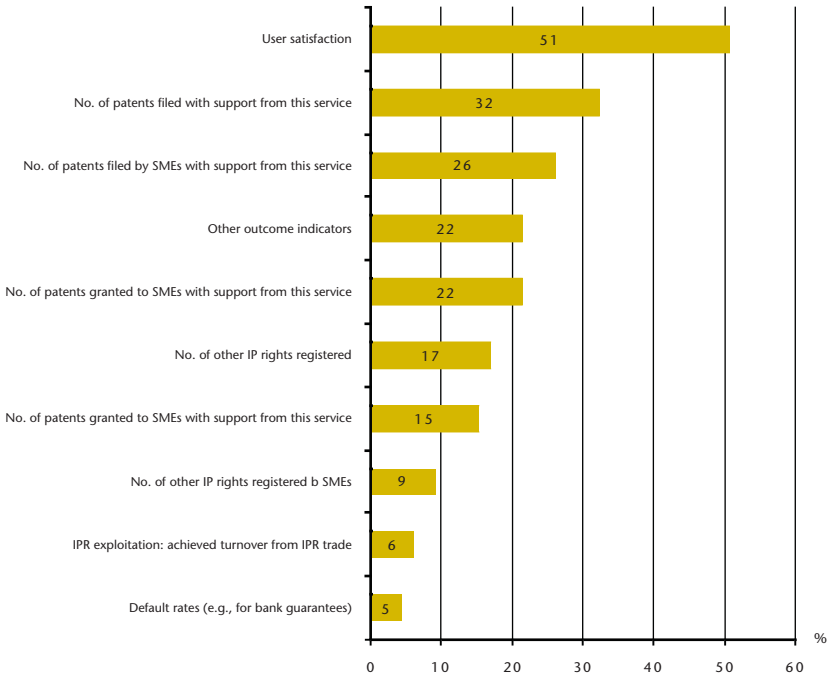
the start of the support and the actual patent filing, (iii) the indicator is only recorded sporadically (e.g., within the scope of evaluations), and (iv) if values are collected, but they do not reflect the full picture of support given because they show only a snapshot based on a sample of beneficiaries interviewed.

Furthermore, practically all service providers interviewed, including those who did make use of the indicator "patents filed with support from the service" as well as those who did not, were extremely hesitant in acknowledging the **practicability and usefulness of the indicator** as a performance measure. It has to be recalled from the discussion in previous sections that a patent can be a double-edged sword: It may be a useful tool to exploit and protect the IP of a firm, but it could also prove harmful, e.g., if an SME has not the means to defend the patent in court. It has subsequently also been shown that the decision-making process to patent or not to patent is complex and must take into account the business context of the company and the many alternatives to patenting.

This opens up one of two problem dimensions for using the patent-filed indicator alone for gauging performance: First, it could exert pressure on a service to push all its customers to go for patents, even when it is actually clear to the service operating staff that patenting would not be in the best interest for a particular supported company. And, second, even if one assumes that patenting would at least not harm the company directly, given the cost situation, an SMEs is likely to benefit from patenting only in two cases: in a business environment where patenting starts to become prevalent, and if the invention (and the business model behind it) has true and rather high commercial value:

> *"In general, I would not recommend an SME to patent except for two cases: First, if the competitors start patenting because at some point later in the future, if one does not react to it, one will be basically patented out of business; and second, if the invention is really great and commercially promising – and by that I mean really great" (Patent attorney).*[15]

Graph 15 Indicators used for measuring the outcome of the services, percentage of services



[15] The situation in which a patent is introduced into an industry which has been hitherto not been affected by patenting, is currently analysed in research under the tem "patent shock". The basic model would assume that once an important patent is introduced into an otherwise IPR-void industry competitors have to pick up on this and start patenting, too. This creates a loop of patenting activities which may eventually lead to a point where patenting is so dominant that the sheer number of patents (a so-called patent thicket) in that industry is likely to decreases everyone's freedom to operate and hence inhibits also innovation activities (see Walter & Moehrle, 2007).

Thus, for gauging the performance of a service, and depending on the service goals, not only the number of patents filed, but also the **value of these patents** as well as **interdependencies and reciprocities with other IP protection methods** have to be taken into account. Such interdependencies/reciprocities arise, for example, when companies refrain – as a result of advice taken from a support service – from patenting (resulting in a decrease or no change with respect to the measure "patent filed with support of the service"), and use other IP protection tools instead, e.g., a trade mark, which would mean an increase with respect to this indicator. The question then is how all the respective increases/decreases of the individual measures should be valued on an aggregate level.

All in all, a **clear distinction** must thus be made for using the indicator "IPR title filed with support from the service" within a monitoring system and its usage for performance measurement. The evidence gathered points to a situation where particularly careful ex-ante planning is needed in order to develop a set of performance measures that (i) go beyond simple counting of patent or other IPR title applications and that (ii) are closely tied to the goals of the service. A service which, for example, has as its goal to foster only the best patent ideas is likely to take the value of the supported patents and their actual commercial success much more into account (which in turn probably entails fewer supported patenting projects) than a service which has the goal of helping SMEs get first experiences with the patenting process.

Evidence from the user survey employed in the case study analysis

One of the goals of the user survey conducted in the course of the case study analysis in phase 3 of the research was to assess the impact on the beneficiaries of the services, i.e., the outcome of the service activities seen at firm level by the user base. Two assumptions were made: First that a good practice service will not only **encourage** the usage of a particular IP protection method, but also **discourage** its use if it is not appropriate in the business context of the supported SME. This assumption entails that the usage/attention levels given to different IPR and informal IP protection tools may either decrease or increase, and no "positive" judgement concerning a particular direction of the change is a priori possible. Second, that the limitations presented above would not make it feasible to use metrics of the type "IPR instrument filed with support from the service" for measuring the outcome of the service.

In order to assess the outcome and impact of the services, a more **qualitative approach** was chosen by applying the concept of "behavioural additionality" (see also OECD, 2006). In this context, it was aimed to capture behavioural and/or attitude changes – together with their direction – with respect to IPR-related activities which were induced by the services within the supported SMEs. Graph 16 shows the aggregate results for all 15 case study services.

The following observations can be made:

- Most of the changes took place with respect to the aspects **"general awareness"** (which increased for 55 % of the users of the services) and "general knowledge management know-how" (which increased for 46 % of the users). The knowledge of the patent environment improved for about 42 %. Thus, the three most important behavioural changes induced concern the IP and IPR know-how of the company.
- The increased know-how has led to a significant share of SMEs **pooling their IPR know-how** with certain departments or persons – formal IPR responsibilities within the enterprise have increased in about 28 % of the supported enterprises.
- Interestingly, and despite the patent centricity of most IPR services, **patent usage** within the company's IPR strategy increased only with 27 % of the companies. Thus, a higher focus on patents ranks only fifth, if compared to the other aspects scrutinised.

- In addition, it is surprising to see that **displacement effects** (informal protection practices being substituted by formal IPR) are rather small – reliance on design complexity has decreased with only 4 % of the enterprises, reliance on lead-time advantage with only 3 %. Moreover, the usage levels of informal protection mechanisms has increased overall significantly – the increased attention level given to trade secrets (+20 %) falls only short by 7 %-points to that of patents. It may be that in many instances and through using an IPR support service induces SMEs to use informal practices more consciously.
- The **lowest behavioural effects** can be seen with licensing activities. This result may reflect the fact that the services analysed (as well as those identified in the first phase of the research mission) primarily focus on the first phases of IPR usage and development and less on later exploitation phases.

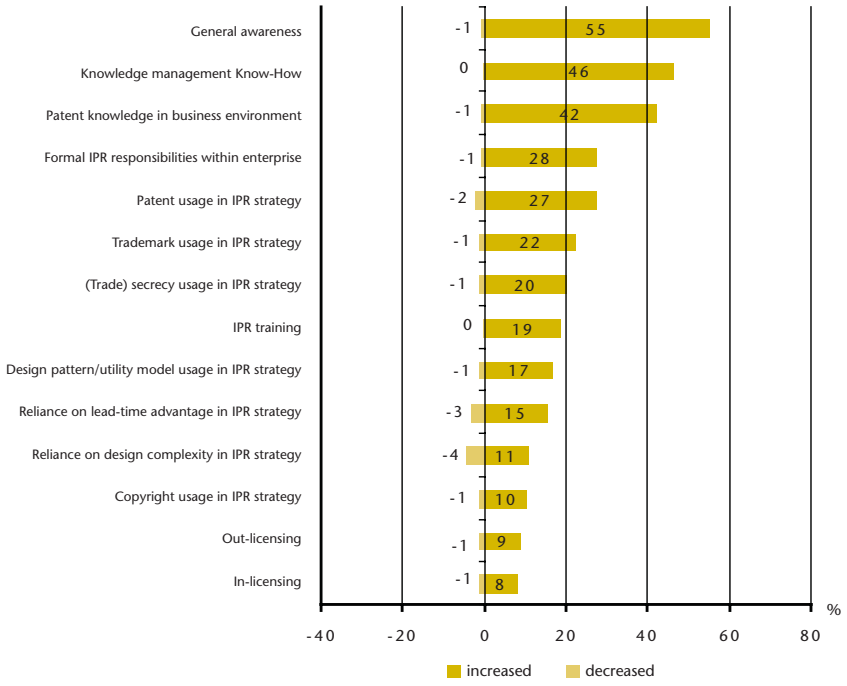
These results show that the services selected for displaying elements of good practice were able to induce **behavioural changes** on a wide range of aspects related to the usage of IPR and/or informal IP protection methods. Though no definite assessment can be given of whether these changes are all for the better, one might still argue that, at least to a certain extent, the services were able to tackle the full range of IP protection mechanisms – advising also on alternatives to patenting – and offer their services in a manner suitable to the business context of the individual supported SMEs.

It should be noted that the case study services – notwithstanding the fact that the notion of good practices has been dropped (see also section 5.3.1) – represent rather well performing services within the set of identified and benchmarked services. Yet, the subject of IP management – especially the selection and execution of the right IP protection/exploitation strategy in the given business context of a firm – is, according to IPR experts, still a challenge even for many of the case study services.

Integration and networking matter

One explanatory factor for the wide range of behavioural dimensions the services were able to reach is the fact that practically all case study services can be

Graph 16 Outcome of the case study IPR services – behavioural additionality, users in %



Source: Source: Austrian Institute for SME Research, services considered = all (15); n = 630

considered to be **integrated services**. Even in the set of the benchmarked services, about 9 out of 10 services stated that they would offer also other IPR-related services (48 % would even offer services that have nothing to do with IPR). Notwithstanding the different scopes and goals of the individual IPR services within the IPR service portfolios, it can be argued that the packages as a whole address a rather wide range of similar IPR matters, in many instances also with similar tools. This does not mean necessarily that services which are smaller in scope cannot have a favourable performance in the field of IPR. For such services, smaller size can be compensated through referral activities to other more specialised institutions.

Thirty percent of the service providers in the benchmarking phase see the fact that the service is either offered as a part of a package of IPR services or greatly networked with other institutions as a noticeable strength of the service (see Graph 12, page 55). This is the third most important success factor noted after expert staff and customer orientation. According to experts, the distinct advantage of taking an integrative approach is mainly related to **synergy effects**. Competence is built throughout the different service packages, and intra-organisational learning effects are achieved far more easily. In the current context of a shortage of supply of qualified staff, integration helps to pool the available resources. In principle integration also results in more easily identifiable measures. Hence, integrative approaches should be considered under most circumstances if IPR services are to be set up.

5.4 A closer look at selected generic service types

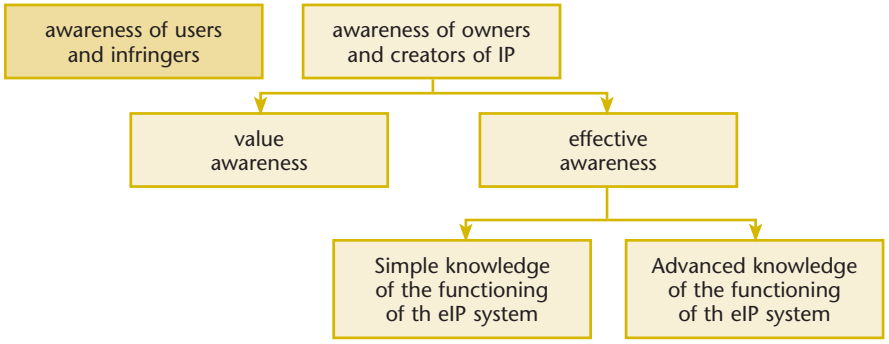
5.4.1 Cheerleading for IPR – Success factors for IPR awareness raising services

The different levels of awareness

As mentioned in section 3.4, lack of awareness of and knowledge of how to use the IPR system are seen as major constraints for higher IPR utilisation levels by SMEs. In the following section it is outlined how this issue can be tackled by support services and what problems have to be taken into account when measures aiming to raise awareness are designed.

As a prerequisite, a closer look at what actually constitutes being "IPR-aware" shall be taken. The term awareness can imply a whole range of knowledge levels, from a very basic knowledge of the existence of an IPR system to a very detailed knowledge on the functioning of IPR, close to what can be expected from IP professionals. Against this background, one can distinguish, on a very general level, between IPR awareness of users and infringers and that of owners and creators of IP (see Graph 17) (Pitkethly, 2007). The latter can be further broken down into "value awareness" and "effective awareness".

Graph 17 Different levels of IP awareness



Source: Pitkethly, 2007, adapted by Austrian Institute for SME Research

Value awareness refers to the ability to assess the benefits of using IP protection methods; e.g., people who are value-aware can decide whether it is worth to renew a patent (i.e. pay the yearly maintenance fees) or not. They may lack, however, the basic knowledge of how the IPR system works and are thus not able to make qualified decisions regarding the choice of the best IP protection/appropriation instrument to be used in a particular business context, and, more importantly, what should be taken care of in such a decision-making process. For example, people who are value aware might assume that a patent would in principle be a good means to protect their inventions, but they fail to know that publication of respective research results prior to a patent filing might make it impossible for the invention to be patented – a situation which is, according to interviewed patent attorneys, rather common.[16]

People who know, by contrast, such technical particulars are said to be **effectively aware** of the IPR system, as they can put the IPR system "effectively" to use. Within effective awareness one can, eventually, also distinguish between a more simple form (where SMEs know the necessary basics of how to use the IP system and are able to identify and seek out the right service providers when they need support for special issues) and advanced knowledge (as held by IP professionals, e.g. in IP departments of large enterprises or freelance patent attorneys). Being effectively aware goes, according to Pitkethly, hand in hand with visible IP management practices that can be measured and observed, e.g., in terms of licensing activities, in formal responsibilities for IPR within the enterprise, in the formulation of an IP policy or in using IPR training.

The experiences in the course of conducting the underlying benchmarking study support the notion that **"value awareness"** and **"effective awareness"** are separate forms of awareness. For example, SMEs might know well the technicalities of how to file a patent (e.g., to keep the invention secret before filing the patent, to use the right application forms or to revert to the right authorities and patent attorneys), but they may not be entirely sure whether applying for a patent is actually the best way of protecting their invention in the given business environment. Value awareness can thus be said to refer to the business aspect of decisions regarding the usage of IP protection practices, whereas effective awareness has a higher focus on technical and esp. legal aspects.

Expert opinions point to a situation where SMEs, acknowledging their resource constraints, should ideally be value aware as well as effectively aware in its simple form (though it can be argued that this "simple" form of awareness may not be simple after all).

(Pro-active) awareness raising services in place

The question is what can public policy do to raise awareness of SMEs to the desired levels. The evidence collected in the benchmarking study suggests that services implemented and addressing this issue can take a variety of forms, which can be grouped in two categories. The first group comprises measures which try to create simple awareness in the form of a first introduction to the IPR system – they are thus likely to resemble first parts of the puzzle towards full value and (simple) effective awareness. Such service types typically include:

- Roadshows/campaigns: Roadshows denote a series of events, usually held at different locations and labelled under one brand, which may last from two hours to a whole day. The attending audience is usually pro-actively invited to participate (e.g., through networking partners) and the topics usually focus on basics of IPR (e.g., What is a patent? How can one file for a patent?). The events are usually also used for presentations on other support programmes surrounding IPR.

[16] Along the same line, in the study conducted by Pitkethly, only 11.2 % of the interviewed micro-enterprises (0 to 9 employees) and only 15.8 % of the small enterprises (10 to 49 employees) were able to answer the question of whether publication of an invention before filing a patent would prevent the patent from being granted; the share of right answers with large enterprises (more than 250 employees) amounted, by contrast, to 33.1 % (Pitkethly, 2007).

The campaign "What is the key?"

"What is the key?" (abbreviated WITK in the following) is an IPR awareness raising campaign organised and run by the UK Intellectual Property Office (UKIPO) in partnership with national and local authorities. Its objective is to offer an overview of the law relating to IPRs, to show their importance to businesses and how they are relevant to companies of any size. The purpose of the campaign is to make businesses, especially SMEs, more aware of their intellectual assets and their potential and to offer information and support on how to protect them. WITK can be seen as an "information day", set up as a two-part IPR event: during the first part, a short introduction to intellectual property rights covering patents, trade marks, designs and copyright is given to inform the interested audience about recent developments and available public support services. Depending on where this event is presented, local service providers are also invited to talk about their support services concerning legal protection of IP. The second part of such an event presents case studies which describe and illustrate how (local) entrepreneurs benefited from using IPR to protect their intellectual assets. Panel discussions and open question/answer sessions are offered at the end of each event. The programme is managed in collaboration with the Chartered Institute of Patent Agents (CIPA) and the Institute of Trade Mark Attorneys (ITMA), thus including also relevant service providers from the private sector. Events to promote the programme have been held all over the UK in co-operation with local partners such as Business Link Offices and regional development agencies, which underlines the regional character and dimension of WITK.

- Open days: Two forms of open days were mainly observed in the context of the underlying benchmarking study: (i) Open days, where the IPR service-providing organisation allows free access to its premises and informs visitors about aspects related to IPR; often, such open days are accompanied by an exhibition where at different booths information on IPR-related subjects is displayed. (ii) Open days, where patent attorneys make a short presentation on (mostly legal) aspects linked to IPR and answer questions from the audience. The latter type of open days is generally organised by service-providing organisations which usually do not operate IPR services in-house (see also section 5.4.3).
- Publications: Brochures and websites: The creation of brochures on different aspects of IPR and/or presentation of such information on a website (e.g., for download but also in a more interactive manner) seem to be strong activity fields, especially for many patent offices.[17] An example is the LIIP (Linking Innovation and Industrial Property) publication by the Technology Watch Centre of Henri Tudor in Luxemburg (an outcome of an international cooperation involving Spanish, Luxemburgish, Irish, Italian and Greek organisations (mostly patent offices)) which provides 10 pragmatic recommendations for SMEs *"…highlighting the importance of IP to companies´ business strategies"* (LIIP, 2003: 4). Another example is a series of three information booklets published by the Czech Industrial Property Office in English and Czech language on trade marks, designs and the protection of technical solutions. With respect to websites, a noteworthy example would be the IP Toolkit offered via the website of the Canadian Institute for Intellectual Property (CIPO) which includes extensive awareness-raising materials (e.g., brochures and interactive learning guides) with respect to IPR (see also Graph 18).

[17] Though the study focuses on national offerings, it should nonetheless be mentioned that WIPO (http://www.wipo.int/sme/en) and the EPO (http://www.epo.org/focus/innovation-and-economy/sme-case-studies.html) provide extensive material of this kind, too.

- IT-Tools: The term "IT-tools" subsumes computer applications which may be used for assessing the knowledge of an SME on IPR, usually by computing scores to multiple choice questions. Cases in point are the "IA Benchmarking application" accessible via the website of the IA Centre Scotland, the "IP Toolbox" application which is an interactive scoring tool included together with the LIIP publication on CD-ROM or the "IP SCORE" application developed by the Danish Patent Office and sold to the EPO. IP SCORE differs from other tools in so much as it attempts to provide an assessment of the value of a company's IP – the other tools "simply" compute scores with respect to the awareness/"maturity" level of the company with respect to IPR.

The **second group** of measures try to tackle the issue of IPR awareness in a much more thorough way and address value/effective awareness as a whole. Such services count considerably less in numbers, and the borderline between these services and in-depth consulting/ training services may be at times blurred. Often, services in this group developed also awareness raising material such as brochures and publications that could be, on their own, also considered as awareness raising measures similar to the ones subsumed in the first group. Two distinct service types emerged in the scope of the underlying benchmarking study:

- (First-time) IP audit services: IP audit services try to induce awareness by trying to provide a first guide on how to value and use the IP of a particular enterprise. Usually, this is done in a one-to-one process manner, where the company is advised by an experienced IP professional. The IP professional introduces the company to the concept of Intellectual Property and the different tools of IP protection. Eventually, he/she attempts to make an initial assessment of the value of the company's IP and a way an IPR strategy should be designed. Cases in point are the "IP Prédiagnosis" programme in France or the offerings of the "IA Centre" in Scotland.

Graph 18 The IP toolkit provided by the Canadian Institute for Intellectual Property (CIPO)

Source: CIPO 2007, screenshot of Web Site July 22 2007

IP Prédiagnosis (FRA)

Provided by the National Industrial Property Institute (INPI–Institut national de la propriété industrielle; the French Patent Office), the overall aim of IP Prédiagnosis is to analyse SMEs as a whole with regard to their IP and IPR usage. The service is thus not focused on a particular project or invention. The target group consists of enterprises that have not registered a patent before (within the past five years) and usually do not possess an IPR strategy and/or relevant IP management. During an IP Prédiagnosis (which can last between 1.5 to 2 days) the service provider (an IP rights expert) discusses the company's situation with its manager in order to identify the enterprise's needs, wants and expectations in the field of IPR. A standardised guidebook has been specifically designed and tested for this purpose. The expert analyses the state of the art of the IP management and/or strategy of the enterprise, evaluates the significance of IPR in the present situation and formulates issues that can probably influence the future ambitions of the company. Needs, priorities and expectations are identified and put into a report outlining the different options for the enterprise to protect and use its IP.

- Services that raise awareness implicitly: Another way encountered to convey value and effective awareness in a thorough manner is through the use of instruments which one would normally not associate as a typical means of raising know-how on a particular subject. For example, subsidies towards patenting costs might be designed in such a way that the supported SMEs find themselves in a position where they will get advice/consulting on IPR within different stages of the patent filing process. The payment instalments of the German "INSTI SME Patent Action" subsidy are, e.g., linked to different milestones of the patenting process, and the service team accompanies the SME through all these different stages. The subsidy (i.e., the possibility to get monetary support for a costly process) thus acts as a vehicle ("hygiene factor", as one might be tempted to call it) to create an entry point for SMEs in order to receive – probably much more important – "fringe benefits" in the form of IPR know-how (see also section 5.3.7 and annex I, case study nr. 1).

Things to consider when setting up awareness raising support services in the field of IPR

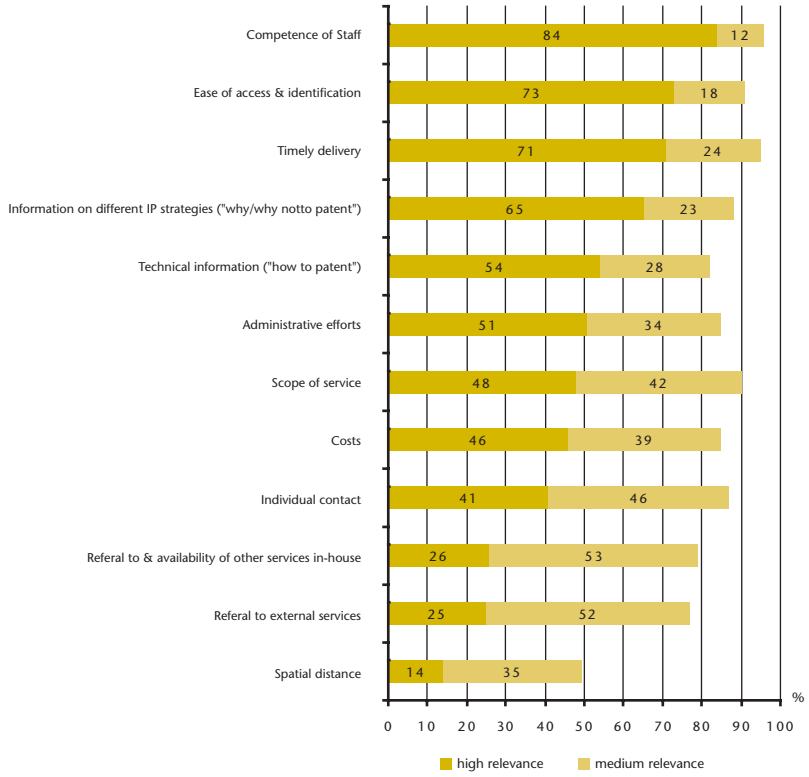
The following points emerged as significant factors influencing the success of awareness raising measures:

- The **level of knowledge needed** to achieve "value" as well as "simple effective" awareness is most likely so high that single one-day events and the typically 20-to-40 page brochures will only be able to tackle a rather small number of issues involved in dealing with IPR. They might suffice to alert SMEs to certain issues, but a **whole range of harmonized events**, **brochures and information material** is needed to address the full spectrum of problem areas. Another important consequence could be that awareness raising measures should thus also lead to further educational offerings (e.g., trainings in the field of IPR), which are however, as noted in section 5.1, rather scarce.
- Similarly, and with respect to the scope of the offerings, awareness raising in the field of IPR includes tackling the subject of **IP management**, i.e., the correct choice and usage of different IP protection/appropriation forms in different business contexts. In this context it is interesting to note that, on average, users of the case study services which addressed awareness raising (e.g., serv.ip roadshows, the "What's the key"-campaign, readers of the LIIP publication, IP Prédiagnosis users and the users of the on-line service PVSOnline of the Danish patent office) gauged the availability of information of "why and

why not to patent" (which refers more to value awareness) to be of more importance than the question of "how to patent" (which covers technicalities of the patenting process and refers more to effective awareness) (see Graph 19). There is thus a definite need to explain to users the **various pros and cons of patents and other IPR tools**, prior to explaining in detail legal technicalities of application/registration procedures.

- The two most important quality factors (in terms of "high relevance" assigned to them by users from the case study services) for IPR awareness services are the **"competence of staff"** and the **"ease of access"** (see Graph 19). The latter refers in particular to adequate marketing and visibility of the service. Services in the US and particularly Australia (see section 5.6.1) have, to this end, been able to brand their activities rather successfully, probably more so than in Europe. The involvement of and networking with other actors in the innovation landscape (e.g., development/technology agencies, or even single technology centres at local levels) are, in this context and for promotional reasons, of particular importance for patent offices creating awareness raising material or organising respective events. Experience gathered in the course of the case study analysis suggests that such cooperation patterns have been aimed for, with varying degrees of success. Overall, as also noted in section 5.3.3, the level of cooperation between development agencies and patent offices remains in many instances an area for improvement. Interestingly, "spatial distance" does not play much of a role for awareness raising measures, not even for roadshows.
- **User segmentation** is an important topic for awareness raising activities. As the case study analysis has shown, IPR awareness raising services are likely to run across SMEs with very differing background knowledge on IPR – some might be complete IPR beginners who only want general information, others

Graph 19 Key quality factors for services similar to case study services which have explicit awareness raising as their main goal, percentage of respondents



Source: User survey, services considered = 5, n = 100

might just look for recent updates and changes with respect to the IPR framework, while again others have very specific questions regarding, e.g., ongoing patenting projects. Against this background, it seems necessary to tailor publications and especially events clearly to specific target groups and communicate corresponding distinctions accordingly: The Australian Smart Start initiative by IP Australia, for example, focuses explicitly at enterprise starters. The "What's the key"-campaign, another example, provided the possibility to participants to pose questions via a website before the actual event was held, allowing it to prepare answers and adapt presentations according to the needs of the customers.

- The value of **case studies** as a means to convey the practicability of the presented information in publications, on websites and events has been underlined in statements of SME users in the case study analysis as well as in statements given by service providers.
- Of course, the **quality of the information/content** provided in the various booklets and on the websites is an important determinant for the success of an awareness raising measure. As the content of most of the awareness raising material has not been subjected to a peer review by IP professionals in the course of this study, little can be said with respect to this issue. Anecdotal statements received by IPR experts suggest that this may be less of a problem, and in this context it is noteworthy to state that the user satisfaction levels of the users of the awareness raising case study services with the quality of the information provided is rather high.
- Very little can be said about the **value of IT tools** in the context of IPR awareness raising, due to difficulties in obtaining reasonable amounts of contact addresses of users or any other types of documents indicating the performance of the applications for that matter. There is, however, some form of consensus on the side of the interviewed IPR experts, who indicate that not too much should be expected from IT tools – while probably useful for creating preliminary and basic awareness on some IPR issues, the limits of entirely computer-based applications are likely to be reached very fast.

All in all, one can say that there are plenty of – mostly valuable – examples which raise awareness of SMEs to a basic level where the firms will be led to believe that IP and Intellectual Property Rights are an area which needs to be looked into further and which is of importance to the operation of a business. The question is whether the plentiful available information booklets and data presented on websites suffice to create the intended value and simple effective awareness level as described by Pitkethly. Most likely, follow-up educational offerings and training might be needed to create such knowledge levels beyond this first very first type of awareness. If such follow-ups do not exist, SMEs might remain stuck with their "initial" knowledge.

A second important issue concerns the marketing and visibility of the awareness raising measures; as described, institutional set-ups are often a limiting factor for a higher user take-up (see also section 5.3.3).

5.4.2 Fee reductions and subsidy services – an alternative to a reformed IPR framework?

The cost issue revisited

As stated in section 3.4, the costs of using IPR are, particularly in Europe, considerable and are frequently mentioned as the main barrier for a wider usage of the system of Intellectual Property Rights by SMEs. This issue applies especially to **patents** – with no Community Patent on the horizon and ongoing debates regarding the introduction of the European Patent Litigation Agreement (EPLA) and European Patent Judiciary (EJA) (see also section 3.2.1), one has to assume that the cost situation is not likely to change in the foreseeable future in the EPO member states.

Taking thus the current IPR system as given, and acknowledging a market failure of the system in which firms find themselves in disadvantageous positions simply because of company size, the subject of patenting costs can still be addressed by policy by offering special provisions to SMEs. Two basic options exist in this respect: First, a general exemption and/or reduction of fees for SMEs related to the patenting process (e.g., in the form of tax exemptions), and, second, the design of subsidies towards patenting costs for a selected target group of small and medium-sized enterprises within the scope of a dedicated support programme or service.

Encouragement of patenting by SMEs through fiscal incentives or general fee reductions

Several countries have chosen the first path and offer **general fee reductions** for patent applications filed by small firms. In the USA, for example, changes in 2004 in the U.S. Code (U.S. Code: Title 35, Section 41(h) (1)) allow for a 50 % reduction on a range of fees related to patenting (e.g., basic filing fees, search fees, examination fees, extension of time fees or maintenance fees, patent issue fees,) for small entities, which comprise small business concerns (usually companies with less than 500 employees), independent inventors and non-profit organisations ("Small Entity Act"). The preferential rates can be obtained simply by filling out the section of the relevant forms for small entities. A similar offering is also available at the Canadian Intellectual Property Office (CIPO) and – since 2000 – at the Japanese Patent Office (JPO). The EPO, however, does not have an equivalent to the Small Entity Act for Europe.

There are arguments for and against the introduction of general fee reductions or tax exemptions for SMEs and their patenting projects:

- On the **positive side**, a general fee reduction for small entities is able to reach out to a large target group (namely the whole SME population, if it is widely known) and can be also rather easily set up. The administration of such measures is – by comparison with subsidies– often simpler, as it suffices to collect the application forms and check if the box entitled "SME" or "small entity" is ticked off and respective evidence for the company size is provided. It can be also considered to be "fair", as no differentiation is made with respect to variables other than company size.
- A **downside** with "simple" fee reductions can be seen in the fact that differences with regard to barriers encountered by different target groups may be relatively difficult to cater to. One might, for example, theorise that the barriers to patenting for SMEs in certain industries are higher than in others; or that micro-enterprises and/or start-ups are much more affected by the high costs of patenting than medium-sized enterprises. Literature sources (Aiginger, Tichy & Walterkirchen, 2006) analysing the effect of fiscal support for R&D activities suggest that fiscal measures should be tailored to specific target groups; there is no reason to believe that this should not apply also to similar measures or fee reductions in the field of IPR – the question is how specific one has to be without making the application process overly complex.
- Fiscal incentives often operate like a **water-can**: Available funds (i.e., "losses" in tax earnings) are distributed among a rather large population of beneficiaries, which means that each beneficiary gets a relatively small share of the available support volume. Given the fact that many patents may be of little commercial value, policy makers might want to consider to make support only available to those SMEs whose patent projects have a high probability of commercial success, and where the cost barrier is a true constraint (i.e., no private investor is found to take the risk). For such cases, it might be better to revert to special subsidy support programmes.
- A crucial point of fee reductions/general fiscal measures is the **extent of the reduction extended**. If it is too low, it will only be perceived as a small rebate which is "nice to have" but does not change the SMEs stance towards

patenting – those that consider the costs of patenting to be in general too high will still refrain from using patents, and those who find it worthwhile will continue to use patents as always and utilise the preferential rate as a gift (i.e., the latter group would thus to a large extent reflect "deadweight losses"). If, on the other hand, the reduction is too high one might run the risk that SMEs will hand in patents of lower quality, just "to give it a try". This would add to the already high strain of the patent offices which are confronted with soaring patent applications.

- The possible issue of a **soaring number of patent applications** by SMEs if fees are generally reduced has also to be seen in the light of operational considerations: In the specific context of patenting, the fees retained are used to cross-subsidise the examination process of the patent applications (Harhoff, Engel & Möschel, 2007). A thorough examination process can be considered crucial for the quality of a patent granted. Many experts interviewed point to the higher quality of patents granted by the EPO as compared to US patents and see this as an asset for Europe; it is said that the higher quality is due to more stringent examination standards than in the US. The reliance on high-quality patents means that legal proceedings which question the validity of patents (and which – if they increase in number excessively – will most likely inhibit innovation activities) are less likely to occur. In this context, Harhoff, Engel & Möschel argue that lowering the fees for SMEs – and financing this by taking funds away from the examination work – would endanger the quality of the examination process and at the same time lower the barrier to questionable patent filings.
- **Steering possibilities** exist with respect to the many fees encountered during the patenting process. Policy makers might decide to lower only specific fees or to provide a general reduction for all fees.

Given the arguments presented above, one can conclude that general reductions of fees or tax exemptions are a possible way of tackling the cost barrier within the current IPR system, if they are implemented the right way: They should be tailored as much as possible to the target groups (without making the application process too complex), and they should not be financed at the expense of the examination work. Deadweight losses – similar to tax provisions within general R&D support (Aiginger, Tichy & Walterkirchen, 2006) – may be considered acceptable, if the preferential rates are set at a level where the cost barrier is more or less abolished, but where the SMEs still have to contribute own funds to an extent that the amount of firms which try to make a run with low-quality patent applications is minimised.

The many flavours of subsidy services

Besides general fee reductions (and/or tax exemptions), there is also the possibility to set up support services or programmes that extend subsidies toward patenting costs to SMEs. A number of countries have implemented such measures, and an analysis shows that the mode of operations differ considerably along the dimensions of the phase of IPR usage targeted, the targeted user group or the type of costs/fees subsidised. Examples of such subsidy schemes include the following services:

- INSTI SME Patent Action (GER): The subsidy offered reimburses costs related to **first-time patent-applications** only. The maximum amount of subsidy amounts to € 8,000, paid out in different instalments which are linked to different milestones in the patenting process and offered in five distinctive "service packages". The subsidy can, for example, be used to cover the costs of patent attorneys or for international applications (see annex I, case study nr. 1).
- The Intellectual Property Assistance Scheme IPAS, offered by Enterprise Ireland (EI) (IRL): The funding scheme is a **highly selective scheme**: The experts at EI must be convinced that the invention is capable of patent protection, technically feasible and with plans for a commercial exploitation. If granted, the subsidy is to be paid out to the patent attorney undertaking the patent

protection service on behalf of the SME. Normally, the subsidy can amount to € 30,000. Companies that are considered to have a high growth potential may be eligible even for a higher level of support (up to a maximum of € 150,000) (see annex I, case study nr. 9).

- Promotion of Industrial Property by SEGAPI (ESP): This type of subsidy targets SMEs from **a distinctive region** in Spain, namely Galicia. Companies registered in this area can apply for this subsidy which covers the costs of IPR-related activities, among which are also the costs for patent applications. The subsidy is not limited to patents but may also be used for trade marks. The subsidy may cover up to 70 % of incurred costs with a ceiling set at € 36,000 (2006; 2005: € 30,000). As survey results show, the service mostly attracts SMEs which are involved in trade mark registration (see annex I, case study nr. 13).
- Technology Network Service – 1er brevet by Oséo innovation (FRA): Among other services, the Technology Network Service offers the so-called "First Patent" service (1er brevet). This service **subsidises consultancy work** by an IPR expert which is related to the filing of a patent. A ceiling is set at € 5,000, which corresponds to about five working days. The subsidy is paid directly to the consultant in charge. As in the case of the INSTI SME Patent Action, only first-time patentees are allowed to take advantage of the offering (see also annex I, case study nr. 15).
- Finnish foundation for inventions (FIN): The Finnish Foundation for Inventions extends subsidies for paying the costs related to patenting, later-stage product development and commercialisation. The subsidy incorporates a **conditional re-payment clause** to the foundation depending on the success of the project and on the revenue received from it by the inventor. The amount to be refunded is limited to the amount of support granted by the Foundation, i.e. the subsidy is interest-free. If the invention fails to achieve commercial success, the inventor is under no obligation to pay the subsidy back. The average amount of subsidy is € 10,000 (see annex I, case study nr. 12).

In analysing the subsidy services described above, one first and important observation concerns the target groups: On one hand there seems to be a class of services which aim explicitly at SMEs which have not patented before (INSTI SME patent action, TNS 1ere brevet). On the other hand, a second class of services focuses on SMEs (regardless of whether they have a patent history or not) whose patenting endeavours are especially promising commercialisation-wise. The latter services are, as a consequence, much more selective and, on average, provide higher funding volumes. Services such as the INSTI SME patent action have, by contrast, more of an **awareness raising function built in**: The subsidy seems to constitute a hygiene factor and a catalyst for the delivery of know-how concerning IPR and its importance for the businesses.

Graph 20 shows the combined behavioural additionality of the INSTI SME Patent Action, the French "1er brevet" service and the Irish IPAS scheme – all services which extend financial support solely for actual patent filings (i.e., they subsidise cost incurred in the patenting process only).[18] The figures clearly reflect that these subsidy services seem to have the most effect in know-how related areas (awareness, general knowledge management know-how and patent knowledge in the business environment).

Especially in the context of the French and German services – which address SMEs that did not patent before – one could, if an increase of patenting activity was solely aimed for, be tempted to interpret this share as a "failure rate" of the service. The increased usage levels with respect to other IP protection methods and the

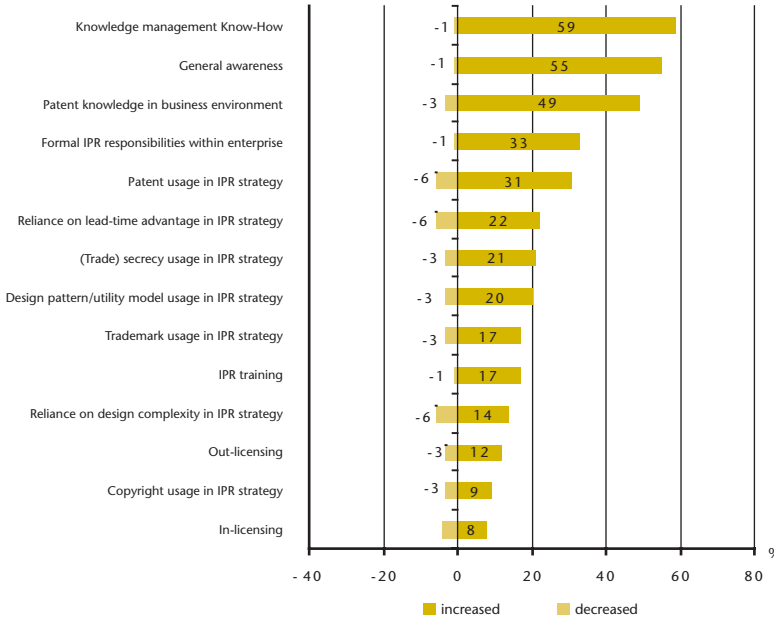
[18] It has to be noted that in the course of the case study analysis other services which offered funding for patent applications were also scrutinised. However, subsidies were in those cases also available for purposes (technical feasibility studies, etc.) other than patenting projects, and with the questionnaire given it was not possible to distinguish between the different types of subsidies/grants provided.

increased know-how surrounding IPR point, however, to a situation where in many instances service beneficiaries derived know-how for using instruments other than patenting, and appropriated this knowledge by changing their general attitude towards IP protection.

Graph 21 shows the aggregate additionality of the subsidies of the three services (INSTI SME Patent Action, TNS "First brevet", IPAS) in terms of projects that would not have been pursued without the financial funds granted. Pure additionality effects (i.e., the patenting endeavours would have definitely not been carried out without funding from the service) amount on average to 13 %; pure deadweight losses (the patenting project would have been carried out without any change/ modification, regardless of the existence of the service) are recorded at 20 %. For the remaining 67 %, the subsidy had some form of catalyst effect – the patenting projects were either executed faster or to a larger scope (e.g., larger geographical coverage) than before.

Taking the three analysed services as references, one could postulate that, as a rule of thumb, the introduction of a financial subsidy for patenting projects would likely create patents that would not have existed without support in about 1 to 2 out of 10 supported projects; around three out of ten supported companies could be expected to place more emphasis on patents, resulting from using the service. However, as has been shown, the subsidy services analysed do not only have a cost reduction function, but work on multiple levels which have to be taken duly into account when interpreting the performance of services of this type. The respective and resulting "fringe benefits" arising often from the fact that the subsidies are also part of an integrated portfolio of IPR services with rather strong information/ consulting elements could prove to be a key success factor. This could be more important than one would assume at first glance, given the "substitution of cost" function, as the services are able to induce lasting changes in the whole attitude of the supported SMEs towards IP appropriation/protection.

Graph 20 Combined behavioural additionality of subsidy services which offer financial support for patent applications, users in %



Source: Austrian Institute for SME Research, services considered = 3; n = 143

5.4.3 A single white rose in a bucket of red roses: The case of embedded IPR services

Embedded IPR services are defined for the purpose of this study as services which operate in the field of intellectual property rights and are part of portfolios of services which do not directly aim at IP-related issues. Embedded services are thus IPR offerings within other non-IPR focussed services. In the course of the benchmarking study, the following distinguishable generic types of such embedded offerings emerged:[19]

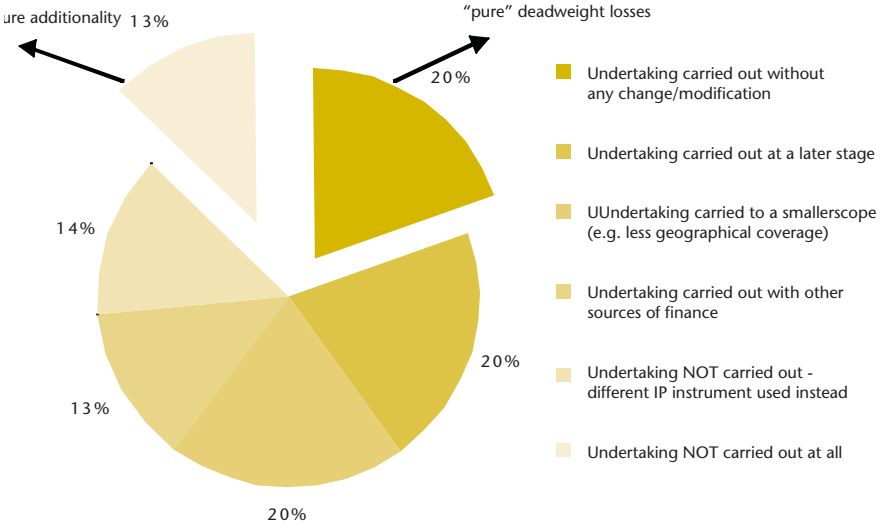
- IPR support given to SMEs in **technology centres** or **incubators**
- IPR support provided within the framework of a **thematic (R&D and innovation) support programme** (which is usually also tied to a technology field, most prominently biotechnology)
- IPR support for SMEs within the scope of a **technology transfer programme from university to industry**
- IPR support given to SMEs **within general innovation and R&D support programmes** (e.g., programmes where subsidies and grants extended for R&D/innovation support programmes may also be used for patent filings)

These types of services have to a certain extent been subjected to the identification and benchmarking process in the scope of the underlying study, but it has to be noted that they were – due to the characteristics of many of these services (either small scope; difficulty in assessing the extent to which SMEs are actually targeted; or lack of clear border lines between the IPR and other service parts, making it difficult to analyse the IPR elements in an isolated manner) – not the focal point of the study design. Nonetheless, such services can be in many ways considered to be essential for delivering IPR know-how to SMEs.

Technology centres and incubators

Technology centres and incubators are mostly publicly funded support institutions operating on a regional level that aim (i) to support the entrepreneurial process and

Graph 21 Combined additionality of the subsidies provided within the scope of services which subsidise costs related to patenting, users in %



Source: Austrian Institute for SME Research, services considered = 3; n = 143

[19] Beyond the archetypes listed below, one could also consider a single IPR service or support programme offered, for example, by a development/technology agency or a chamber of commerce as 'embedded', if it is seen with respect to all other services offered by these institutions; the borderline between what constitutes an embedded service and a single/isolated service is thus blurred. For the sake of better clarity, the benchmarking study refers to the term embedded services if embeddedness can be seen at the individual service/programme level.

(ii) to help increase survival rates for innovative start-ups. For this purpose, incubators offer a range of services such as provision of office space and/or laboratory facilities with the necessary infrastructure, advice on how to set-up and manage a company or networking services. A part of the offered services may also deal with IPR.

The benchmarking study results indicate – in line with findings from other studies[20] – that most technology centres, if they offer IPR support services, do so mainly **through referring to outside IPR experts** (e.g., in the form of "open days" with patent attorneys). This limitation to a signposting function is mostly determined through size constraints – most incubators simply do not have enough manpower to offer in-depth consulting on IPR issues in-house; furthermore, the scarcity of staff trained in IPR matters has to be noted again (see also section 5.3.4).

While the scope of the IPR services provided is thus consequently rather small, the significance of the support provided should not be underestimated: First, because many of the SMEs supported operate in business environments where patents play an important role (e.g., high-tech industries such as bio-tech or ICT hardware sectors) and, second, because incubators have, more than centrally offered support services, direct contact to the entrepreneurs/tenants on site. Technology centres can thus also be important carriers and distribution channels for information on larger IPR support programmes.

Thematic programmes

In section 5.1, it was noted that most services which offer support to SMEs in the field of IPR are not explicitly focussed on certain technology fields or industries. Thematic programmes can be defined or differentiated from other programmes by exactly this trait – they offer a broad range of support to actors (universities and/or companies) in a specific technology field (frequently in the fields of biotechnology or nanotechnology).

Services offered within such a programme may include, for example, the support of large and long-term cooperative research projects in academia, grants to single researchers (e.g., for writing their doctoral theses and/or mobility grants), networking activities or promotional activities for the technology field as whole (e.g., the organisation of "summer schools" for high school students). **Advice on IPR** is often a **service element**, too, not the least because most of the technology fields addressed operate – similar to incubators – in an industry environment where patenting is of special relevance.

IPR support is made available by these kinds of thematic programmes as a resource on a stand-by basis for all involved parties (among which may also be SMEs), and in many ways similar to that of technology centres. Often, the service consists of referral activities based on contractual relations with IPR specialists (e.g., patent attorneys); sometimes a patent attorney is even employed directly by the programme. Patent attorneys interviewed in the course of the underlying benchmarking study and working for such programmes stated that offering IPR counselling within a thematic programme is a sensible approach, if the actors addressed are rather new to the topic of IPR. Once the IPR know-how matures, this type of support has, however, its limitations.

Both with respect to **incubators/technology centres and thematic programmes**, one can conclude that their **closeness to the SME target group can be considered the biggest asset** and make these type of services an

[20] A study by WIPO (WIPO, 2003b) indicates that, while 60 % of 63 interviewed incubators in Europe had a person in charge of IPR, most offered only basic advice, and tenants were usually referred to other institutions (with which often different types of contractual agreements existed). For example, only 12 % of the incubators assisted directly with the drafting of patent filings; by contrast, 71 % referred to external partners. Issues related to enforcing IP rights, to negotiating license agreements and to valuing IP were, on average, handled in a similar manner. More direct help from the incubators seems to be available with regard to advice concerning confidentiality agreements and trade secrets and – surprisingly – with patent information searches: 90 % of the incubators would have patent searches conducted on behalf of the tenants, and 41 % would even conduct such patent searches in-house. A size effect – the larger the incubator, the higher the chance to find broader in-house IPR support – was, as could be expected, noted.

important **carrier in the field of IPR support**. Bearing limitations regarding resources in mind, embedded services are mostly in a well-defined position to complement larger, national offerings, mainly by external referral and signposting activities on a regional level.

5.4.4 Patent database and information search services

Patent database search services are an important pillar of the public IPR support system for SMEs in a variety of countries (e.g., in Austria, The Netherlands, Denmark (over the website of the Danish Patent Office), in Italy or in Germany). In very small countries, such as Liechtenstein, patent search services offered by specialised departments of general-purpose libraries constitute even the main type of public support service available for SMEs in the field of IPR. Against this background, it seems important to take a closer look at the specific goals, the modes of operation and key success factors for such services.

The usefulness of patent information and its under-usage by SMEs

The main **rationale** behind offering patent database search services is, on the one hand, seen in the fact that unnecessary and redundant R&D can be avoided. According to the Austrian service serv.ip, for example, the patent office estimates that around € 150 mio are saved each year, because companies find out that what they were to research and/or patent was already invented. On the other hand, using patent information may also serve a number of other functions: In a study conducted by Hall, Oppenheim and Sheen ten motivations to use patent information–in addition to the avoidance of double research costs–were identified (Hall, Oppenheim & Sheen, 2003):

1. For purely technical information/educational purposes
2. For finding out if something is patentable
3. For competitive positioning (in order to stay informed about what competitors do)
4. To check for possible infringement (i.e., to check whether another company infringes a firm's patent rights or whether the firm infringes another company's patent rights)
5. For finding new areas to get into and/or opportunities for licensing in
6. For "inventing around" other patents
7. For costing/pricing intelligence, in case information on production and/or operating costs can be derived from the patent filings (which is said to be often the case)
8. For problem solving (in order to get ideas for solving similar problems in-house)
9. For information about manufacturing processes (processing generally entails a good deal of tacit knowledge which a company, even if it holds a patent, will try to keep to itself. Nonetheless, a lot of information about such processes can be found in patent databases)
10. For improving the success rate of patent applications

Despite of the benefits described, the – sparsely available – empirical data on this issue suggests that SMEs hardly use patent database search services. Evidence to this end has been collected by the Hall, Oppenheim & Sheen study. The study investigated the use of patent information with 390 SMEs in patent-affine industries in the UK. The findings indicate that 44 % of the enterprises never use patent information and 80 % of those companies that carry out searches do so only once a year or less frequently. A size effect was observed, i.e., larger firms had a higher propensity to conduct patent searches than smaller ones.

Within the scope of the underlying benchmarking study, the **usage of information channels** utilised by users of IPR support services for innovative undertakings

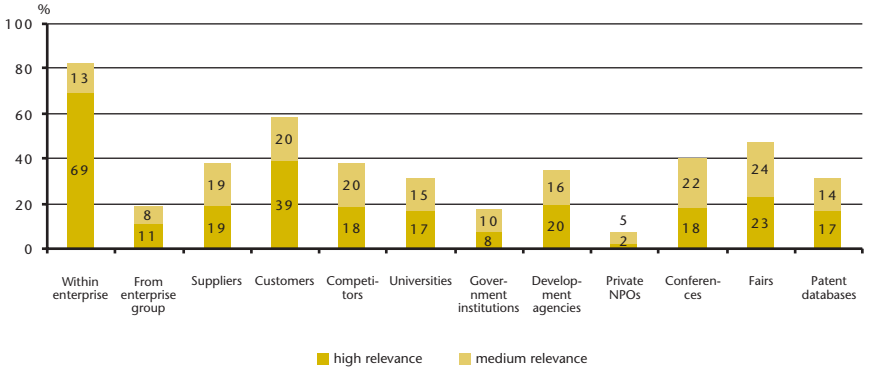
(including patent information) was also enquired into. The results are shown in Graph 22. They illustrate that even for firms which are using public support in the field of IPR (and thus are also more exposed to information promoting the usage of patent database services) patent information is not a primary choice as regards sources of information for innovation projects. The most important of such sources lie "within the enterprise" or come from "customers". These information sources are of high relevance for 69 % and 39 % of the users of IPR support services, respectively. Patent information from databases is only of high relevance for 17 % of the companies, and of medium relevance for another 14 %. Yet, these shares are comparable to those for universities (which 17 % of the respondents deem highly relevant, and an additional 15 % moderately relevant as a group of institutions from which to get ideas for innovations).

Users which specifically use a patent database search service such as the express searches of serv.ip (see annex I, case study nr. 8) or Innovation by patent Information (IOI) (see annex I. case study nr. 4), for example, naturally place more importance on patent information: About 50 % of the users of the IOI service assert that patent information is of high or medium relevance to them for innovation projects, as do also about half of the serv.ip users interviewed.

Based on the results presented above, it can nonetheless be said that a significant number of SMEs which could make good use of patent information do not utilise patent databases. The reasons for this are, according to expert opinions and literature sources, described as follows (Hall, Oppenheim & Sheen, 2003):

- The **lack of knowledge** on how to access the patent system and how to perform patent searches on the side of the SMEs.
- The **complicated language of patent filings** which refers especially to the legal terminology used (this factor was specifically underlined by the interviewed experts).
- The lack of time on the side of the SMEs to get to know how to perform patent scans, especially if they are to be done on a continuous monitoring basis.
- The **costs** involved (e.g., for training staff or for the necessary manpower to screen the databases)
- The **overload of information**. In this context, the Hall study describes the situation of a firm in a particular industry, where an estimated 10 patents per day are granted worldwide. Under such circumstances, over 3,000 patent documents should be ideally reviewed every year, which is – without proper pre-selection and prioritisation – impossible to handle by a small enterprise. This factor was also very much underlined by the interviewed experts.

Graph 22 Relevance of selected sources of information used by companies utilising IPR support services for SMEs for innovative projects, percentage of service users *)



*) Multiple answers allowed

Source: User Survey, Services considered: all (15); n = 630

The **barriers** described above point to the fact that considerable expertise is not only necessary in terms of how to carry out patent searches, but especially with regard to the interpretation of the results. The situation is, according to expert opinions, further aggravated by the fact that the patent classification systems becomes more and more sophisticated, while at the same time the amount of information stored increases significantly, too.

As a consequence, many SMEs which recognise a need for conducting patent searches revert to an intermediary who conducts the patent scans on behalf of the company. Such intermediaries may be private consultants or public support services; in most instances, however, patent attorneys seem to be contracted for this purpose (Hall, Oppenheim & Sheen, 2003). While probably sensible at first sight, this approach might in itself constitute a barrier to using patent information, given the rather high day and hourly rates of patent attorneys. As many SMEs would be able to conduct a considerable share of the searches by themselves, Hall et al. argue that many firms *"…do not seem to have learnt the knack of using a patent agent constructively"* (Hall, Oppenheim & Sheen, 2003: 151).

By contrast, some patent attorneys interviewed even argued that IP departments in large firms increasingly employ patent attorneys who are specialised in the area of patent classification systems and want them only to conduct patent searches. This implies that the information level in this area may have increased to a point which exceeds the know-how of a "regular" patent attorney, such as a self-employed patent agent who acts as a one-stop shop regarding IPR for SME customers. Important consequences may arise because of that for litigation cases. Anecdotal evidence suggests that many possibilities to fight claims (e.g., where a company accuses an SME of infringing its patents) by conducting prior art searches and finding evidence that the patent should not have been granted in the first place (which is often a successful strategy), are forgiven; instead, many patent attorneys assume that the defending SME knows its business and patent environment and build up the case from this point.

Modes of operation of publicly funded patent database search services

The market failure with respect to patent information usage by SMEs is addressed on a national level mainly by three types of public institutions in Europe: (1) special **"patent information" departments of libraries** (ones with a general purpose or libraries of technical universities), (2) specialised **patent information centres and points** (which may have started out themselves or as part of a library) and (3) – increasingly – the **individual national patent offices**.[21] For many national patent offices, patent search services seem to be, as a matter of fact, key building blocks in their attempt to establish themselves as service providers for SMEs. This development is, however, not undisputed as it may lead to the displacement of private IPR service providers (this issue is dealt with in more detail in section 5.5).

While the goals of the services are similar, i.e., create awareness of IPR and especially the utility of patent information and increase the knowledge of SMEs with respect to patenting activities in their business environment, the modes of operation for such services differ significantly:

- Patent information centres usually operate on a **stand-by basis**, i.e., interested parties may come in person to the premises of the offices and read through documents, CD-ROMs and other available material. Some of the larger patent information centres in the PATLIB network have widened their information offerings to also include information on designs and trade marks, to actively disseminate information (brochures) on the usefulness of IPR or to organise open

[21] In the context of the libraries and patent information centres, the PATLIB (PATent LIBrary) network has to be mentioned. Established by the EPO and national patent offices, the PATLIB network links patent information centres, accredited as such by the national patent offices, in all member states. The aim of the network is to improve communication and collaboration among these centres and to promote patent awareness to the general public. The EPO and the EU fund these centres to an extent, and the EPO also provides services such as training of staff. The PATLIB network as such is, because of being a supra-national initiative, not part of the analysis. However, individual PATLIB centres were scrutinised, if they were of special importance for the IPR support system in a country or region (especially in smaller countries). Currently, the EPO counts about 300 PATLIB centres (data of 2004).

days together with patent attorneys (where interested parties have the possibility to ask questions); sometimes, trainings are offered on how to use patent information (see German Patent Information Centre Stuttgart; see annex I, case study nr. 2). These services can be characterised by the fact that access to search facilities are offered, while the actual search is mostly conducted by the customer. An interesting example of how patent information centres can be further enhanced by combining national and EU-wide programmes can be found in Italy with the INFOBREVETTI service (see text box below).

Infobrevetti – The Italian network of patent information points and patent libraries as an example of an attempt to enrich the PATLIB system on a national level

INFOBREVETTI is a network – managed by Unioncamere, the Association of the Italian Chamber of Commerce–which links together all outlets and departments of the Italian Chamber of Commerce dealing with IPR, as well as the Italian PATLIB Centres and the similar PIPs (Patent Information Points). The network is basically centred around a website (http://www.infobrevetti.camcom.it) which has the overall goal to promote the development of IP knowledge in Italy. More specifically and with respect to SMEs (the most likely main target group given the background of the Chamber of Commerce running the service), it is sought to help SMEs in utilising patent information and referring them to the services of the individual Patent Information Centres. Infobrevetti encourages SMEs to use the patent databases themselves and tries not to act beforehand as an intermediary conducting searches on behalf of its customers.

The network provides different types of information services. Some of them, basically general information services, are free of charge. More detailed and sophisticated services are, however, sold. One of the main instruments employed besides the webpage is a newsletter informing about trends regarding patent information and patenting activities. The key strength of the service is seen in the national and network character, while the Chamber of Commerce can run, using its local offices, PATLIB Centres and PIPs in almost any relevant region of Italy. It has been observed that patent application activities have increased more in regions where PATLIB Centres and PIPs have been promoted through Infobrevetti than in regions where such centres and information points are absent.

- The **information technology** now enables many patent information databases to be searched online. National patent offices are often in the process of redesigning their web pages to include such search possibilities (e.g., the Danish patent office, see annex I, case study nr. 14) – this is done also in response to the demand expressed by SMEs and many IPR experts that cheap, simple and accessible ways of conducting patent searches are needed. The EPO also allows for online searches in a variety of its databases.
- One can distinguish between **low-level patent information** services and **high-value information services** (value added information services) (Lagemaat & Frackenpohl, 2005). Low level search services can be defined as rather "crude" search services, where the results of the search are not interpreted, filtered and/or ranked. By contrast, in value added high-level services, the service provider also undertakes to qualitatively interpret the results of the scan and gauge the relevance of the documents. While patent information centres are more concerned with low level services, it seems that the national patent offices are moving with their service offerings in the direction of value added services. A case in point is the express search services of the serv.ip partial legal entity in Austria (see text box below).

serv.ip: Example of a service developed by a subsidiary of a national patent office and focussing on patent database searches

Serv.ip is the name given to an outsourced unit of the Austrian Patent Office whose main task is to provide patent database search services, for the most part to SMEs. Search services are offered using a range of standardised services. With the product "Expressrecherchen" (express searches), serv.ip undertakes to deliver the results of a prior art search within four weeks for a unified price of € 1,320. More sophisticated and tailor made searches are also possible. In addition to search services in the domain of patents and trade marks, serv.ip also offers trainings courses and translation/copying services.

The legal form of the service is that of a "partial legal entity", meaning that it has to operate like a private firm and to at least cover the costs of operation. The status as a "partial legal entity" allows it to separate the sovereign character of the patent office as an official institution and the less impartial and more customer-benefit focussed approach of a service unit. In this context, serv.ip can also rid itself of bureaucratic structures necessary in a public administrative institution. Yet, serv.ip can still make use of synergy effects with the parent patent office by residing within the same building.

Another example is that of the initial set up of the IOI programme in the Netherlands:

IOI: Example of a patent database search service, where a technology/ development agency cooperated with the national patent office

Within the scope of the programme IOI (Innovation by patent information, Innovatie door Octrooi-informatie) the Dutch Patent Office and a technology/ development agency (Syntens) teamed up to offer patent database searches to SMEs. The service aimed at educating SMEs and transferring knowledge and skills enabling SMEs to find information on patents. Originally, the service focussed on performing periodic (custom made) patent scans for users and sending the "front pages" of the selected patents to them. After a commercial patent agency's complaint with the Netherlands Competition Authority (NMA), this activity was terminated on 24/02/2004.The measure afterwards offered information services, training programmes, tailor made advice services, referring entrepreneurs to specialised commercial parties, and providing co-funding to hire commercial parties in support of using IPR. In principle, IOI, from 2004 on, showed SMEs how to conduct a "first-time" patent search and referred them subsequently to commercial parties, notably patent attorneys. The programme as such does not exist any more, but has instead become part of daily operations at Syntens and at the Dutch Patent Office.

Performance and key success factors for patent search services

Three patent information search services were subjected to the user survey carried out in phase 3 of the research exercise. These search services were (1) Innovation by patent Information (IOI) (see annex I, case study nr. 4), (2) serv.ip (see annex I, case study nr. 8) and (3) German Patent Information Centre Stuttgart (see annex I, case study nr. 2) The results of the survey give insight as to what can be expected impact-wise from such services and what issues customers deem as important quality factors for the establishment of similar offerings. Though the design of the services differs a lot, there are common points observable with all three services.

One first and striking observation concerning the **user-take up** of the analysed patent information search services is that with two of the three services (the PIC

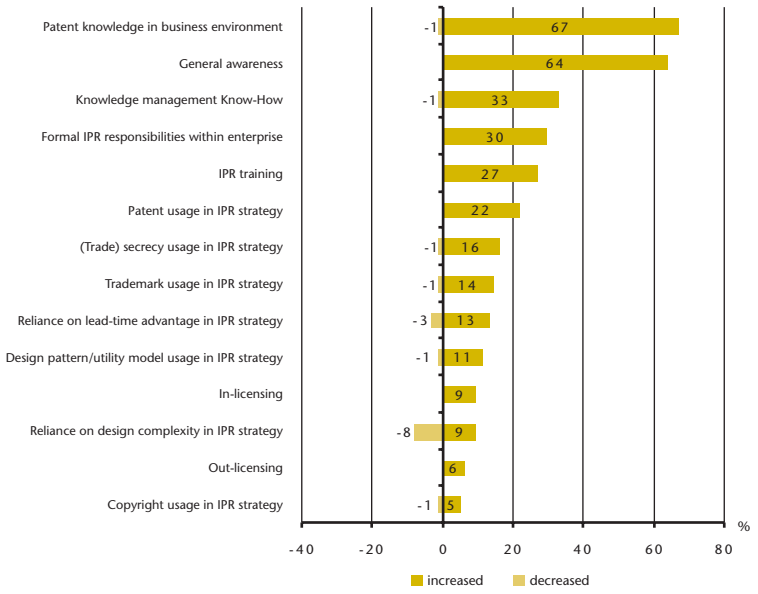
Stuttgart and serv.ip) a high share of the supposed SME user base consists of patent attorneys (determined by the address material).[22] This somewhat surprising result – given the supposed focus on SMEs – can be attributed to two factors: First, it reflects the intermediary role of patent attorneys who conduct searches on behalf of SMEs. This also underlines the identified need of external expert interpretation of search results. Second, and this reason is given mainly by the providers, in order to ease administrative burdens customers do not need to register with the service providers, for example, when entering a reading room. Thus, heavy users with a multitude of search needs are more likely to have registered at some time, and such heavy users are more likely to be patent attorneys and representatives of IP departments of large firms.

In terms of **performance**, the services seem to have achieved their goals to a fair extent. Foremost, they increased the patent knowledge in the business environment for 67 % of their users, increased general awareness for 64 %, and improved knowledge management know how for about a third of the user base (see Graph 23).

Interestingly, patent usage in the overall IPR strategy increased only for 22 %. At the same time, many firms now pay more attention to the usage of informal protection mechanisms (such as trade secrets, which has increased for 18 % of the services). Noteworthy also is the change of attitudes towards reliance on the strategy of complexity: About 9 % rely more on that strategy, while another 8 % rely less on it. This result highlights the very individual impact search results can have on a company, depending on its business and patent environment, and underlines the argument that no priori emphasis should be given to patenting or any other IPR protection strategy for that matter.

Graph 24 shows how users of patent information services gauge the importance of a number of factors for the set-up of search services similar to the ones that were investigated in the course of the case study analysis. Interestingly, the factor that was considered most important was the **ease of access** and **identification** (for

Graph 23 Changes of attitudes or usage levels and/or attention given to certain IPR related subjects, resulting from using patent search services, percentage of users of patent information services



Source: User survey, services considered: serv.ip search services, IOI and PIC Stuttgart, n = 95

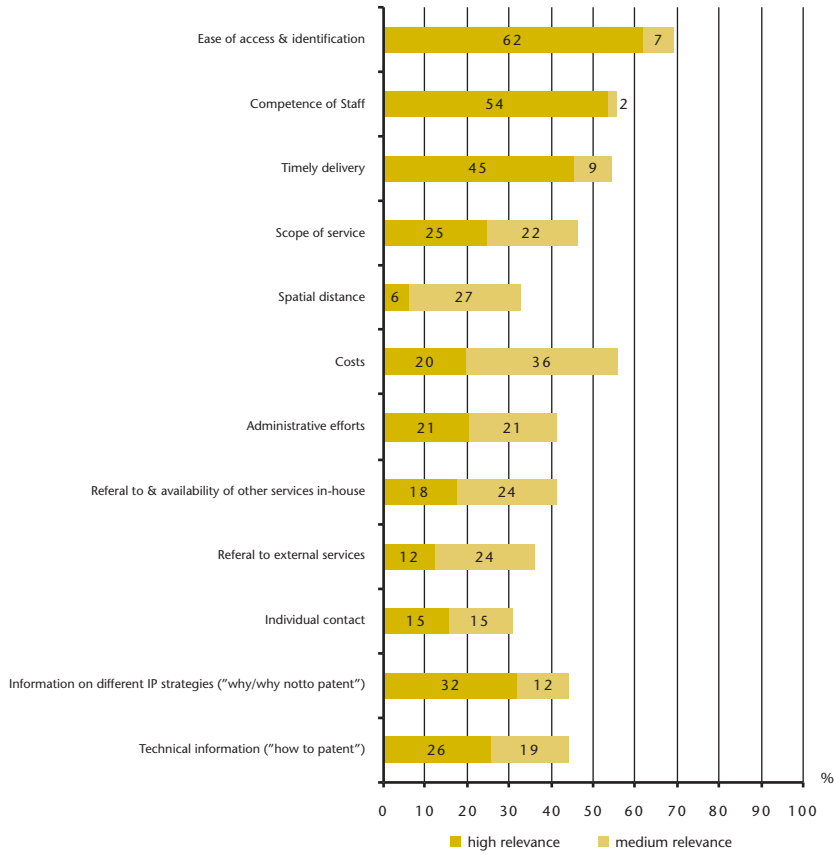
[22] In the case of IOI, only SMEs are eligible for support.

62 % of high relevance, and for another 2 % of medium relevance). Against the background that many service providers (including serv.ip and the PIC Stuttgart) contemplated that the visibility of the service to SMEs and respective marketing activities are areas in need of improvement, this result can be seen as a strong indication that marketing needs should be especially addressed when setting up patent database search services.

The second most important factor is seen in the **competence of the staff**, which 54 % consider to be of high relevance. This is in line with the findings that staff qualification is a key issue when setting up IPR support services in general, due to the complex cross-disciplinary nature of the subject. In the context of search services it might be assumed that SMEs expect personnel to be fully familiar with the search tools and the database records available; furthermore, it can be expected that help with interpreting search results is aimed for, at least to a certain extent. However, as the scope of the service offerings and referral activities are not among the higher rated factors, it can also be assumed that the expertise of the staff is expected to focus mostly on the very subject of patent information; a further extension of the service offerings, i.e., to cover training, educational and consulting needs beyond those possibilities already offered, is thus not anticipated.

This does not mean that the introduction of such value-added services should not be undertaken; the relatively high share of users who believe that dissemination information on "why and why not" to patent is important (for 32 % of high relevance and for another 12 % of medium relevance) points to a need in this direction. It may be suspected, however, that adding service offerings might also

Graph 24 Relevance of key quality factors for the design of patent database search services similar to the ones investigated in the good practice analysis, aggregated perceptions of user of patent search services



Source: User survey, services considered: serv.ip search services, IOI and PIC Stuttgart, n = 95

change the structure of the user group and attract SMEs which would otherwise not use patent search services.

Another significant factor for this type of IPR service is **timely delivery**: 45 % of the users assert that this aspect is highly relevant, another 9 % see it as moderately relevant. The importance given to timely delivery is due to the prioritising concept of IPR: For example, whoever files first (in Europe, Japan) or whoever invents first (USA) is the one who will be granted the patent. But also in litigation cases or stop and go decisions regarding R&D projects, deadlines have to be adhered to. There is of course a trade-off between conducting a very thorough patent scan and receiving results as early as possible. And, as with many such trade-offs, the law of increasing marginal costs and decreasing marginal utility applies. Anecdotal evidence suggests that some SMEs may mitigate the losses incurred by the described trade-off by contracting two separate parties to conduct a patent search:

> *"For us, it is vital to get patent information as fast as possible. If a patent search covers 80 % of the ground in a certain amount of time, it is for us of more use than a search which covers 99 % but takes forever. In practice, we contract two service providers to perform a scan within a specified time period. We then compare the results, and the combined findings are usually much more informative than if we would have contracted only one party and given it more time to perform its task."*
> *(User survey: serv.ip SME user)*

With respect to the remaining key quality factors scrutinised, two things are in particular noticeable: First, costs are rather low on the priority list of the users. Second, spatial distance is given low significance.

This **reaction to costs** can be interpreted as meaning that as long as the costs are not excessive, and the quality of the search results is reasonable, SMEs would be willing to pay a certain amount of money for good patent search services. As other studies have underlined the importance of low cost patent search possibilities for SMEs (see Hall, Oppenheim & Sheen, 2003), these results may sound contradictory. It should be noted, though, that the user survey specifically addressed existing and probably experienced users of patent search services. Such users might have overcome an initial anxiety about costs and gained a different perception of the cost/benefit ratio. In addition, it can be expected that the costs experienced for patent attorneys acting as intermediaries for SMEs may play a role in the SME views, too (i.e., patent searches may be considered costly as the patent attorneys who conduct searches on behalf of SMEs cost a lot). This perception is also in line with the findings of Hall, Oppenheim & Sheen (2003) who state that *"patent attorneys may…present a professional barrier rather than an enabling function."*

The **reaction to spatial distance** is in line with the findings for other IPR support services. It can be taken as a clear indication that it is likely unnecessary to establish patent database search services in every locality. It seems very likely that successfully implemented user friendly online search possibilities will even lower such a demand in the future.

Taken together, it is difficult to assess whether patent information services should be the main vehicle to foster IPR usage by SMEs. Most likely, though, they should be preceded by offerings educating SMEs on subjects of general IP and IPR management. In such an environment patent search services would be an element of the IPR service portfolio and not its main pillar. Having said that, it seems that some level of knowledge on the benefits and the mechanics of conducting patent searches should nonetheless be established in SMEs.

Besides the key quality factors described above, one important issue needs to be addressed: Namely, to what extent SMEs can conduct patent searches by themselves and at which point additional help with interpretation should be provided. Future technologies (such as semantic patent analysis) (Walter, Brusch &

Hartung, 2007) may make it easier for SMEs to perform patent scans on their own. In the meantime, SMEs who decide to use the services of a patent attorney should make sure that they chose a patent attorney with profound technical and legal know how in the SME business environment.

Policy makers should be aware that by introducing value-added search services they may enter the theatre of private services providers (patent attorneys and others). It appears that public provision of search services has the potential of conflicting with private-sector provision of these services, but, at the level of the patent attorney, also offers complementarities. These issues will be dealt with in the next section.

5.5 The interaction between private and public support services

The underlying benchmarking study set out to analyse the performance and effectiveness of the system of public support given to SMEs in the field of IPR on a national and regional level – **private sector offerings** were thus not directly subject to scrutiny. Notwithstanding this, it seems necessary to comment on existing private services and how they do (or should) interact with public measures. In this context, it should be first recalled that public intervention should ideally only be carried out if a market failure can be identified. As has been shown in the preceding chapters, the existence of a market failure can be argued, as SMEs may face more barriers in putting their IP to use than large companies.

However, if services offered by the private sector are up the task and meet the needs of small and medium-sized firms to the full extent, the introduction of public measures would only lead to unwanted displacement and crowding out effects.

The following discussion relies to a large extent on anecdotal evidence, expert opinions gathered through the course of the study and some literature sources (Lagemaat & Frackenpohl, 2005; ACIP, 2003; Ebersole, 2003). As a consequence, it will not be able to answer the question on an empirically firm basis, as private service offerings have not been under scrutiny in the scope of the underlying study. Yet it should provide a starting point for further discussions and analysis.

The private sector of IPR service providers seems to mainly comprise two groups of professionals/companies: **patent attorneys** (resp. patent agents) and **commercial patent information providers** (which includes companies such as Derwent, Europatent, INCOM and IFI Claims). These commercial patent information providers run added-value search services and operate self-designed databases with patent information. In addition, external business consultants and lawyers may also play a role when it comes to issues related to marketing/trade marks or general knowledge management.

Private sector support for SMEs in matters related to IPR: The patent attorneys

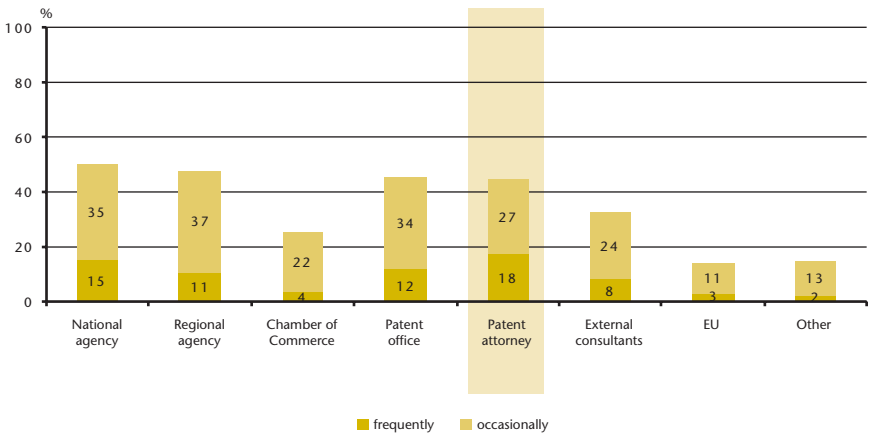
The profession of patent attorney (other terms used are patent agent or patent lawyer) was introduced soon after the establishment of patent offices, as it was recognised that in order to handle patent issues, specialized legal as well as technical know how is needed beyond that offered by regular lawyers. Patent attorneys, in contrast to regular lawyers, hold a university degree in natural sciences or in engineering as a necessary requirement for their education. Following their university graduation, they have to work in industry on patent-related issues for some time, enrol in post-graduate law courses and may then apply to take an exam in order to become an accredited patent agent. In Germany, the whole process to become a patent attorney takes at least 34 months (short path to become a patent agent) or up to 10 years (long path).

The main task of a patent attorney is the legal representation of patentees vis-à-vis the patent offices and patent courts, and in this role they exercise a monopoly. Further, they also give advice regarding IPR matters. In practice, they help patentees to file their patents, aid in litigation cases, conduct prior art searches and also offer consulting on general IPR matters. It is important to notice that the concept of a patent attorney is bound to territories: In Germany (as in other countries), one can distinguish between German patent attorneys (who are only allowed to represent clients in front of the German patent office) and European patent attorneys (who can only represent in front of the EPO). For each of these two cases it is necessary to take separate exams in order to be accredited.

Graph 25 shows what type of providers (public and private) the firms questioned in the user survey indicated that they seek for support of innovation projects. Although one could expect a certain bias towards publicly support offering institutions because the interviewees are actually users of such measures, and notwithstanding the fact that the user survey cannot be representative for the whole group of SMEs seeking support in innovation matters, some important and interesting conclusions can still be drawn.

The most striking observation is that 18 % of the respondents frequently sought support from patent attorneys; an additional 27 % did so occasionally. In total,

Graph 25 Usage frequency of different types of service providers for innovation projects, percentage of service users*)



*) multiple answers allowed
Source: User Survey, n = 630

45 % reported using patent agents. This figure places the patent attorneys third on the list of service providers used, after national and regional technology/ development agencies. If one considers only "frequent" usages, patent attorneys are even in the lead by 3 %-points. This picture is observed not only at the aggregate level, but also at the level of most of the individual services analysed.

Together with anecdotal evidence collected in the course of the user survey, one can assert that patent attorneys are of vital importance for the functioning of the public IPR support system:

1. **Patent attorneys seem to be the first choice of many SMEs when they are concerned with issues covering IPR**. The expectations regarding the know-how of patent attorneys are quite high among SMEs, and there are indications that many SMEs do not know how to put the patent agents to their best use (see also section 5.4.4 on patent information services)
2. **Many public support services act as entry point services for patent attorneys**. Cases in point are especially open day services organised by technology centres/incubators or chambers of commerce. Similar "open days" are also offered by patent information centres (see German Patent Information Centre Stuttgart, annex I, case study nr. 2). Referral services, such as the ones operated by the IOI service or the Irish IPAS scheme also have an entry point function for patent attorneys (see the respective case studies in annex I).
3. Evidence has been found to support the argument that **patent attorneys help SMEs in successfully applying for and using public IPR support schemes**. For example, the support from patent attorneys can be considered quite important for the success of the German INSTI SME Patent Action service, as they often help SMEs in the application process for the subsidy (see INSTI SME Patent Action, annex I, case study nr. 1).
4. **Patent attorneys use public support services targeted at SMEs themselves**. This especially refers to patent search services, with the help of which patent attorneys conduct searches on behalf of SMEs.

The above mentioned points show instances where the private sector service offerings of patent attorneys and the public service provisions are complementary and appear to serve the needs of SMEs.

There seems to be, however, one type of service activity – **patent database search services** – which may become increasingly a **conflict zone between private and public service providers** (see also section 5.4.4). Some patent attorneys and especially firms focusing on conducting patent scans seem to fear that newer service offerings of patent offices will eventually drive them out of the market, if the scope of the search services widens. Examples to this end are only of an anecdotal nature, but nonetheless help to illustrate the possible problems:

- The introduction of the IOI service in the Netherlands and its focus on patent scans prompted concerns of a patent attorney who filed a complaint for reasons of unfair competition. In order to avoid controversy, it was decided to alter the design of the support programme in such a way as to create a win-win situation for all involved. This "new" IOI service design only educated SMEs on the benefits of using patent information and performed only a very first patent search for them. For subsequent searches, IOI referred the SMEs to patent attorneys/commercial parties (sometimes subsidising them). Using this approach, IOI managed to increase the awareness and knowledge of SMEs, while at the same time acting as a market enlarger and catalyst for the private service sector. According to experts, this mode of operation works rather well.
- According to Lagemaat and Frackenpohl (Lagemaat & Frackenpohl, 2005), the information policy of the EPO regarding the future evolution of its freely available patent databases raised concerns among private patent information service providers in the late 1990s: On the one hand, the EPO stressed that it would still offer only low-level services for free (in order to allow for the general

public to inform itself about newest technological developments), but on the other hand the private information services noticed databases (such as INPADOC) that supposedly clearly go beyond basic search services. As a result, a joint communication platform – the PatCom – was founded by a number of patent information providers with the aim of promoting information exchange and improving information policy between the EPO and the private sector. (Later on, the practice of regular information exchange – embodied in bi-annual meetings – was extended also to WIPO and the German Patent Office.) In this context, Lagemaat and Frackenpohl point to the necessity of a competitive private market for patent information provision. They argue that the private service providers were always in the lead in terms of the introduction of innovations (e.g., offering "watchdog" services or English abstracts) and customer-orientation (e.g., more convenient office hours).

Interestingly, there are also patent offices which purposely do not enrich their service portfolio by implementing "added value" patent search services. The US Patent Office, for example, favours an alternative option of creating quality standards for a yet to be fostered private market, and then having the patent office act as a central quality assuring institution (ACIP, 2003). This approach is also being backed up by respective research (Ebersole, 2003). Generally, IPR experts agree that the public sector should focus on the low-level services and on creating and maintaining framework conditions, while leaving more sophisticated services to private offerings. Against this backdrop, it was suggested that – considering the functional classification system (see Table 5) – services of type 1 (pro-active awareness raising), type 2 (passive information provision), some aspects of type 3 (training), and type 5 (subsidies and legal framework) should be the domain of public service providers, while a considerable amount of the offerings of type 3 (training) and especially type 4 (in-depth consulting) should be left to private enterprises (consultancy firms and/or patent attorneys).

One final thought is that by introducing public support services in the field of IPR for a limited amount of time, a market for respective private offerings could likely be created or enlarged. The rationale is that through marketing activities SMEs would become interested in such services, demand would be boosted, which would in turn make the market for private providers more appealing and competition would be stimulated, which would in turn boost service quality. Concerning the offerings of patent search services, this is the path envisaged by the US Patent Office – in a market of private search service providers offering high level search services, the patent office would act only as a central quality assurance unit (ACIP, 2003). The Austrian service serv.ip, an outsourced subsidiary of the Austrian Patent Office conducting patent searches and organised like a private firm, may in parts be considered to be a role model in Europe for such a development (though serv.ip is neither a time-limited offer, nor are there true tendencies visible towards further privatisation).

5.6 IPR support services overseas – Lessons to be learned from Australia, Japan, Canada and the USA

In order to substantiate claims regarding elements of good practice in Europe and also to allow for learning effects, a number of services have been examined in the United States, Japan, Canada and Australia within the first two research phases of the study. Overall, 55 overseas IPR support services for SMEs were scrutinised. The identified services were, all in all, not that different from those operated in Europe. They consisted, for example, of awareness raising measures, grants for IPR-related activities or technology transfer institutions at universities.

However, some services had an **innovative element** which policy makers could consider when setting up services in Europe. Others, while similar to offerings in

Europe, are operated in subtly different ways – especially with regard to incentive schemes, or the employment of human resources. The following section will briefly look into such services and discuss possible implications for the European IPR support service landscape.

5.6.1 IPR services in Australia, Canada and the USA

The public IPR services operated in the US, Canada and Australia for the benefit of SMEs seem to fall mainly in two classes: (1) awareness raising measures, which are for the most part operated by the national patent/IP offices and (2) a broad range of consultancy/information services which are embedded in other support programmes – thematic support programmes in the bio-tech area or general innovation/R&D support programmes. Dedicated IPR programmes like those in the UK (e.g., IA Centre Scotland), Germany (INSTI) or France (IP Prédiagnosis) are less visible. Financial support programmes in the form of subsidy services which aim specifically at IPR were also hard to find – the U.S. and Canada have instead a general fee reduction available under a special provision for "small entities" (see also section 5.4.1).

All in all, the following observations can be made:

- With respect to awareness raising measures, the patent offices of the US, Canada and Australia have **awareness raising measures specifically for SMEs in place** which **comprise a wide range of activities**: Seminars and events are organised, web pages for SMEs operated, toll-free 24/7 hotlines for IPR matters installed, and publications on different matters of IP protection printed. A lot of value is seen in presenting case studies, resp. success stories.
- While the Canadian and the Australian patent office activities seem to have a wider approach towards IP protection and provide broader coverage of different IP protection methods, the recent activities of the **USPTO (i.e. the programme "stopfakes.gov") seems to focus primarily on registrable IPR and the objective of preventing counterfeiting**. This emphasis seems to be in line with the general US strategy which has put the fight against counterfeiting at the heart of its SME IPR policy (NIPLEEC, 2006).
- All awareness raising activities in the three countries investigated seem to aim primarily at **IPR novices**, and to a lesser extent on intermediate or advanced users. Against this background, experts noted that the material (e.g., brochures on different forms of IPR, guidelines etc.) was presented usually in a **very user-friendly way**.
- The level of **marketing activity** seems to be rather high. In Australia, for example, the "Smart Start" awareness raising campaign builds explicitly on brand creation and reported, as a result of its respective activities, a significant increase in the visibility of the service with SMEs. This can certainly be seen as an element of good practice with respect to marketing activities in comparison with many European services.

Australia: "Smart Start" awareness raising programme as a showcase for programme branding

Smart Start is an IP awareness raising programme operated by IP Australia, the Australian patent office. It is special in several aspects: First, it introduces the concept of IP usage and protection particularly to people who want to start their own business or who want to acquire an already existing company. It follows the rationale that when new ideas arise for creating a start-up or buying stakes in other companies, the issue of IP protection has to be dealt with especially. Second, the programme tries to give hands-on information to IPR beginners regarding a wide range of IP protection possibilities – not the least with regard to informal protection mechanisms. In this context, it is interesting to note that IP Australia distributes a Windows application called "Confidentiality Agreement Generator" and places it prominently on its website, along with business plan templates. Smart Start activities comprise the execution of half-day workshops on IPR and IP protection (70 such events were held between May 2005 and June 2006, which were attended by around 5,200 people in total); the service publishes IP-related brochures (circulation volume: 22,000 p.a.) and maintains its own website. Thus, the take-up seems to be very high. This website acts also as an entry point for other actors in the IPR service field (i.e., patent attorneys). A big success factor is seen in branding activities, which are said to have led to a relatively high recognition and reputation of the service with Australian SMEs.

- An interesting combination of offering expert know-how for free and an awareness raising activity can be seen in the Canadian Bank of Speakers initiative. While it looks very similar to many of the "open days" services offered by European institutions in conjunction with patent attorneys, the marketing efforts (with a central entry point for interested parties and thus probably higher out-reach to more potential target groups) set this type of service apart:

Canada: Bank of Speakers initiative – Combining free expert advice with awareness raising and with a central entry point

The Bank of Speakers (BoS) targets SMEs and other clients with very little or no knowledge of IP. It is designed to raise awareness and introduce the strategic value of IP. The objective of the initiative is to have a pool of trained speakers on IP available across Canada for engagement with organisations serving SMEs (e.g. business associations) and for participation at specialized tradeshows. CIPO (Canadian Institute for Intellectual Property) promotes and coordinates the Bank of Speakers initiative. This initiative is a collaborative effort between CIPO and the Intellectual Property Institute of Canada (IPIC). IPIC is the primary professional association of patent and trade-mark agents in Canada. Speakers are IP practitioners and members of IPIC, who volunteer their time to deliver a basic IP Awareness presentation. Event organisers request a speaker for their event via a CIPO on-line form or by contacting their client service centre. Presentations are being made across Canada. CIPO Business Development Officers also present on occasion, when an IPIC speaker is not available. To date, the initiative is aimed at raising awareness of IP by introducing basic concepts such as the importance and strategic use of IP; an introduction to trade secrets, patents, trade-marks, copyrights and industrial designs; useful resources and tips; links to IP publications and on-line tools; and contact information.

- As with regard to services offered outside of patent offices, considerable efforts are placed on IPR service elements offered within the scope of technology transfer programmes at universities or state-run laboratories and/or thematic support programmes e.g. in the bio-tech area.
- Interestingly, it seems that services, where **volunteers** provide advice and counselling for free, are more prominent in the US or Canada than in Europe. According to experts, this seemingly higher popularity of a "business angel"-like approach – however, limited in scope to IPR counselling only – may have cultural roots: involvement of retired executives and experts is said to be valued highly in the US and Canadian society. It would be certainly interesting to examine if programmes such as the SCORE service would be also a viable option in Europe.

USA: The Service Corps of Retired Executives (SCORE) programme – a service which involves volunteering experts in IPR service provision

SCORE is a source of free and confidential business advice to help build small businesses from idea, to start-up and, eventually, to commercial success. SCORE uses more than 10,500 volunteers drawn from working and retired business owners, executives, and corporate leaders in 389 chapters located across the U.S. to assist small businesses with all aspects of business counselling and training, including intellectual property issues, without charge. An active online counselling initiative allows small businesses to search for a counsellor in a given specialty, such as protecting IP. While only a few registered volunteers (42) are declared IPR experts, other business experts may be able to identify in the course of their counselling IP-related subjects and refer the SMEs for more specialized help.

More than 5,000 business workshops and seminars are offered each year on a free or low cost basis (on all subjects). In 2005 SCORE provided on the order of half a million services through face-to-face, phone and online counselling sessions, workshops and seminars. More than seven million entrepreneurs have received counselling from SCORE since it was started. The SCORE Association received the prestigious Summit Award from the American Society of Association Executives in 2004 for its outstanding small business counselling programme.

Overall, **innovative elements** which can be seen in services overseas and which are worth considering for implementation in Europe relate (i) to offerings which draw on volunteering IPR experts and act as intermediaries between these experts and support-seeking SMEs. The advantage of implementing such a scheme would be to activate know-how at relatively low costs. Furthermore, it seems that (ii) the marketing and branding activities of awareness raising measures have to be noted and could serve as role models for many services in Europe.

5.6.2 The case of Japan: Towards an IP culture

As with the case of Japan, it is the magnitude of the efforts along different policy fields that catches the eye and creates a favourable environment for IPR usage with SMEs, a so-called IP Culture. The outcome of such a broad approach is worthwhile to examine, which is why the Japanese case is given particular attention in the following.

An IPR strategy for Japan

Japan pursues, after a policy statement of Prime Minister Koizumi on February 4, 2002, the goal *"…to become an intellectual-property based nation"* in order to strengthen its competitiveness (Sathirakul, 2006). Following that announcement, a number of actions have been taken in order to boost qualified IP usage, the most important one being the adoption of an Intellectual Property Strategic Programme. Enacted in 2003, it was designed by the "Intellectual Property Strategic Headquarters" – specially set up for this purpose. The programme outlines the following activity areas:

1. Foster measures to fight counterfeiting and piracy
2. Develop a world leading IP system
3. Improve support for SMEs and start-up companies that use venture capital
4. Develop strategic activities in global standardisation
5. Move towards becoming a creative nation
6. Promote human resources development
7. Accelerate industry-academia-government collaboration

The introduction of the **IP strategy** followed earlier legislative developments to improve the framework for IPR utilisation – such as the introduction of the Law on "Promoting University-Industry Technology Transfer" (TLO Law) in 1998, the "Law for Revitalizing Industrial Activities" (the 1999 Law) or the "Law for Enhancing Industrial Technology" in 2000 (Nishizawa, 2007). The introduction of the IP strategy gave impetus to the creation of a coherent IPR support policy which would address the **issue of IPR at multiple policy levels**. The rationale for the strategy has to be also seen against the background of the unfavourable economic development of Japan in the 1990s, which is frequently referred to as the "Lost Decade" (Sathirakul, 2006).

The IP strategy had to address framework conditions of which some were, and to an extent may continue to be specific to Japan. For example, traditional ways of handling IP and IPR, technology transfer or even the more general ways of conducting business affected how IP was handled. Some of these conditions could be considered favourable: Japan was, for example, among the first nations to introduce utility models as an IPR at the beginning of the 20th century (Suzuki, 2005), indicative of a well-rooted IPR tradition.

On the other hand, many seemingly successful features of modern innovation systems (such as incubators, clusters, technology licensing offices) have not been present in Japan until recently (Rissmanen & Viitanen, 2001: 3). **Technology transfer** occurred mainly directly from university professors to large companies by using a system of donations. As a result, big companies appropriated thus *"…a far larger share of university discoveries than what they actually supported*" (Kneller, 2007). Another case in point – and with high relevance for SME policy – seems to be the "keiretsu" system of collaboration between large firms and SMEs (Sathirakul, 2006). It basically describes a system of long term partnerships where SMEs produce on behalf of their larger counterparts. This system seems to make it very difficult for new SMEs to enter a market; in addition, Japanese SMEs depend to a rather large extent on the activities of big enterprises within this system. The overall Japanese innovation performance is said to have been affected by this dependency, too, as during the "lost decade" big companies reverted to a low-risk policy concerning the introduction of innovations and fostered more incremental improvements to secure established market shares.

The IP strategy in practice – implications for Japanese SMEs

The **keiretsu system** and the **donation system** in university technology transfer are considered to constitute main inhibiting factors for the development of entrepreneurial and related innovative activities. These systems provide a rationale

why policy focuses on three dimensions to increase economic competitiveness: technological innovation, entrepreneurship and IP creation (the latter is considered to be linked to the first two dimensions) (Sathirakul, 2006). For the 2005 update of the Japanese IP strategy paper, a task force commissioned by the IPR Headquarters elaborated on measures to promote the intellectual property strategies of small and medium-sized companies. In total, the 2005 programme listed 450 support measures which address IPR usage and awareness in SMEs, in education, at universities and the general public (Sathirakul, 2006).

Support services in place

University-business collaboration (i.e., technology transfer) is a key cornerstone within the IP strategy. Its main vehicle is the system of Technology License Offices (TLOs). It is hoped, as far as the SME dimension is concerned, that through appropriating the IP of university research, start-up activities as well as out-licensing to existing SMEs will increase.

The Japanese TLO system

The Japanese Technology License Offices (TLOs) – which numbered 34 (Nishizawa, 2007) as of the beginning of 2007 – have been born out of the necessity to boost the transfer of inventions from university to the industry profitably. The American TLO system – and its perceived success following the introduction of the U.S. Bayh-Dole Act in 1980.[23] – served as a role model in the design of its Japanese counterpart. The purpose of the TLOs is seen in commercialising inventions created in the universities: IP titles are transferred to the TLOs, which are organised as separate bodies and which license the technology out to industry; royalty dividends are received in return. In this respect, the Japanese TLOs are not that different from those encountered at European universities. In addition, the TLO system aims to foster the creation of spin-offs from university which could be also considered a form of technology transfer and also adds a second and specific SME dimension to this type of service. The main incentive for researchers to support a Bayh-Dole Act system lies in the professional management of the IP which creates additional income for the university and for the inventors.

Hence, the professional management of the IP is the key success factor, and several measures have been taken to secure success: First, the factor "human resources" is recognised to be of utmost importance. The aim is thus to attract able and experienced IP managers by providing them incentives, e.g., in the form of shares of royalty income. Second, it has also been decided that, after an initial period during which government funds are received, the TLO has to stand on its own feet and act like a private company. These two factors could be considered to constitute subtle differences from the operation of technology license offices in Europe and they could make a huge impact in terms of the effectiveness and efficiency of such institutions.

[23] The Bayh-Dole Act denotes a piece of U.S. legislation. Among others, it tackles the ownership of IP rights emerging from government-funded research; with respect to small businesses, non-profit organisations, and university. It states that such IP belongs to the entity carrying out the research, not the individual researchers.

The Japanese TLO system seems to have achieved respectable success since it has been implemented: Patent applications increased from less than 300 in 1999 to 1054 in 2005; the amount of license revenue created increased almost by a factor of 20. There seem to be, however, differences in the perception of experts on how far reaching the success of the TLO actually is. Kneller, for example, maintains that it has to be kept in mind that the figures still fall short in absolute terms when compared to the US (Kneller, 2007). The recruitment of able staff is in his view most likely a challenge in Japan: *"…TLO personnel will have to come up the learning curve in terms of being able to communicate with university researchers and market inventions."* (Kneller, 2007). By contrast, other experts interviewed in the course of the underlying benchmarking study see exactly the TLO´s performance in attracting expert staff as the big success story of the Japanese TLOs.

Literature indicates that in terms of support aimed directly at SMEs, a number of institutions have been pegged for putting the national IP strategy to practice. Table 8 lists the main actors mentioned and their respective major activity and field of support. Noteworthy are the existence of a national centre for IP training and the large portfolio of services of the Japanese Patent Office.

The European experience has shown that webpages, services descriptions or strategy papers alone offer relatively little insight into the actual performance of the services, and that hard fact evidence is needed. In this context, opinions about how well certain services offered in Japan are doing varied considerably.

Table 8 Public institutions in Japan mentioned in literature to provide IPR support services to SMEs

Institution	Abbre-viation	Activity fields for support services offered for SMEs
Organisation for Small and Medium Enterprises and regional Innovation	SMRJ	Advice on strategic IP management
Japan Institute of Invention and Innovation	JIII	Consultation services on IP issues Awareness raising seminars/workshops on IP Patent information search services Application advisors (working throughout the country) Licensing advisors (working throughout the country)
National Centre for Industrial Property Information and Training	NCIPI	Consultation services on IP issues Awareness raising seminars/workshops on IP
Japanese Patent Office	JPO	Consultation services on IP issues Awareness raising seminars/workshops on IP Patent information search services Application advisors (working throughout the country) Licensing advisors (working throughout the country) Exemptions for SMEs concerning patent filing costs
Patent Offices of the Regional Bureaus of Economy, Trade and Industry, and SMRJ	—	Consultation services on IP issues

Source: Sathirakul, 2006

Against this background, a number of other organisations less known to outsiders are, according to IPR experts, very active in supporting SMEs in the field of IPR, of which – most notably – development banks stand out. Their main activity area with respect to IPR seems to be advice and the evaluation and acceptance of IPR as collateral in the credit business. Variations to this subject exist (see Table 9) with regard to the exact mode of operation or the main customer group targeted (e.g., only SMEs or also other types of organisations or private persons).

Table 9 Overview of public institutions in Japan who offer direct support in the field of IPR to SMEs

Institution	Activity fields for support services offered for SMEs
National Institute of Industrial Science and Technology (AIST)	*Consultation services on IP issues:* AIST is Japan's largest public research institution comprising 15 research institutes. It is specialised in promoting innovative research projects and bringing them to fruition through the acquisition of patents. AIST also assists SMEs with their research projects to get patented and to be licensed.
Development Bank of Japan	*Consultation services on IP issues and financial assistance:* The DBJ offers loans to revitalise failing, established SMEs through using the company's IP as collateral. The loan can also be used to assist SMEs which seek IPR protection. During the course of providing loans the DBJ also offers advice concerning IPR, how to protect it and in case of new-start-ups how to gain it.
The Okinawa Development Finance Corp.	*Consultation services on IP issues and financial assistance:* The service promotes business start-ups and development in Okinawa by offering equity financing to SMEs and micro businesses. IPR is used as collateral for the various types of available loans. In the course of this, advice and assistance with IPR issues may be provided.
National Life Insurance Corporation	*Consultation services on IP issues and financial assistance:* NLFC provides loans (business loans) to SMEs and micro businesses that have difficulty obtaining loans from private financial institutions (venture businesses). The NLFC business loans require a guarantor or collateral and IPR may be used as collateral. The NLFC law prohibits loans for enterprises engaged in banking, insurance or speculative transactions.
Shoko Chukin Bank Network	*Consultation services on IP issues and financial assistance:* SMEs are at the heart of the Shoko Chukin Bank Network. The bank specialised in supporting start-ups, innovation and revitalisation as well as finance and promotes cooperation between companies and regions. The network also provides support in IPR issues and offers unsecured loans to SMEs for patent development.
Japan Finance Corporation for Municipal Enterprises	*Financial assistance:* JFM raises funds through the issuance of bonds in domestic and international markets without borrowing from the government. The funds raised are used to subsidise assistance and support in IPR issues for SMEs.

Source: Identification process (phase 1)

Notwithstanding possible variations in the quality of single services provided, one can conclude that the scale of the efforts for establishing IP and IPR knowledge in the Japanese economy – and especially with SMEs – seems to be an order of magnitude higher than in the other countries scrutinised. IPR is not tackled by a limited set of single support services but by a plethora of measures from different institutions, coordinated by a country-wide IPR strategy. If measures aiming at the educational sector or the general public are also added to this picture, one can easily recognise a strong driving force behind establishing an IP culture.

The intention of this approach is to create a snow-ball effect: Knowledge and awareness on different forms of IP appropriation/protection methods are to spread in the private sector to a point where retail banks and insurance companies handle valuation of IP issues (including the usage of IPR as collateral) in day-to-day business with SMEs. Ideally, such know-how should be available not only at central headquarters, but also at the branch level. This goal may not be yet achieved. According to the Kamiyama, Sheehan & Martinez, institutions other than the ones mentioned in Table 9 are still hesitant to use IPR as collateral on a wider scale, primarily because of shortcomings of valuation methods, but it seems that Japan is farther ahead in this field than European countries or the US.[24]

[24] The Development Bank of Japan implemented, for example, its loan system for usage of IPR as collateral in 1995 and provided since then more than 250 IPR-backed loans to venture firms. By contrast, only a decade later was it that the Germany's Federal Financial Supervisory Authority (BaFin) offered German banks the possibility of accepting patents as sole collateral for bank lending (Kamiyama, Sheehan & Martinez, 2006).

6. Conclusions and recommendations

In search of "best practice"'

The underlying study sought out to identify and benchmark public support services in the field of IPR for SMEs, and to single out good practices. In this process, a rather large number of services in the field of IPR support for SMEs has been identified, assessed for more detailed investigation, and eventually selected for in-depth analysis. As a matter of fact, there is little evidence for making a big release on 'best practices' in the field. At the same time, there is ample evidence for compiling 'elements of good practice', understood as elements in the design or execution of those services whose characteristics and qualities are 'generic', implying that their adoption runs a high probability of success. Accordingly, there is a set of elements of good practice where each of the elements can be found 'out there', however not the set as a whole.

The strongest exploratory factors for explaining the variations in performance are contextual factors, in which the respective service has been designed, endowed with resources and responsibilities, and ultimately performed. As a consequence, in searching for elements of good practice, it is necessary to look at the services, at the overall institutions that deliver the services, and at the overall policy level, which primarily determines endowment with resources, institutional locus and the (hierarchical) position of the service.

In the remainder of this concluding chapter, findings, conclusions, and lessons learned are thus organised in three parts: the service level, the institutional level, and the policy level. As always, borders are blurring. Therefore, some of the conclusions are addressed in more than one part. As a rule and thus as a design logic, the respective sections can be read as an agenda or requirement specification for doing a good job as manager(s) of a service, as the top executive(s) of institution(s) in charge of providing a service or parts of it, or finally as policy maker(s).

Service level

1. **Overall performance of IPR services**. The performance of the present IPR support system is highly ambiguous. Despite a rather large number of identified services, fairly few services can be described as high performers. Some "islands" of well designed programmes exist, but the majority of measures do not seem to have a strong track record.
2. **Scope of IPR services**. IPR services are often highly specialised in comparison to the possible subjects such services could tackle. Not the least of the reasons is poor endowment with resources (budget, staff, hierarchical power, etc.). Another important factor in this context arises from the specific mind-sets of the involved actors: The support services in place mainly focus (i) on technical aspects ("how to patent", Registration issues) and (ii) on patents; they hardly tackle later phases of usages of IPR and seldom address IP protection/utilisation as a whole (i.e., the subject of IP management), including non-formal approaches.
3. **Integrated IPR service packages / referral to other services**. Of all the aspects noted in the course of the underlying study, this one stands out: Services should be offered in integrated packages, taking into account the complexity of the subject of IPR. This can be done by genuinely integrated services or, in order to account for scarce expert know-how and in order to increase visibility and accessibility, by referring to other services and/or institutions, thus aiming at joint provision of services. This fits nicely with a national service design, where the one-stop shop idea can be realised more

easily, again for the reason of pooling of expert know-how and access. Because of the complexity of the subject, one ought to be nonetheless aware of the fact that an IPR service covering all IP protection or rather IP management issues is hardly a feasible option. Hence, referral and networking activities seem to be important.

4. **IPR management over IPR protection**. The complexity of the subject of IPR as a strategic issue deserves increased attention. Particularly, the business/ intellectual property management aspect is one factor where many larger enterprises seem to be far ahead of the average IPR-affine SME. With IPR being increasingly used to create revenue, while at the same time many patents which are of no economic value are granted, and with many technological developments looking for applications which provide income, it seems that not the patent so much for itself, but the surrounding business model is the significant success factor. Accordingly, this points to the fact that the business perspective should be given more place in IPR service provision.
5. **The crucial role of qualified staff**. A big bottleneck can be seen in the number of qualified people available for providing IPR support. Such people should have technical, legal and business expertise, and it is especially the latter aspect that needs the highest level of attention. As a precondition to fostering IPR usage, it seems necessary to foster educational initiatives at universities (business faculties and technical faculties, a "train the trainer" issue), but also – in terms of general awareness – at high school level ("educate the public" issue). This may be also one of the reasons why trainings for SMEs are rather scarce. In designing appropriate syllabi, however, care must be taken that the quality of the educational offerings is up to the challenges – before any such courses, degrees, etc. are fostered or introduced, existing offers should be checked with respect to their quality (e.g., by involving experts form the IP departments of large enterprises in evaluating), as the scarcity of such offers may also imply a high variability regarding their true value in real business life.

Institutional level

6. **Institutions matter: mind-sets, traditions, institutional architecture**. For implementing new or improved IPR services, it is not unimportant to consider who is offering such services. Different mindsets and traditions and thus different institutional architectures make IPR services work in different ways.
7. **The key question in this context is: What should national patent offices do?** Following their tradition, it is questionable if national patent offices have a neutral stance towards all form of IP protection and appropriation methods (including informal instruments), considering their (implicit) preference for formal approaches, and, a preference for protection rather than management. In this regard, it is desirable to have technology/ innovation development agencies act as entry points for clients (also because of visibility issues), regardless of whether the patent offices are developed further into fully-fledged IP offices or reduced to their core competence of registration offices.
8. **Bringing the world of patent offices and innovation agencies together**. IPR support services are mainly the domain of patent offices, which operate more or less on their own, separate from technology/innovation agencies which address innovation and R&D-related issues. There is a need to bring both worlds together, following the rationale that IPR management should be part of overall innovation management. The separation can be seen as an indication of system failure. The separation has much to do with the status of a monopolistic authority with a long tradition and a clear understanding of the in- and the outside. However, due to the growing diffusion of

concepts of 'new public management', most patent offices have adopted some of these principles and have, as a consequence, been turning themselves into client-centred service organisations.

9. **The governance of IPR services providing institutions**. As patent offices are a rather new type of player in SME service provision (and because of being more or less isolated from general innovation support), the governance of the services is a critical issue. This particularly emphasises the importance of (i) careful needs analysis and service design, (ii) a systematic co-ordination and co-operation between relevant institutions, particularly between the patent offices and the technology/innovation agencies at the level of service provision, (iii) an overarching policy, and, eventually, (iv) the establishment of incentives for collaboration at all relevant levels[25].
10. **The interaction of private vs. public service provision should be addressed**. It seems clear that public offerings should not displace private ones, but rather enhance or ignite a market for them. In this context, well designed reward schemes (including a later privatisation of initially publicly funded services) could attract the right people to do a good job. Along the same line, it seems that cooperation with patent attorneys is a key success factor for IPR services.
11. **Attracting qualified staff**. The huge importance of expert staff and the evident lack of educational offerings in this respect, especially in terms of the business dimension, have proven to be the most critical factors in the acceptance and performance of IPR services. In this regard it is crucial to understand that there is a strong relationship between the significance of the service (coverage, budget, staff, access to other resources, hierarchical position, expectations, thus planning horizons, etc.) and the ability to attract competent staff.

Policy level

12. **Division of labour between patent offices and innovation agencies**. A specific question arises particularly with respect to the division of labour and the attribution of roles between the national patent offices and the technology/development agencies. Again, the particular decision will depend on the design of the national innovation system and the historical context. Still, some general arguments can be put forward both for and against the two types of organisations. Patent offices are traditionally concerned with the issue of protection of IP, thus they focus solely on registrable IPR. Patent offices possess considerable technical know-how (i.e., with respect to patenting procedures) and know-how in legal matters, and they are perceived by customers to be rather independent and objective. On the other hand, they are relatively new in the world of support offering institutions for SMEs. Technology/development agencies, by contrast, have a significant track record with regard to innovation and R&D support offered to SMEs, have a wider knowledge of the business context and are also better known by SMEs. Their IPR know-how, is, however, limited. There are some quite convincing cases of a well-balanced co-operation between these two (archetypical) institutions.
13. **Patent offices and innovation agencies: Two paths seem plausible**. The first one is to scale down the scope of the patent offices on their core competence of patent filings (and possibly database searches) and to enrich the technology/innovation agencies with IPR services. Or to enrich the patent offices with additional business and intellectual asset management know-how, thus creating **"institutes of intellectual property"**[26]. In either case, three aspects seem to be highly important: (i) linkages between the patent offices

[25] Policy co-operation can be a difficult issue as co-operation at the policy level is often missing adequate incentives. This is in turn due to the fact that outcomes of policy co-operation may be difficult to adjudge clearly to the respective involved partners.

[26] This approach is favoured by Gowers (see Gowers 2006).

and the development agencies should be strengthened in either case, and (ii) high permeability for the exchange of staff between the two organisations should be a goal. (iii) Because their services are better known by SMEs, and, more importantly, because they may likely have a more neutral stance towards the usage of different IP protection instruments (given the patent tradition of the patent offices), it would be probably advisable that technology agencies act as entry points for customers, not the patent offices.

14. **Endowment as an indication of priority setting**. Many of the services are small in volume and in some cases also restrictive in terms of duration (particularly in those cases, where they are funded and thus connected to European funding, mainly from the European Structural Funds). To the extent that allocation of resources can be considered an indication of priorities, proper endowment with resources (scope, budget, staff, hierarchical position, duration) is critical and pre-determines to a high degree the performance of the services, particularly through the attraction of qualified staff. In those cases, where, for example, the ESF is funding a three-year period, the national institutions should have an agreed policy on funding and operating the service after the period of European funding.

15. **National vs. regional approach**. There is actually no significant evidence for fostering a strong regional approach. On the contrary, there are several arguments for a genuinely national coverage: (i) high visibility of the service can be more easily achieved if the service is known throughout the country rather than only in a specific region, (ii) scarce expert know-how can be pooled at a central unit and does not need to be provided in every region. Notwithstanding this, there is particularly one case, where a regional dimension can be advantageous, this is, where regional outlets co-operate with national institutions in the promotion and delivery of the service, mainly through referral to other institutions and service providers.

16. **Out-reach / spatial distance**. Out-reach to local SMEs is important, not the least for marketing reasons. The case study user survey has shown that, in general, spatial distance is not considered to be a critical success factor for IPR support services. Regional outlets can be established with the task to promote the service and refer potential customers to the central unit. This does not, however, mean that regional IPR services are of no use. If they complement the national offerings, if they have clearly defined and limited goals in the context of the region and are designed accordingly, and if they are networked enough with other services, they can provide added value.

17. **Growing policy culture**. While most industrialised countries have developed a comparatively high level of policy culture in the core fields of technology and innovation policy, the field of IPR related services is still somewhat suffering from a rather poor policy culture, covering the whole policy cycle (need assessment, justification, and design; goal orientation in the performance phase, quality assurance and learning through monitoring and evaluation). However, there is evidence on a growing awareness of the adoption of elements of good practice from the core areas of innovation policy.

18. **The cost issue**: The study set out to investigate what exists and what can be done in terms of IPR support for SMEs within the *current* IPR framework. While the results have shown that a lot of things can be moved already in the present-day context, changes of the IPR framework itself should nonetheless be tackled. This applies especially to the cost dimension: Subsidy services cannot in general compensate for the lack of a community patent (or the implementation of the European Patent Litigation Agreement and the European Patent Judiciary). They seem to have in many instances more of a hidden awareness raising function than broad cost-covering goals. Especially for the latter, this type of service is nonetheless important. General tax exemptions or fee reductions are most likely not a viable alternative, either –

mainly because if exemptions are financed by taking funds out of other operational processes of the patent offices (especially examination work which is now financed by the application and renewal fees), one will run the danger that the quality of the examination work will deteriorate while at the same time the number of low-quality patent applications (given the lower barriers for entry) will most likely rise.

19. **Towards an IP culture**: Finally, the lack of availability of qualified staff (together with the lack of educational initiatives) should be also mentioned on the policy level, as it sets constraints for the magnitude of efforts possible to boost qualified IPR usage and IP management skills of SMEs in the short run. Many recommendations are to a large extent based on these constraints (e.g., the national approach with a central unit providing the pooled expertise). Given the importance of a firm's IP in today's economy, policy should address the know-how of SMEs, trainers and also the general public on IP management/ protection/usage matters. In this way, in the long run, availability of expert staff will be less of a problem and desirable snowball effects, as seen in Japan, will be created. This aim should be seen independently of the current or future IPR framework, and it should also not mean that some predisposition is displayed towards patents or against any form of "open source" movement. It points to the need that all actors involved should know about the possibilities to put IP to its best use.

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ANNEX I – CASE STUDIES

The case studies are presented in lose order. The numbering used does not represent a ranking of any type and is used only for referencing purposes.

1. INSTI SME Patent Action

Country:		Germany
Original title:		INSTI KMU Patentaktion
Target group:		SMEs
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
	X	Finance (& Legal Framework)
*classification system defined by the Austrian Institute for SME Research		

1.1 The INSTI SME Patent in a nutshell

The German service "INSTI SME Patent Action" is a subsidy-based IPR programme (with the subsidy being paid out to cover part of patenting costs for first-time SME patentees) and was chosen as a case study for exhibiting quite a range of elements of good practice: Amongst others, it was carefully planned and set up, is offered nationwide with regional outlets, has a high degree of customer-specific advice built-in and is integrated into a wider range of other IPR-related INSTI services. User survey and evaluation results indicate a very favourable ratio of invested resources with respect to achieved output. The case study also illustrates a positive interaction between patent attorneys and the service providers which seems to be an important success factor for the service. Challenges arise mainly in terms of marketing needs.

The INSTI (INnovation STImulation) SME Patent Action aims at supporting SMEs and enterprise starters who intend to protect their R&D results for the first time by IPRs (patents and utility models only) or whose last IPR-related application was filed more than five years ago. The service has the following specific goals:

- To reduce barriers in SMEs with respect to the use of patents and to optimise SMEs' innovation management;
- To increase the number of qualified patent applications by SMEs;
- To make SMEs aware of the economic aspects and the exploitability of an invention;
- To improve the use of patent information by SMEs and
- To improve the conditions in SMEs for the commercialisation of patents.

The main instrument used by this service is a subsidy: Eligible costs for tasks related to patent-application may be reimbursed by up to 50 %. The subsidy is paid out in several instalments and linked to five different service packages. The service is operated by a regionally organised network of INSTI partners (which count 35 in total), whereby the INSTI partners may be contracted public and/or private organisations.

The regional INSTI-partner assists the supported SME or start-up by developing a timetable for the take-up of the agreed services and accompanies the user during the total support period (max. 18 months). Thus, the regional INSTI-partner takes over the function of a coach. Depending on the decision made by the supported SME or start-up, the agreed services are provided by the regional INSTI partner himself or by external consultants or service providers. All in all, the INSTI SME Patent Action intends to contribute to the strategic understanding of the patent system and the benefits of using IPRs by SMEs.

Background and resources employed

The INSTI project was initiated in 1995 by the Federal Ministry of Education and Research with the primary objective to increase the awareness and capability of

SMEs and founders of new businesses (starters) to use patent and scientific-technical databases in the innovation process.

In the run-up to the campaign, the Cologne Institute for Business Research (IW Cologne) had conducted a research project funded by the ministry in order to map the support system in the field of innovation and to identify the users' needs. Thus, at an early stage of the campaign, it became clear that the project had to provide further services in order to increase the use of patent information by SMEs and start-ups and enable them to transfer their inventions into marketable products. The INSTI SME Patent Action–established in 1996–and its five modules were the result of these findings and the intense communication between the ministry, the project partners and other stakeholders. Originally, the project was designed with a limited time-frame of five years, but has been extended with no definite time limit. During the first years of the project, the main emphasis was laid on public relation efforts in order to familiarise SMEs and starters with the patent system and with the use and benefits of patent information. Nowadays, questions related to the commercialisation of patents and the infringement of patents have become of major importance.

The total budget for the service for the reference year [2005] amounts to EUR 1.83 mio, of which EUR 1.64 mio are earmarked for direct service activities, EUR 0.19 mio for the operational management ("overheads"), and EUR 3,000 for the printing of brochures and publications.

There are 2.4 FTEs operating the staff at IW Cologne – 2 economists and 2 controllers, who all work exclusively for INSTI but not solely for the SME Patent Action. The service itself is delivered and operated by the regional INSTI partners; as such the number of INSTI representatives in the field is much higher. Competence of the staff as well as hands-on experience in business matters is considered to be an essential asset. The INSTI network is the largest network for inventions and patenting in Germany. Its 35 members comprise public, semi-public and private organisations.

Modes of operation

The INSTI SME Patent Action is integrated into a wider scope of services, for which an annual budget of € 2.84 mio is earmarked. In addition to the INSTI SME Patent Action it also includes the INSTI Innovation Campaign, the INSTI Commercialisation Action (including InnovationMarket), the INSTI Information for Inventors, and the INSTI Inventors' Clubs.

The main instrument offered by the SME Patent Action is a financial subsidy where eligible costs for tasks related to patent-application can be reimbursed. The subsidy is linked to the following five so-called service packages (in brackets the maximum amount of non-repayable grants is given):

- Searches for "the state of the art" with respect to current developments in technical fields (€ 800);
- Cost/benefit analysis with regard to patenting a product or process (€ 800);
- Assistance by a patent attorney for the application of patents or utility models at the German Patent and Trade Mark Office (Deutsches Patent- und Markenamt) (€ 2,100);
- Support for preparations for the commercialisation of an invention (€ 1,600);
- Assistance by a patent attorney and provision of grants with respect to the application of patents abroad (€ 2,700).

Enterprises that use all five service packages may therefore receive a grant of up to € 8,000.

Evaluation and performance

With regard to the output of the service, the following figures were communicated by the service providers for the reference year of 2005:

- 735 applications were received, 500 older ones were paid out;

- The average amount of subsidy amounted to € 4,000;
- 8 to 9 out of 10 supported patent filings lead to actual patents;
- Almost two thirds of the supported firms were micro-enterprises with less than five employees;
- About one third of the users were newly founded companies;
- The service using SMEs came from manufacturing industries, often from electrical engineering, machine building and metal production;
- Most users were located in the federal state of Baden-Württemberg, followed by Saxonia.

The INSTI SME Patent Action is subjected to a range of quality assurance mechanisms, including regular monitoring exercises (user statistics), maintenance of feedback channels with customers (feedback forms for SMEs and regional partners), regular audits (rankings on the activi-ties and performance of the regional partners) and full-scale evaluations (carried out by external evaluators).

The last evaluation took place in 2003. It reported a high performing service, whereby the output was achieved with comparably little resources (it has to be reminded that the amount of subsidy given covers only about 10 % of the costs of a typical patent (see also Roland Berger Market Research 2005) – this is also why the service is seen as an awareness raising measure rather than a fully-fledged subsidy service). Success can also be evidenced by the high approval rate of the supported undertakings, as indicated above.

1.2 The user's view

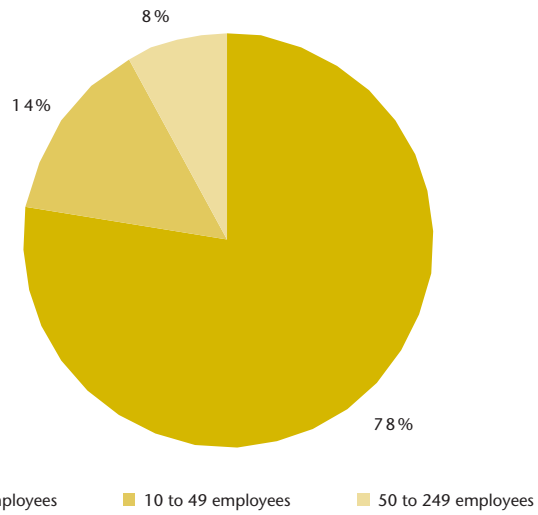
In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

As part of the benchmarking study, 53 SMEs were subjected to a user survey with a standardized questionnaire which checked for user satisfaction and the impact the service had on the utilising companies.

The distribution of the user sample (see Graph 26) with respect to company size reflects the fact that the service targets mostly micro-enterprises: 78 % of the SMEs in the sample have at most 9 employees, 14 % have 10 to 49 employees and only 8 % are larger companies (with a maximum of 249 employees, as only SMEs are allowed to take advantage of the service offerings).

Graph 26 INSTI SME Patent Action–Company size distribution in interview sample, 2005, percentage of respondents



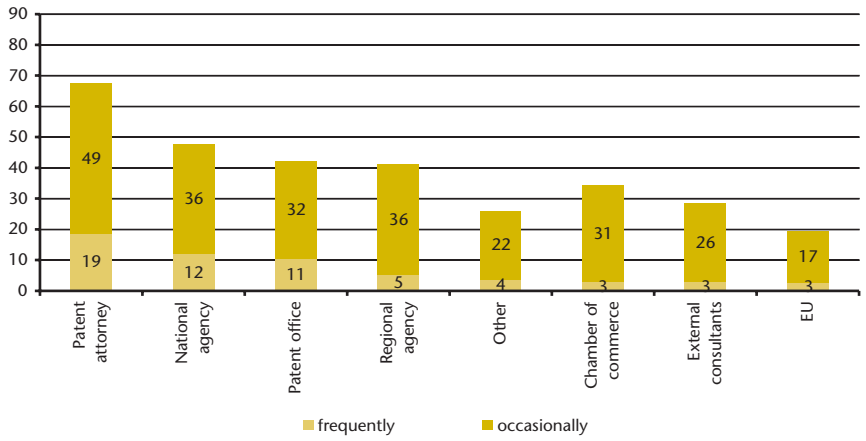
Source: User Survey, n = 53

As can be suspected, service users are very innovative: 4 out of 5 users of the INSTI SME Patent Action introduced product innovations (new or significantly improved products) onto the market between 2003 and 2005 onto the market. 48 % introduced process innovations in the same time frame. As concerns R&D, 87 % of the SMEs conduct intramural R&D, and, on average, about half of the staff works in R&D. These far-above country average figures concerning the level of innovative activities can also be observed with the users of the other services analysed in the scope of this study.

INSTI SME Patent Action users most frequently take advantage of the service offerings of patent attorneys (see Graph 27). This may be to a point explained by the fact that the patenting process is of utter importance for the companies in their specific phase of development (bearing the high share of enterprise starters in mind), but it is still interesting to note that development agencies (with national agencies being almost on par with the patent office in terms of usage frequency) and, even more so, private consultants play a much lesser role for the companies as service providers in the field of innovation than one could have anticipated.

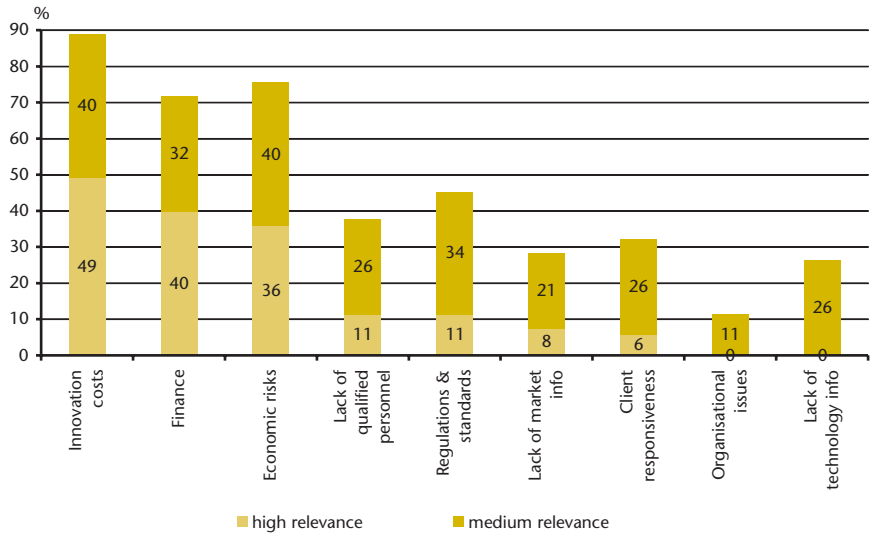
As regards factors hampering innovation activities, the companies mostly mentioned high innovation costs (for 49 % of high and for further 40 % of medium relevance), difficulties concerning access to finance (for 40 % of high and 32 % of medium relevance) and economic risks associated with innovation projects (for a total of 76 % of relevance) (see Graph 28).

Graph 27 INSTI SME Patent Action–Usage of different service providers, percentage of respondents *)



*) multiple answers allowed. Source: User Survey, n = 53

Graph 28 INSTI SME Patent Action–Hampering factors for innovations, 2003 to 2005, percentage of respondents *)



*) multiple answers allowed. Source: User Survey, n = 53

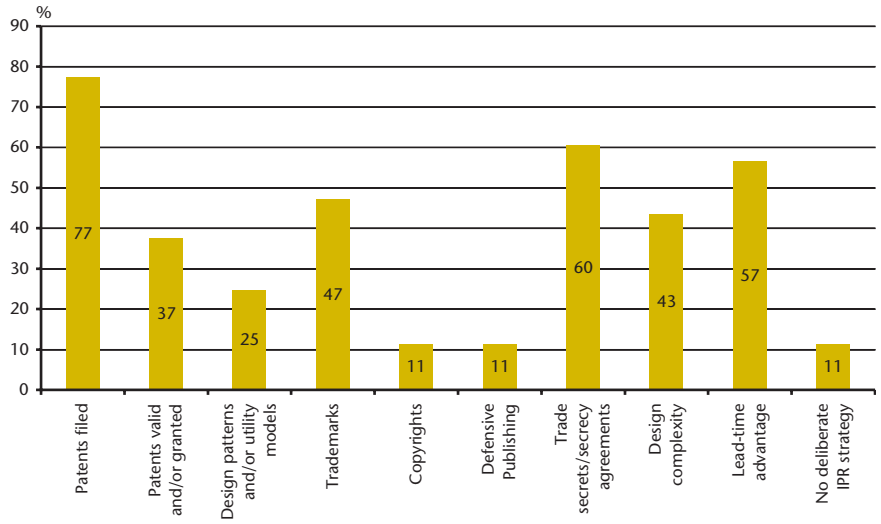
By contrast, lack of qualified personnel, regulations and standards, client responsiveness or organisational issues play much less of a role. These figures can be considered as important hints for the significance of subsidies for patenting costs.

An important question in the context of the study is to what extent SME users employ different IP protection methods. As can be seen from Graph 29, and not surprising for users of a subsidy service for patent costs, most companies (77 %) filed for a patent between 2003 and 2005, or had a patent granted or valid in that time period (37 %).

But it can also be observed that 4 to 6 out of 10 companies also employ informal protection mechanisms (trade secrets, maintenance of lead time advantage and/or reliance on the complexity of the design of their inventions), and 47 % utilise trade marks.

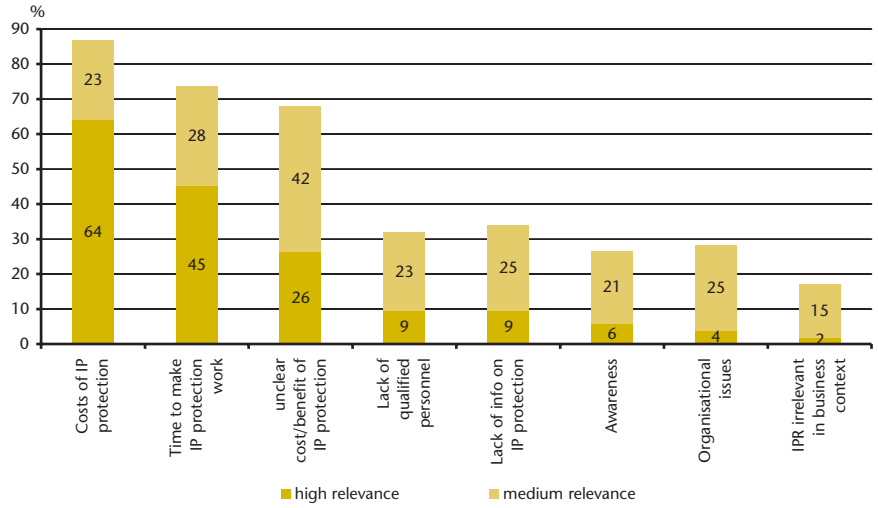
The main internal barriers perceived for using IPRs are, by far, the costs of IP protection (for 64 % of high and for another 23 % of medium relevance) and the time to make IP protection work (for 45 % of high, and for 28 % of medium relevance) (see Graph 30). Nonetheless, cost/ benefit considerations (i.e. the question

Graph 29 INSTI SME Patent Action–IP protection methods employed, 2003 to 2005, percentage of respondents



*) multiple answers allowed. *Source: User Survey, n = 53*

Graph 30 INSTI SME Patent Action–(Internal) barriers to using IP protection mechanisms, percentage of respondents *)



*) multiple answers allowed. Source: User Survey, n = 53

on why to patent) play an important role, too. This is again an indication that IP management, evaluating the right IP strategy and integrating it into the business model (which should answer the benefit question: creating or securing revenue) are most likely fields which need to be addressed by IPR service providers.

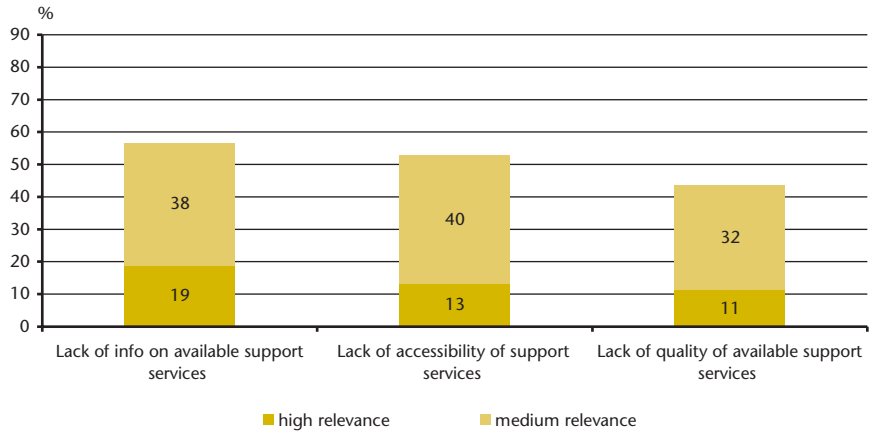
Interestingly, company internal resources (in terms of personnel), general awareness issues, knowledge deficits with respect to IP protection methods and organisational issues are not perceived to be an obstacle.

External, service-related barriers are not considered to be significant barriers for the usage of IPRs (see Graph 31). But they are, on average, of higher relevance than the low-ranking internal factors described above.

User out-reach and satisfaction levels

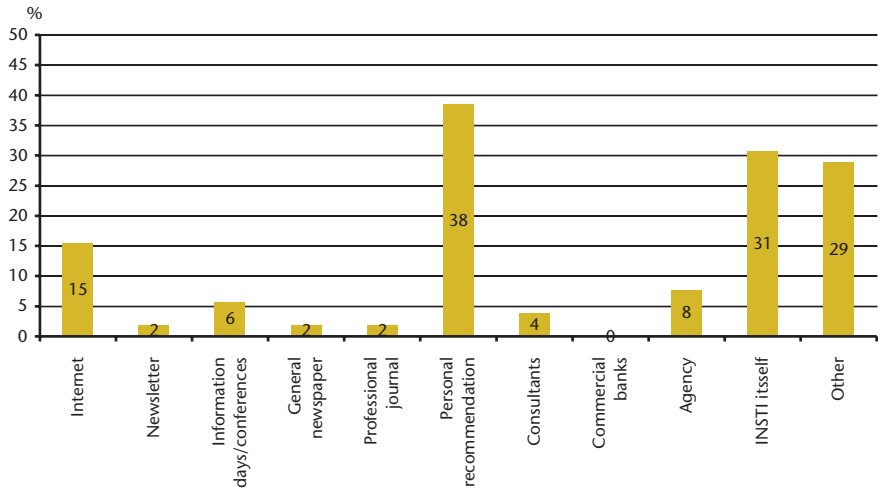
Users of the INSTI service got to know about the service mainly through personal recommendations (see Graph 32). A little less than a third learned about the INSTI SME Patent Action from INSTI itself (i.e. INSTI partners and/or project management at IW Cologne), around 29 % from other channels and 15 % from the internet. Advertisements in classical media are not significant carriers of information on INSTI. These results may point to a central role of informal networks for marketing purposes (see also below), but may also give ground for a hypothesis that the general knowledge of SMEs about INSTI services is an area for improvement –

Graph 31 INSTI SME Patent Action–(External) barriers to using IP protection mechanisms, percentage of respondents *)



*) multiple answers allowed. Source: User Survey, n = 53

Graph 32 INSTI SME Patent Action–Information channels, by which users got to know about the service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

something which is also corroborated by statements given in some of the expert interviews carried out.

INSTI users are, on average, very satisfied with the Patent Action service. All aspects (delivery time, the competence of staff, the relevance of the provided information, etc.) are graded with "2" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied; see Graph 33). 90 % of the users gauge the extent of the service offerings to be adequate – only 8 % think it is too narrow. Spatial distance (for 50 % a very low-level barrier and for another 40 % a factor considered to be at least acceptable) does not seem to be too much of a problem, indicating that the network approach (a central coordinating unit with regional branches) actually works as desired. For 72 % of the users, the benefits of using this service clearly outweigh the efforts.

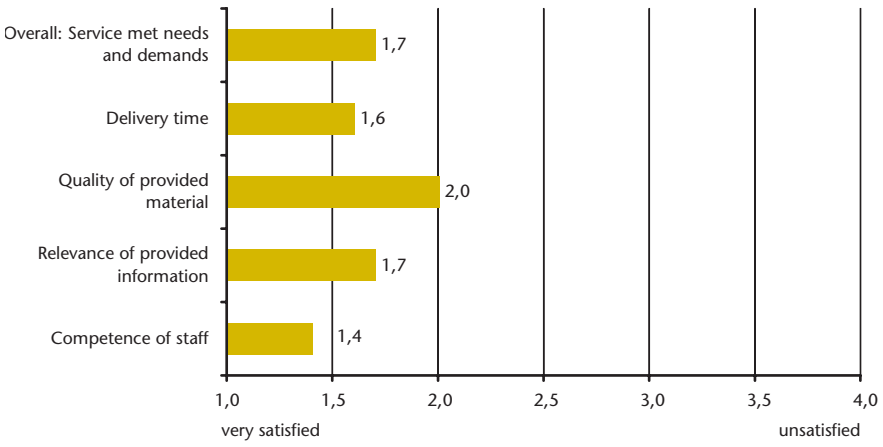
An important conclusion may be drawn from the analysis of the user's perception of administrative burdens. While only 16 % believe that the administrative burdens of using the service are too high, the share of users making some negative remarks in the more open questions about this issue is still considerable. This is a contradiction at first sight, but may be explained by the active role networking partners play when "selling" the service: As the service draws on a multitude of regional service providers with different backgrounds (private companies, consultants, semi-public bodies), and the Patent Action service forms only a part of their service portfolio (yet an important one), these regional providers themselves seem to help as much as they can and carry the SME through all administrative steps. The same seems to hold true for patent attorneys, despite of the fact that they are not allowed to be INSTI partners themselves. As one SME put it: *"If it wouldn´t have been for our patent attorney, we wouldn´t have carried out the project at all."* This can, together with the high usage levels of patent attorneys shown above, be interpreted as evidence that the active marketing of the measure by patent attorneys is a crucial factor for the success of the INSTI SME Patent Action.

One can theorize that the strong networking with patent attorneys (and to an extent also with the other regional providers) accounts also for the large share of personnel recommendations, by which the users got to know about the service. Given the fact that patent attorneys are the primary service providers for the questioned companies, it might be suspected that patent attorneys are also the primary entry point for the users to the service.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should also inquire into the added value of the service – i.e., what would have

Graph 33 INSTI SME Patent Action–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



Source: User Survey, n = 53

happened in case the service were absent. This is done in order to isolate a "net effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other type of changes incurred within the enterprise, as a result of using the service, are to be recorded (these changes are referred to as "behavioural additionality").

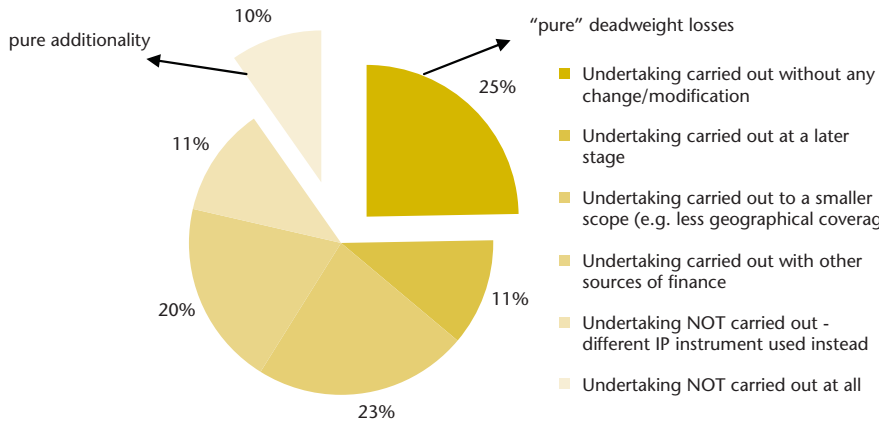
Additionality of the INSTI SME Patent Action effects seem to be quite high, given the rather low amount of subsidy (see Graph 34); however, pure deadweight effects are larger than pure additionality effects. 10 % of the undertakings would not have been carried out at all in the absence of support from the SME Patent Action. For a total of 45 %, the service had a catalysing effect: It speeded up the process, allowed for larger scopes or replaced the probable usage of another IP protection instrument. 20 % would have used other sources of finance. 25 % would have carried out their patenting project regardless of the service offerings in the same manner.

Further to that, and with respect to the "behavioural additionality" approach, it was also analysed how the support used changed the utilisation level of different IP protection methods (of different degrees of legal formality) and what general effects the service had on IPR-related behaviours of the companies. As a decrease in usage level of a certain IP instrument does not necessarily have to be a negative effect, no judgement can be given whether the changed behaviours are actually improved or better in nature if compared to the situation before using this service. Notwithstanding this, some interesting conclusions can be drawn.

Recalling from the goals that the INSTI SME Patent Action – despite of the fact of being designed around a subsidy in nature – aims primarily at creating a better understanding of IPR, and also tackles the issue of improving innovation management, one may rather safely say that the INSTI service succeeded in this goal (see Graph 35). The most prominent changes in business attitudes concern general knowledge on management know-how, patent knowledge in the business environment and general IPR awareness, which increased for 55 %, 38 % and 34 % of the users, respectively.

Interesting, and ranking forth, is not an increased usage of patents but rather a higher usage level of trade secrets in the corporate IPR strategy (though the high level of already present patenting activities has to be kept in mind when interpreting the results). Not only is the share of SME users which place more emphasis on patents in the IPR strategy lower than that of firms who focus more on trade secrets (17 % as opposed to 25 %) – SMEs also moved away from their patenting plans more frequently than from using trade secrets (-8 % compared to -2 % for trade

Graph 34 INSTI SME Patent Action–Additionality of the financial subsidy, percentage of respondents



Source: User Survey, n = 53

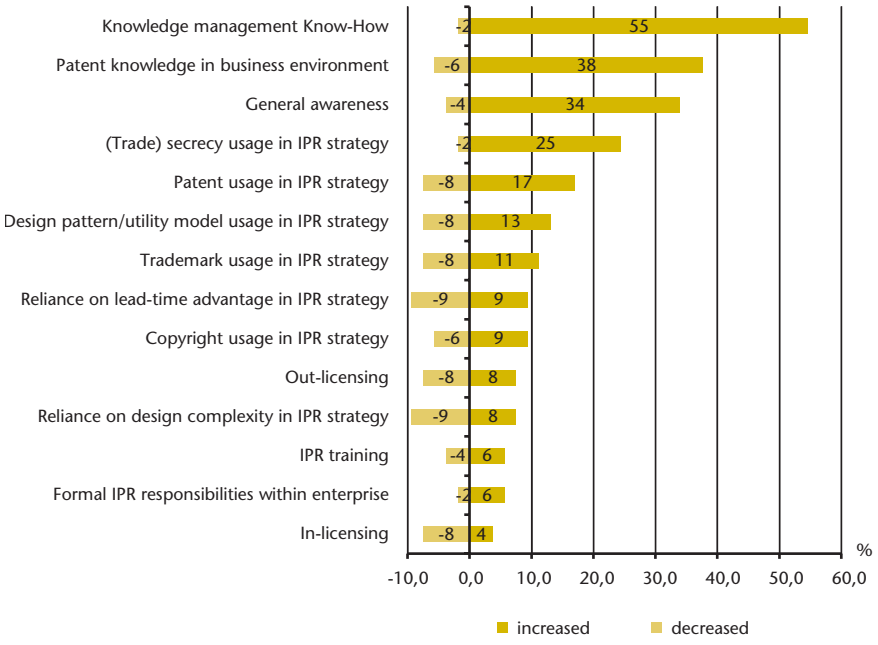
secret users). Together with the fact that using the INSTI SME Patent Action boosted also the usage of other non-patent IP protection methods, one can conclude that the service operators may have done a rather good job at consulting the SMEs about the right IP strategy (i.e., they seemed to have advised those users where patents would have been too risky/costly etc. to use another protection method). Experts attributed this to the fact that the regional partners often have a business-oriented background; they were also rather sceptical, whether a national patent office would have done/achieved the same, if it (or some yet-to be founded regional outlets of the offices) were to operate the service.

Interestingly, design pattern and utility model usage, while increased, did not really skyrocket. This comes somewhat as a surprise, given that especially utility models are advertised as low-cost alternatives to patents, with less administrative burdens. Also interesting is the fact, that licensing activities have not increased a lot. This may either be due to the fact that most patents granted with support from the service are too young in order to be turned into money by means of licensing. Or it may also be that the protection goals prevail over other benefits of using IPRs.

Users were also asked what they deemed to be the most important elements of a service such as the INSTI SME Patent Action. The results are shown in Graph 36. They underline the importance of the factors competence of staff (for all (!) users a factor of high or medium relevance), timely delivery,[27] ease of access and identification, low administrative efforts and matters of costs. Information on different methods of protecting IP, i.e. on why and why not to patent – while not a primary factor contributing to the success of the service, according to the users – is still of considerable relevance and of more importance than information on "how" to patent.

Low referral rates might be related to the integrated approach taken, where INSTI fulfils many functions of a one-stop shop. In this context, however, one should

Graph 35 Behavioural additionality of the INSTI SME Patent Action, percentage of respondents



Source: User Survey, n = 53

[27] Timely delivery may become an issue, though, for the future, as the total support period has been shortened to 18 months – which may be too little, given the processing times of patents at the patent office and the fact that the five service packages offered are closely linked with a timetable to different milestones in the patenting process. Some users complained already about too short and/or too rigid time tables in the interviews.

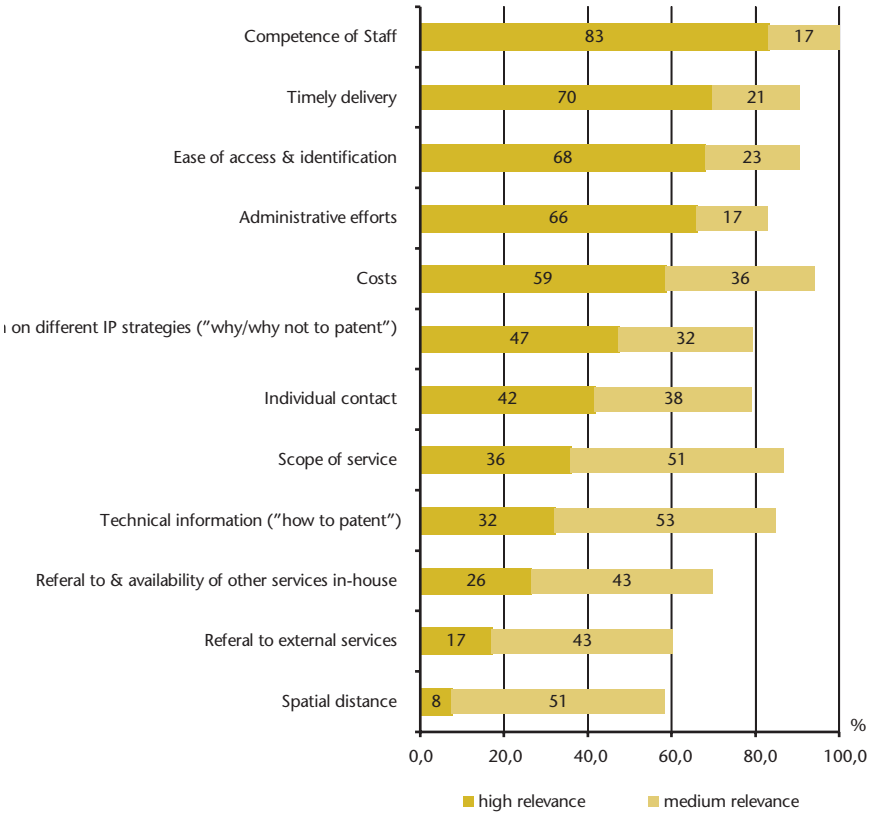
recall that the INSTI SME Patent Action still focuses on patents and attracts SMEs in a very specific phase of development (when they try to protect an invention for the first time). Thus, the scope of the service seems to be less of an issue with the reached user group. It stands to judgement, though, whether there is still a need for a complementary service, addressing Intellectual Property Management in a more general way, especially with respect to later phases of IPR utilization (e.g., litigation support) and/or in-depth IPR training.

1.3 Elements of good practice

The service exhibits the following success factors (resp. good practice elements):

- Integration of the INSTI SME Patent Action into the overall INSTI Action which provides SMEs with assistance and support for all phases of the innovation process–from the development of ideas until the commercialisation of patents and other IPRs;
- An active Germany-wide network of consultants and service providers (INSTI partners) with different institutional background, and good cooperation with patent attorneys (the networked approach with different institutions also allows to some extent for non-patent centric advice, if patents are not the right choice for particular SMEs with respect to their IP protection needs);
- For each user, the regional INSTI partner develops an individual timetable for the take-up of the agreed services. He/she also coaches the SME or starter during the total support period;
- Operation by expert staff;

Graph 36 Key quality factors for a service such as the INSTI SME Patent Action, percentage of respondents



Source: User Survey, n = 53

- The INSTI SME Patent Action was the first and continues to be the only measure (at least on national level) that supports SMEs' development and use of patents (uniqueness);
- Referral activities: An internal competence databank has been developed to provide INSTI-partners with an overview of the comprehensive knowledge gathered in the network and to facilitate co-operation among the partners;
- Quick approval of applications and unbureaucratic handling of the measure.

The INSTI SME Patent Action may experience the following challenges:

- Issues arising from shortening the time frame firms can use the service: This is because the instalment plans are linked to milestones in the patenting process, and if the latter takes longer than anticipated (not unusual given the current backlog at the patent offices) a synchronous delivery of support may not be possible any more;
- Visibility with SMEs/marketing;
- Maybe a need for a complementary service focusing on later phases of IPR utilisation (litigation issues, etc.) and/or training on IP management.

2. Patent information centres (PIC)

Country:		Germany
Original title:		Patentinformationszentren (PIZ)
Target group:		All companies
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
	X	Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

2.1 The patent information centres in a nutshell

The German network of Patent Information Centres (PICs), and most notably the PIC in the city of Stuttgart, was chosen as a case study to display elements of good practice as it shows how an old support structure (PICs were initially reading rooms for patent literature and were set up in the late 19th century) can evolve to offer value-added services for SMEs. Though primarily focussed on patent information search services, the portfolio includes interesting aspects such as trainings possibilities for students of technical universities and an SME working group. Key good practice elements comprise a national coverage with regional outlets, high reputation and the competence of the staff. Challenges can be seen with respect to the establishment of an evaluation culture, with broadening the scope of the centres to further include information also on less formal IP protection methods and in the area of marketing activities.

The PIC network

Germany´s Patent Information Centres denote a nation-wide network of information centres which provide information on patents. The Patent Information Centres are a very old support structure (dating back to the 19th century), and their initial (and also today's) task was to offer reading rooms for patent documents. The scope of the services has been extended ever since, but one of the primary activities is still related to patent documents: To provide the means to conduct patent searches.

Each Patent Information Centre is a member of the Association of German Patent Information Centres (Arbeitsgemeinschaft Deutscher Patentinformationszentren e. V. – ARGE PIZ). The activities of the association are directed towards the exchange of experience between the various centres. All PICs act completely independently within the framework of existing legislation. Co-operation contracts have been concluded between each PIC and the German PO (Deutsches Patent- und Markenamt–DPMA), an important partner for this service.

The ARGE PIZ represents the common interests of its members vis-à-vis third parties and offers them information about the latest IPR related developments in Germany and abroad. In particular, ARGE PIZ is involved in the development of measures safeguarding the existence and development of the PICs as well as that of other facilities linked with IPR related issues. It advises the governments at federal and state level and supports the education and training of PICs' employees. Furthermore, it backs the public relations efforts of its members aiming to promote public awareness and information about IPRs.

Patent Information Centres were established in almost every German federal state; the nation-wide network consists of 24 Patent Information Centres. However, the

modes of organisation differ with respect to the administration, location and offered services. Some Centres are operated by regional development agencies, some by chambers of commerce; some are attached to libraries of (technical) universities. In order to offer a better insight into the mechanism of the services offered, the German Patent Information Centres will in selected parts be described more specifically by using the example of the Patent Centre in Stuttgart which is part of the Regierungspräsidium Stuttgart (the local government of the city of Stuttgart).

The PIC Stuttgart

The objectives of the PIC Stuttgart are in particular:

- Creating awareness for the importance of IPRs;
- Providing patent information sources (databanks, CDs/DVDs) in a suitable manner to economic actors, especially private inventors, enterprise starters and SMEs;
- Providing assistance and advice to start-ups, SMEs, private inventors with regard to research of IPRs and other types of patent information;
- Executing of patent searches on behalf of clients for a fee;
- Providing supplementary information services, such as technical documents technical regulations and norms.

The main goal of the PIC Stuttgart is to familiarise enterprises, especially SMEs with IPR related issues, such as patents, trade marks, utility models and registered designs. If an interested party seeks information outside the scope of formal IPR, information on informal protection methods or related issues are also offered to SMEs, but less often. In addition, the PIC Stuttgart promotes the understanding and use of the patent system also by offering free initial consultation for inventors and SMEs, organised in co-operation with local patent attorneys. Although SMEs are assisted in finding ways other than patents to protect their IP, knowledge management know-how including information on IPR management strategies are not within the scope of PIC Stuttgart.

German PICs target especially SMEs, but are generally open to all kinds of enterprises. No restrictions are in place for certain industries or technology fields. A regional focus is given by the fact that PICs have been set up in almost every federal state, thus guaranteeing Germany-wide accessibility of the services. Furthermore, as all PICs co-operate with the German PO, it is an important opportunity for the PO to be present at the regional level.

The services offered by PIC Stuttgart target only the first phases of the patenting process, such as prior state of the art research (or research into existing IPRs in general) and the application/ registration process (but not the utilisation phase or the subject of IPR acquisition). Other German PICs may offer some kind of support and advice in other phases of IPR usage. Overall, the support scope is expanding: 11 PICs have concluded special agreements with the Patent Office that allow them to accept patent and utility model applications which are transferred to the German PO.

One of the reasons for the specific focus on patents is, according to the service providers, the rapidly advancing industrialisation of Asian countries (i.e. China). Many (German) SMEs, especially in the manufacturing sector, which used to protect their IP by informal protection mechanisms such as trade secrets, are said to nowadays recognise the necessity to protect their IP by formal protection mechanisms such as patents. These developments also contributed to the renaming of the institutions from "Patent Display Centre" (Patentauslegestelle) to "Patent Information Centre". The PIC Stuttgart nonetheless also underlines the importance of other IP protection means, but seems most of these tools outside the scope of the centres.

Background and Resources

In 2005, the budget of the PIC Stuttgart amounted to € 750,000; it is operated by a staff of 8 persons (7.5 FTEs). Nationwide, the size of PICs (in terms of the staff operating the centres) varies between 2 and 10 employees. In general terms the qualification structure of the PICs all over Germany can bee seen as quite similar; the staff employed at PIC Stuttgart consists for example of mechanical engineers, public administration managers and librarians. As the offered service spectrum has been extended and upgraded during the last years, experts believe that the qualification of the staff needs to be constantly updated in the future, too, in order to deal with newly-arising IPR issues.

In the past, target figures (i.e. quantitative number of users) have not been set for the various PICs. According to experts, defining target figures is either impossible or even counterproductive. As the main objectives of the PICs are to provide enterprises with access to patent databases and to familiarise them with IPR related issues as well as with the use of databases, a strong increase in the number of users does not necessarily coincide with the maintenance (or even rise) of the quality standard of the inventions. According to expert opinions, the public status of the PICs in Germany can be seen as both a disadvantage and an advantage. The PIC Stuttgart, for example, has to observe public administrative law and is therefore not allowed to act profit-oriented on the market and/or to offer services that might stand in competition with other private service providers. Therefore, potentially profitable business ideas cannot be realised through PIC Stuttgart. On the other hand, PIC Stuttgart's public status and its implied neutrality can also be considered as an asset. The high quality but not profit driven services are offered in a trust-building environment aiming to support users which are often unsure about the economic prospects of their innovations.

Regarding future activities, further efforts seem to be needed in order to increase the awareness level of SMEs and inventors about the services of the PIC Stuttgart. Although the PIC Stuttgart states to disseminate information on offered services through a lot of available channels (i.e. Internet, pro-active contacting, using of multipliers and existing networks and others), experts state that there is room for improvement regarding marketing and advertising activities. In order to tackle this issue, the expenditures for public relations and advertising of the PIC Stuttgart have been increased in 2007. In co-operation with a professional advertising agency the PIC Stuttgart intends to promote especially its seminars and trainings. Therefore, the PIC Stuttgart expects to significantly increase the number of participants at seminars and trainings in the future.

Modes of operation

The network of the Germany-wide PICs acts mainly as first contact points offering various types of support; the main task is to provide access to original IPR documents and to assist enterprises in researching IPR protected innovations. Furthermore, all Patent Information Centres provide photocopies of patent documents and carry out patent searches. More specifically, the PIC Stuttgart, for example, offers the following services:

- Patent search services in databases: performed by the customer for a small fee or – against a higher fee – by the staff of the PIC, on a continuous basis (continuous opening hours etc.), in the premises of the PIC. Enterprises make also increasing use of the freely accessible databases concerning IPRs on the Internet offered by PIC Stuttgart.
- Initial free legal advice by external patent attorneys for SMEs and private inventors (weekly at PIC Stuttgart); non-legal advice on IPR matters from the PIC staff.
- Organisation of trainings and seminars (max. number of participants 22, fee: 210 Euro per participant). According to experts, the importance of training courses and seminars regarding IPRs has increased during the last years. This

is also due to recent global economic developments requiring a stronger use of formal IP protection mechanisms. SMEs face special disadvantages in this respect as they are often neither familiar with the patent system nor do they possess the necessary experience in database research. This makes training offered to SMEs more relevant.

- Organisation of the "IPR Day" (a conference with IPR speeches; every second year an inventor's prize is awarded by the state of Baden-Württemberg).
- On its website, the PIC Stuttgart makes available an extensive collection of FAQs and the corresponding answers with regard to various IPRs and the services of the patent information office itself.
- Furthermore, papers by experienced patent attorneys on various aspects of IPRs are available for download on PIC Stuttgart's website together with literature recommendations and a list of relevant laws and regulations, official documents and brochures etc.
- Other services, like the organisation of information events, holding lectures at universities, teaching students (one day course; one beginner, one advanced course) the provision of brochures, information material etc., created by the German PO, copying services and a telephone hotline.

The German Patent Information Centres are working in close relationship with the German PO. Based on a contract, the German PO passes on patent documents on paper and on CD-ROM to all PICs and provides advanced Internet services (i.e. the DEPATISnet-Premium tool) exclusively for all German PICs. Furthermore, the PO offers free training courses for the PIC staff. In mid 2006, the co-operation between the PO and all German PICs was strengthened through an agreement, specifying the tasks that the PICs take over on behalf of the PO (mainly: regional provision of information on IPRs and creating awareness for the importance of IPRs). In return, the Patent Information Centres are supported by the DPMA by way of joint marketing activities, brochures, trainings etc.

After a modification of the patent law in 2001, 11 out of 24 Patent Information Centres have used the opportunity to accept patent and utility model applications and forward them to the German PO. Since October 2004, these 11 PICs are entitled to accept applications for trade marks and industrial designs as well. However, the latter service element is not in high demand due to a number of reasons: First, the introduction of the service was not accompanied by a PR campaign similar in scope to the campaign launched in 2001 for patent applications. Second, the documentation required for a patent application is much more voluminous than that needed for a trade mark application. Thus, the costs of packing and postage are higher. SMEs and patent attorneys can save/reduce more of these costs by filing the patent application with the regional PIC than they could in the case of trade marks.

An interesting element of good practice is PIC Stuttgart's information and training activities in co-operation with technical universities and colleges. Their aim is to make future technical engineers and thus future (potential) inventors aware of the IPR system and to provide them with IPR-research skills. Professors and their student groups visit the PIC Stuttgart listen to information speeches on IPRs and are assisted in carrying out IPR-researches on their own. Later on in their university career, students can use these skills for their practice-oriented seminar papers or their diploma theses. After entering (self-) employment, university graduates are assumed to transfer and introduce their IPR-related knowledge and skills for the benefit of their employers or their own companies. For already more than ten years the PIC Stuttgart carries out these awareness-raising activities among technical universities and colleges and one can assume that they have already developed a broad effect in the meantime. In 2005 alone, 24 student groups from technical universities or colleges with 431 participants were informed and trained by the PIC Stuttgart.

Evaluation and performance

Regular monitoring exercises and similar efforts are carried out to examine the performance and success of the service. For example, the PIC Stuttgart is requested to report twice a year on its activities and on the take-up of the service to its parent organisation ("Regierungspräsidium Stuttgart"). Reported data include number of users, type and number of activities, number of participants in information events and training courses, number of patent applications transferred to the German PO etc.

In addition, the PIC Stuttgart is operating other quality assurance mechanisms: an interesting example is the "Working Group Patents" (Arbeitskreis Patente), established in November 2001. The working group is accompanied and led by the PIC Stuttgart and aims at discussing present developments in the field of commercial IPRs that are of particular interest to enterprises. The working group also comments on the nature and quality of the provided services and is crucial for the development of the annual calendar of information and training events. This process safeguards that the service spectrum offered by the PIC and its information and training activities pay attention to the practical needs of (small and medium-sized) enterprises. Feedback from visitors and participants of information and training events is also collected. However, formal evaluation exercises by external evaluators have not been carried out to date.

The PIC Stuttgart states that it places much emphasis on a dedicated customer-oriented approach. According to experts, the reputation of the PIC Stuttgart can be considered to be high (as indicated by anecdotal evidence from users).

Regarding quantitative output data, one can revert, for example, to the number of patent and utility model applications referred to the German PO via patent information. They rose to 3,926 in 2004, an increase of about 43 %. The Patent Information Centre of Stuttgart was clearly in the lead, having received 2,705 applications. The great importance of the PIC Stuttgart is also underlined by the large number of users that utilise its services every year. In 2005, the PIC was visited by 6,000 users (in person) and received 8.000 information queries by telephone (lasting between 30 seconds and 30 minutes). Its newsletter reaches 4.000 subscribers (approx. 75 % SMEs), its information events and training courses were used by 1.435 participants. Furthermore, 614 private inventors and SMEs obtained initial legal consultancy provided by patent attorneys.

In the future, all Patent Information Centres are to become specifically authorised co-operation partners of the German PO at the regional level. The GPO and the Patent Information Centres will conclude a new co-operation agreement for this purpose. The centres shall act, in their respective regions, as qualified contacts in all IPR matters, raising the awareness for IPR among SMEs, universities and research institutions, in particular.

2.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

35 companies were surveyed about their experiences with the PIC Stuttgart. As German PICs stated to target mainly SMEs, it seems surprising at first sight that a large share of the interviewed users comprise larger companies: 35 % have more than 249 employees. One third have 50 to 249 employees, 23 % employ not more than 49 persons (see Graph 37). This can be explained by the fact that the PIC Stuttgart does not ask its users to provide detailed personal and/or enterprise-related contact data when registering for the take-up of its services. Thus, the PIC Stuttgart does not possess a large customer data pool that reflects the actual

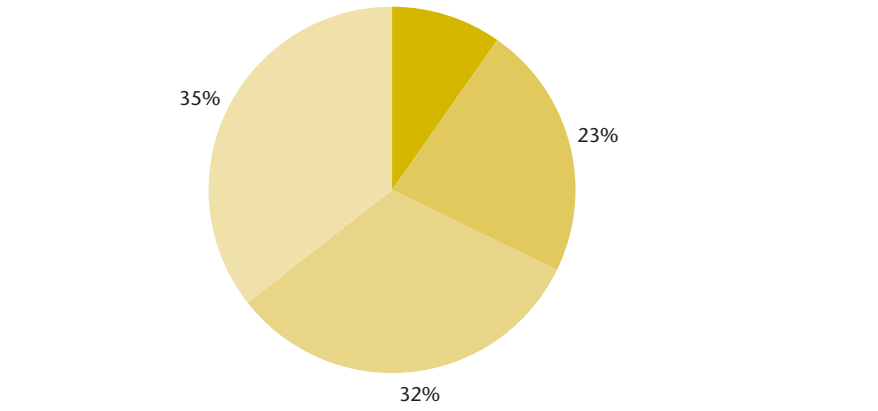
structure of its user groups. The existing data pool features mostly enterprises that have long-term relations with the PIC Stuttgart which are mainly, according to the service providers, rather larger-sized enterprises. It does not reflect the actual composition of users.

Indeed, an analysis of user groups conducted in 2005 by the Centre showed that 43 % of users are private inventors, 25 % SMEs, 15 % enterprise starters and 17 % self-employed/liberal professions. Due to the small sample size and the considerable high share of larger companies, results should be interpreted with great care when it comes to making conclusions for SMEs.

Between 2003 and 2005, service users were very innovative: Around 91 % users introduced product innovations (new or significantly improved products), while 57 % were able to introduce process innovations. 94 % conducted intramural R&D, 76 % were engaged in innovation activities related to design, and 68 % in the market introduction of innovations (see Graph 38).

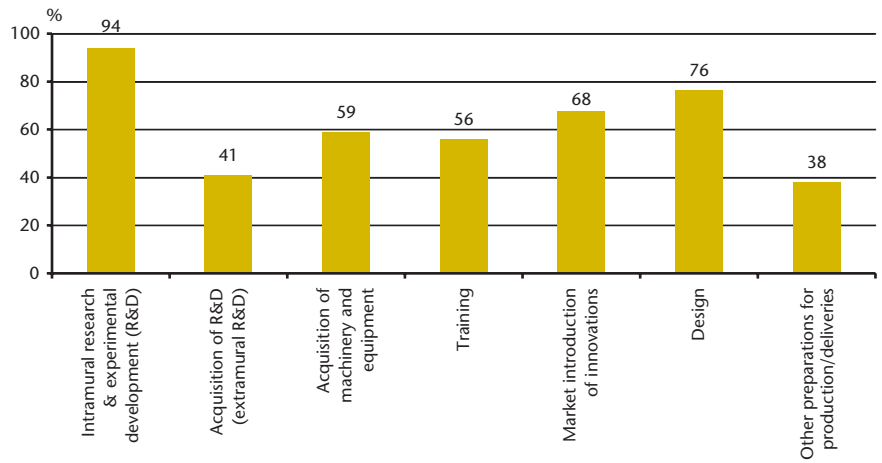
The interviewed PIC Stuttgart users most frequently take advantage of the service offerings of patent attorneys (see Graph 39), followed by the patent office (however, with much less frequent use). The importance of patent attorneys in IPR service provision in Germany is thus once again underlined (see also the case study on the SME Patent Action service).

Graph 37 PIC Stuttgart–Company size distribution in interview sample, 2005, percentage of respondents



Source: User Survey, n = 35

Graph 38 PIC Stuttgart–Innovation activities in interview sample, 2005, percentage of respondents*)



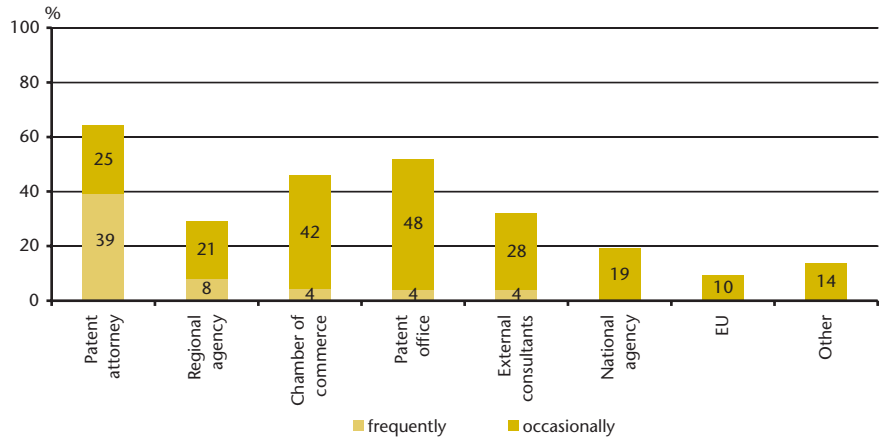
*) multiple answers allowed. Source: User Survey, n = 34

A high number of companies experienced hampering factors for innovation during 2003 to 2005, most complained about economic risks (for 31 % of high and for further 34 % of medium relevance), high innovation costs (for 26 % of high and 40% of medium relevance) and finance issues (high relevance for 26 , medium for 17 %) (see Graph 40). It can be said that nearly all listed hampering factors are somehow of importance.

Regarding the methods of IPR-protection, most users (77 %) registered design patterns and/or utility models between 2003 and 2005, filed for a patent or had a patent granted or valid in that time period (both shares amounted to 74 %, see Graph 41). A relatively high number of users employed also informal protection methods, i.e. 71 % relied on trade secrets, 63 % tried to maintain a lead time advantage over competitors. The importance of using the full spectrum of IP protection methods, depending on the company context, is thus again underlined.

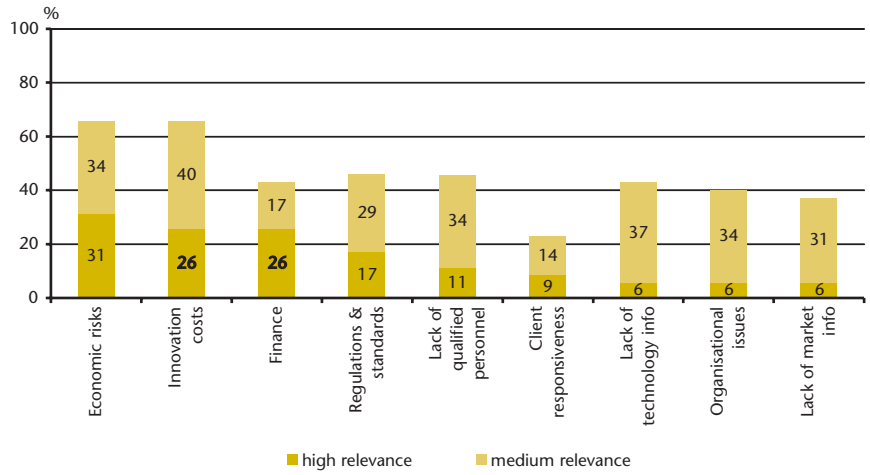
The costs stemming from implementing IP protection strategies (for 43 % of high and medium relevance), cost/benefit considerations (high relevance for 40 %, medium for 20 %) and the time to make IP protection work (for 34 % of high, and for 29 % of medium relevance) are perceived to be the main barriers for using IPR (see Graph 42). General awareness and organisational issues were considered less relevant. External barriers towards the availability of support services are perceived

Graph 39 PIC Stuttgart–Usage of different service providers by users, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 35

Graph 40 PIC Stuttgart–Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 35

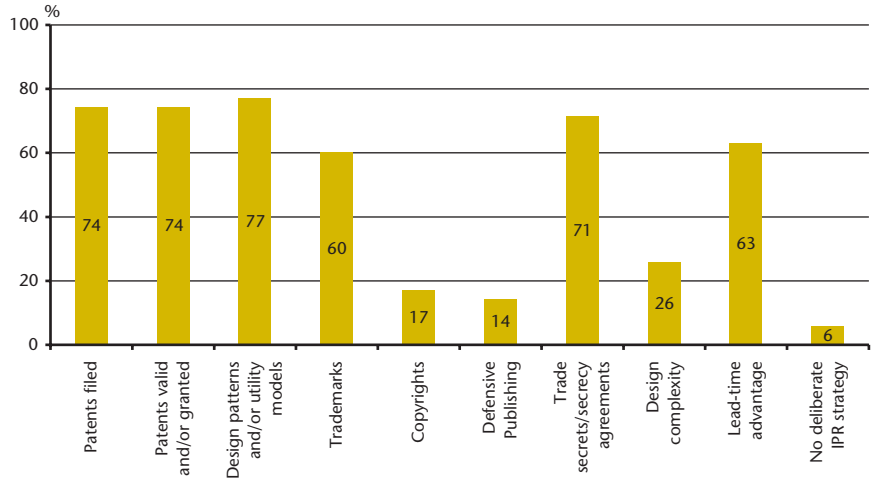
to be an important obstacle, too: the lack of accessibility (for 9 % of high and 34 % of medium relevance), the lack of information (high relevance for 6, medium for 31 %) and the lack of quality of available external support services (for 3 % of high and 26 % of medium relevance).

User out-reach and satisfaction levels

Users stated that they received information regarding PIC Stuttgart mostly through the service providing organisation itself; 46 % found information on the internet, 43 % heard about the service on information days, conferences or similar. Personal recommendations were primary sources for around 30 %; other sources mainly referred to information received from patent attorneys and the German PO.

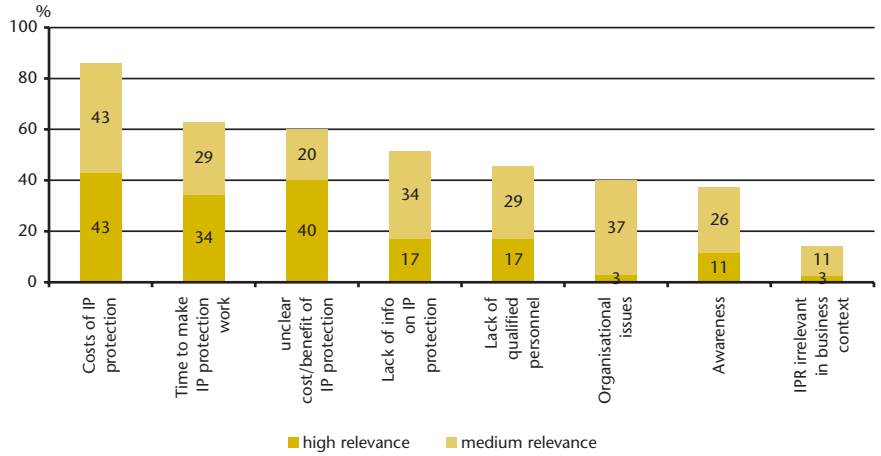
Overall speaking, the surveyed users were highly satisfied with the services offered by PIC Stuttgart. All the different aspects of service provision are rated with "1.5" or better (on a scale from 1= very satisfied to 4= unsatisfied); the highest grade was received for the competence of staff ("1.1"; see Graph 43). In addition, almost all users (97 %) rate the extent of the service offerings to be adequate. Spatial distance seems not to be a problem (for 56 % a very low-level barrier and for another 41 % a factor considered to be acceptable). 58 % think that the benefits of using this service clearly outweigh the efforts; 36 % state that the benefits are adequate to the efforts of using this service.

Graph 41 PIC Stuttgart–IP protection methods employed by service users, 2003 to 2005, percentage of respondents



*) multiple answers allowed. Source: User Survey, n = 35

Graph 42 PIC Stuttgart–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



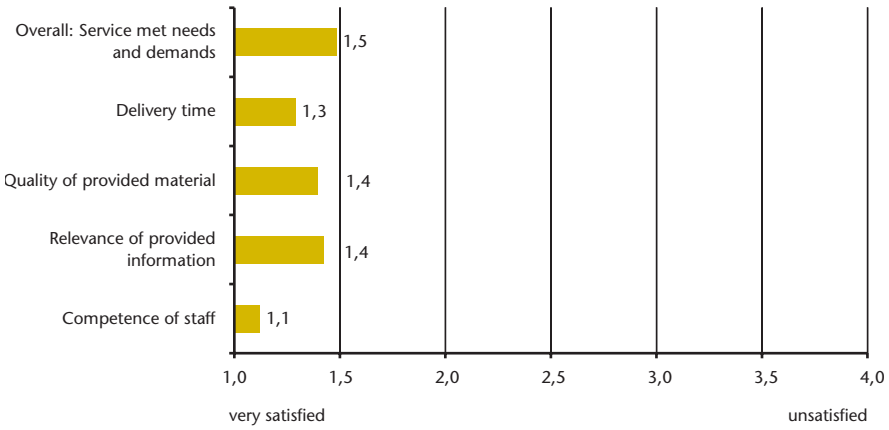
*) multiple answers allowed. Source: User Survey, n = 35

Additionality of the service

In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

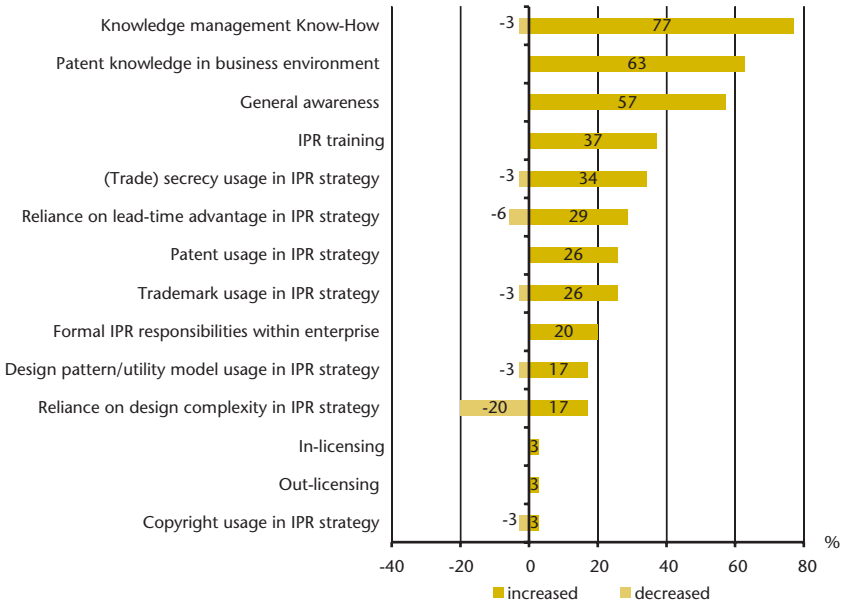
The PIC Stuttgart seems to have reached its main goals with a rather large share of the interviewed users: general awareness for the importance of IPR increased for 57 % of the using firms as did patent knowledge in the business environment (increased for 63 %) (see Graph 44), the PIC Stuttgart succeeded in provoking positive attitude changes towards the general knowledge management know-how; an interesting outcome which, keeping the overall objectives in mind, can be considered somewhat as a surprise.

Graph 43 PIC Stuttgart–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



Source: User Survey, n = 35

Graph 44 Behavioural additionality of the PIC Stuttgart, percentage of respondents *)



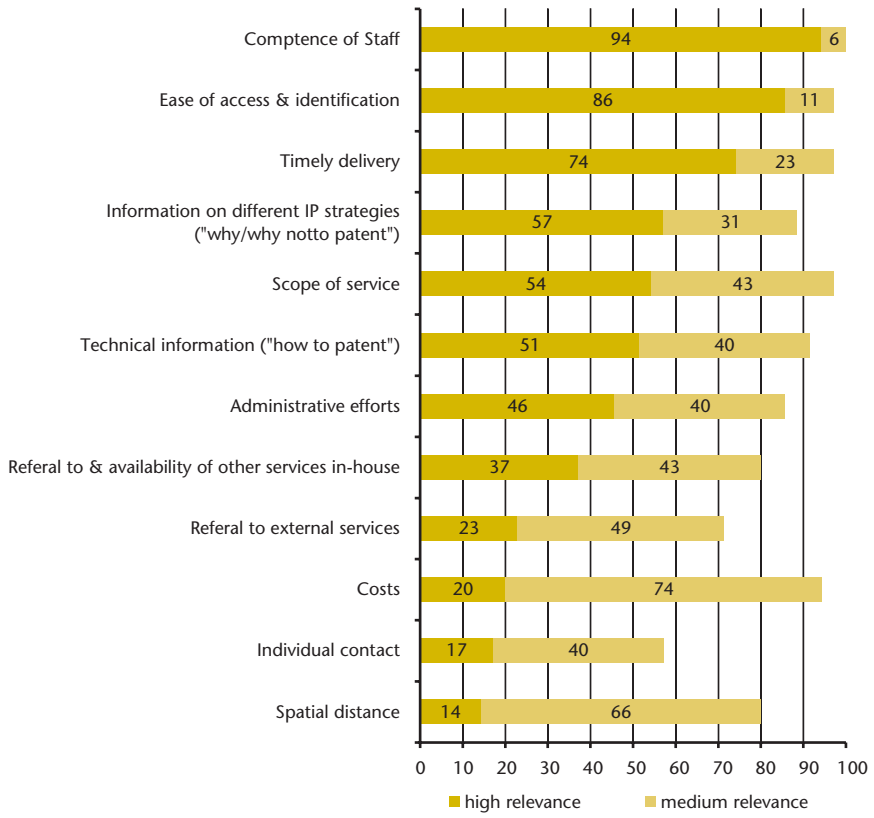
*) multiple answers allowed. Source: User Survey, n = 35

Interestingly, the share of users which placed higher emphasis on IPR training was rather high (37 %). Although informal IPR protection measures may not play an essential role within the service offerings, some changes in attitudes regarding these protections methods could be found here as well; the reliance on trade secrets and lead-time advantage in the corporate IPR strategies increased for 34 % and 29 % of the users, respectively. The highest decrease (attention level: -20 %) took place with respect to the reliance on design complexity (although it increased for 17 % of the users as well).

Some of these findings, especially the high impact on the general awareness level and patent knowledge in business environment can be corroborated by the results of similar services showing a patent centric approach and offering patent search facilities.

With respect to key quality factors, all users considered the competence of the staff involved in a service similar to the one offered by PIC Stuttgart as most important (for 94 % of high, for 6 % of medium relevance). A significant relevance level was also noted for the aspects "ease of access and identification" (86 % viewed this as a factor of high relevance) and timely delivery (for 74 % of high significance) (see Graph 45). These three identified key quality elements are also considered important quality factors by other measures offering a similar range of services (the Austrian service serv.ip or the Dutch service IOI, for example). Notable is also the fact that information on "why" to patent was considered more important than information on "how to" patent. Costs, individual contacts and spatial distance were considered to be factors of second order only.

Graph 45 Key quality factors for a service such as PIC Stuttgart, percentage of respondents



Source: User Survey, n = 35

2.3 Elements of good practice

The services exhibit the following elements of good practice:

- The German Patent Information Centres try to act as IPR "one-stop-shops" (i.e., integrated services) with respect to patent issues. Other forms of IPR seem to be less well covered, though;
- The centres are operated by qualified and experienced staff;
- Coverage is national, with a number of regional outlets;
- The cooperation with the German PO and the role as an intermediate between the user and other IPR related parties (i.e. the European PO, and, most importantly, patent attorneys) can be considered to be an asset;
- Availability of information and training activities in cooperation with technical universities and colleges;
- Reportedly high reputation;
- High reputation, especially among frequent IPR/patent users;
- Extensive awareness raising and information activities, a major number also in co-operation with regional partners in various regions of the Federal State of Baden-Württemberg;
- Operation of a working group with SMEs.

The "neutral view" as a public service provider is considered also as an important factor, although the lack of profit-orientation may imply foregone business opportunities, not only for the PIC Stuttgart but for all PICs nation-wide.

The following challenges arise for the PICs:

- Establishment of an evaluation culture: The PICs have not been subjected to external evaluations, yet;
- Getting better to know the customers: Though the SME working group may be an important instrument for tackling this issue, it could prove useful to elaborate on ways on getting hold of more contact information regarding its customers (e.g., maybe through conducting user satisfaction surveys or by offering newsletter subscriptions);
- The rather narrow focus on patents (as opposed to the full range of IP protection methods) may be an issue;
- Visibility of the service in the general innovation support arena;
- The different sizes and scope of the PICs may entail also large variations in the amount of available services at each regional outlet.

3. IK2 – Innovation and Knowledge

Country:		Sweden
Original title:		IK2 (Innovation and Knowledge), kunskapsbron
Target group:		SMEs
Coverage:		Regional (province of Scania (Skåne))
Category*:		(Pro-active) awareness raising measures/Public Relations
	X	Information Provision Services
		Training
		Customized in-depth consulting and advisory services/ points
	X	Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

3.1 IK2 (Innovation and Knowledge) in a nutshell

IK2 (Innovation and Knowledge) is an innovation support programme offered in the Swedish province of Scania (Skåne) designed to identify and support innovative projects and to provide relevant IPR support for individuals and companies to protect their ideas and/or inventions. In terms of marketing activities, the aims are stimulating and supporting new ideas which should lead to the development of innovation and production processes in existing companies and companies which are early stage. It was included as a case study in the scope of the underlying benchmarking study in order to illustrate how the topic of IPR can be covered also in the frame of general innovation support.

Overall, the objectives of the IK2 service are to provide assistance in innovation projects, in the course of which it also familiarises SMEs with IPR-related issues. IK2 helps to identify the innovation potential of a project and/or concept by offering specific innovation guidance; this guidance covers also relevant IPR information with a view on patents, trade marks, copyrights and registered design. Around 45 %–50 % of the services provided by IK2 are so-called *pre-study meetings*, which consist to around 50 % of advice concerning IPR issues. In addition, loans and grants are available for various purposes and stages of development of the innovation projects within IK2 – including IPR: the so-called "innovation loan" can be used to help covering the costs arising during the development process. In addition, the loan may also be used to finance the registration of different types of IPR.

Although IK2 offers support regarding formal means of IPR protection, the level of IPR competence is more of a general, basic nature; IK2's advice towards IPR issues consists mainly of strategic considerations: explaining the different IPR instruments (but also less formal IP protection instruments), how they work and which strategy may be best for the SME. For more complex IPR topics, such as legal advice, IK2 refers to external individuals and organisations, e.g. consultants, patent attorneys or the national patent office. These referral activities are part of a general match-making function embodied in the service, such as projects with research institutes and/or universities. Notwithstanding the referral activities to the open marketplace, IK2 users can still use financial support for IPR-related actions taken (i.e., pre-studies for patent applications).

IK2 has an explicit focus on SMEs; the IPR services offered cover the processes of development, registration and utilisation of IPRs. No restrictions are in place for certain industries or technology fields. The programme offers its services until a

possible commercialisation of an invention. However, the project initiators are required to display a driving force of their own. Therefore, only one ongoing project is allowed for a single SME.

In terms of geographical coverage, the service operates in the southern part of Sweden, mainly in the province of Scania (Skåne) only. The province of Scania has around 1.2 mio inhabitants which is about 13 % of the Swedish population.

Background and Resources

IK2 grew out of a merger of two innovation oriented organisations, Kunskapsbron and Innovation Skåne, but existed actually in different constellations since 1998. IK2 was built upon the experiences made in the pre-successor organisations. Today, IK2 is owned by Region Skåne, Innovationsbron Syd AB, municipalities of Skåne and Almi Skåne. Almi Skåne is the regional branch of Almi, a joint-stock company owned by the Swedish government and the country councils. Almi covers 21 regions in Sweden, where every region has its own version of IK2 (known by different names) which operates in more or less the same way. IK2 is financed equally by Region Skåne, Innovationsbron Syd AB and Almi Skåne.

Split into offices at three locations in Skåne (Malmö, Helsingborg and Kristianstad), IK2 is operated by a staff of around 7 people consisting of experienced experts with strong backgrounds in innovation management, economics and engineering. Moreover, advisors undergo additional IPR training during the year. It has to be noted tough that only few IK2 employees posses critical experience in IPR issues which might be, as experts state, a weakness when it comes to the ability of offering differentiated guidance with regard to IPR issues. In 2006, the budget for the whole service amounted to € 1.5 mio; around € 680,000 were used for direct service activities.

For 2006, a full range of target figures has been set for IK2: e.g., with respect to the number of customers (1.200 contacts), number of pre-studies (450) and knowledge means (60), innovation loans (40) and product development contributions (80).

Modes of operation

IK2 takes a very broad and informal approach to the support of innovation projects (as can be, for example, seen by the fact that the service does not use traditional application forms, but rather makes use of extensive interviews). An important pillar of the innovation programme is that IK2 staff accompanies the innovation projects straight from the beginning for a very long time and provides hands-on support on what is needed in every phase of the innovation project, including IPR. IK2 thus acts as a personal innovation coach with no limit in the number of hours of advice a participant can get.

The service package offered by IK2 primarily consists of guidance and funding. As part of the overall innovation assistance, the guidance can be seen as a general information service providing an overview regarding IPR within the areas of patents, trade marks, copyrights and registered design and tries to identify how important IPR issues are in the current situation of a company. If in-depth consulting is needed, the respective company is handed over to IPR specialists. In addition, the following financial packages are offered:

- Funding for pre-studies: These funds should enable persons to develop an idea and get necessary help from experts in areas such as commercialisation, technical evaluation, law and whether the innovation is innovative enough to apply for a patent, in order to investigate if it will be possible to pursue the idea further.
- Knowledge means funding: SMEs can receive co-financing for development projects. In development projects, IK2 assists in creating an active development project through knowledge sharing between researchers and industry: IK2 evaluates the development needs of the company, together with the company management, and thereafter introduces an appropriate co-worker to carry out the development project.

- Innovation Loans: This specific type of loan is offered to cover the development process of a innovation project with up to 50 % of the total costs. The loan is granted with a conditional repayment clause: if the project is successful the entrepreneur is obligated to pay the loan back. If this is not the case, the entrepreneur may pay back only a reduced amount of the loan, or in some cases even nothing. The loan can also be used to finance the registration of different types of IPR.

  The decision process, whether funding is granted or not, is regularly made by the so-called innovation council. Financial grants, which exceed € 1.300, have to be accepted by at least two persons in the council.

Further to the core service of IK2, and in association with NUTEK, the Swedish Agency for Economic and Regional Growth, IK2 runs also a programme called "Product Development for Small Enterprises in Skåne" (Produktutveckling i skånska småföretag, PUSS). Already established companies can apply for funding if they carry out product development in other areas than the ones they already operate in. The contribution can at most amount up to 50 % of the company's product development costs. Potential IPR issues can be also funded through this programme.

Evaluation and Performance

Regular monitoring exercises are in place to ensure sustainable developments within IK2 and its service offerings. On the other hand, IK2 is not subject to regular external formal performance assessments and/or evaluations. However, initiated by Region Skåne, an external evaluation was carried out recently by an external consultant (focusing both on the service's performance and the organisational structure).

The take up of the service throughout the region has been very promising. The following overview summarizes some performance indicators of IK2:

- IK2 serves around 600 clients per year. Out of these, around 150 can be estimated to use the services to address IPR issues.
- In 2006, 40 commercialisations (new products) were introduced by already established companies with support from the service. In addition, 4 license agreements were issued in 2006 with the help from IK2.

In 2006, around € 1.4 mio were used for financial support. In addition, IK2 received interests on their loans which can be used for other funding purposes. Parts of these funding and revenues were used for the above mentioned financial packages:

- Number of granted pre-study means: 170 projects; the average sum per project was approximately € 1.200. In total, around € 215 TSD were invested.
- Number of granted knowledge means: 34 projects; the average sum per project was approximately € 3.800. In total, around € 215 TSD were invested.
- Number of granted innovation loans: 17 projects; the average sum per project was approximately € 29.000. In total, around € 645 TSD were invested.
- Number of granted product development contributions: 28 projects, the average sum per project was approximately € 22.000. In total, around € 570 TSD were invested.

Other performance indicators, like number of patents filed with support from this are not used. The number of IPR titles, i.e. patents or other IPR, induced by this service is rather low. Therefore, no data is collected on these aspects. It is important to note that in the context of an innovation support programme like IK2, IPR does not need to play (and should not play) a central role– it is just a small, yet important, element, used and utilised the right way. Basic know-how transfer on IPR in a strategic context and the ability to refer to IPR specialists are key assets.

3.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

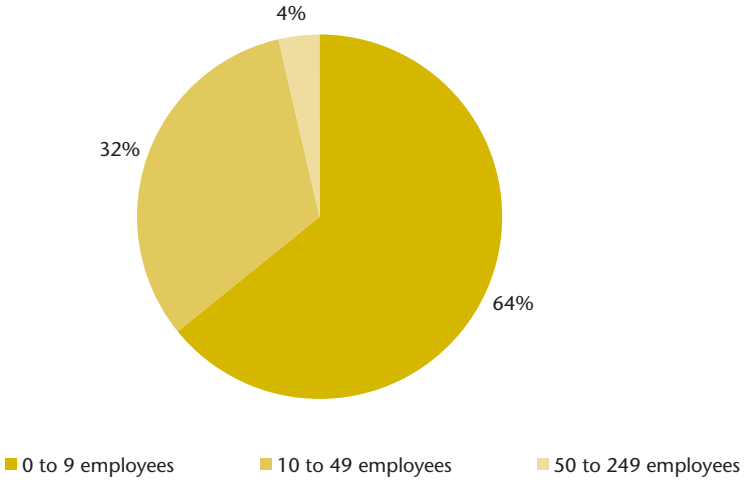
Characteristics of the user group

50 companies were surveyed about their experience with IK2. From the survey sample it seems that IK2 targest mostly micro-enterprises: around two thirds of the companies which gave information on this topic employ not more than nine persons, 32 % have 10 to 49 employees; only 4 % are larger companies with up to 249 employees (see Graph 46).

Between 2003 and 2005, 64 % of the IK2 users introduced product innovations (new or significantly improved products) onto the market; around 54 % were able to introduce process innovations in the same time (see Graph 47). Regarding innovation activities, almost all participating companies conducted intramural R&D. Equally, almost all employees in the surveyed companies are involved in R&D.

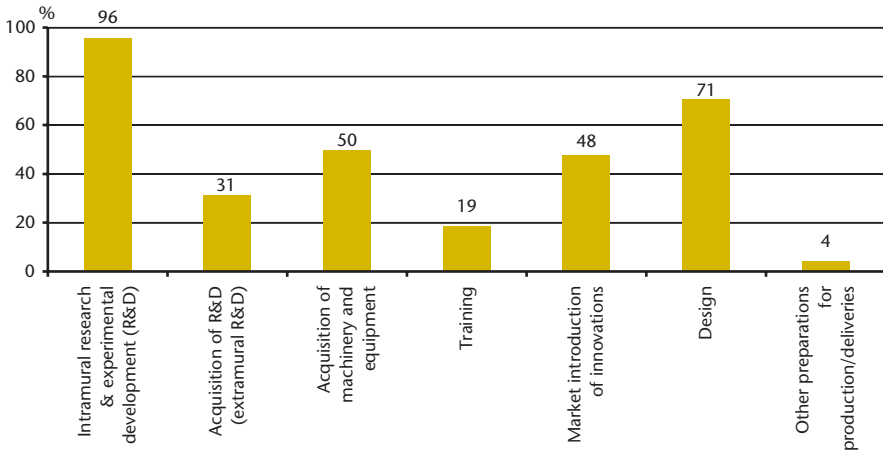
With regard to the type of service providers used for innovation and R&D projects, IK2 users draw mostly on the services of regional agencies (see Graph 48). Notwithstanding

Graph 46 IK2–Company Size distribution in interview sample, percentage of respondents, 2005



Source: User Survey, n = 50

Graph 47 IK2–Innovation activities in interview sample, 2005, percentage of respondents*)



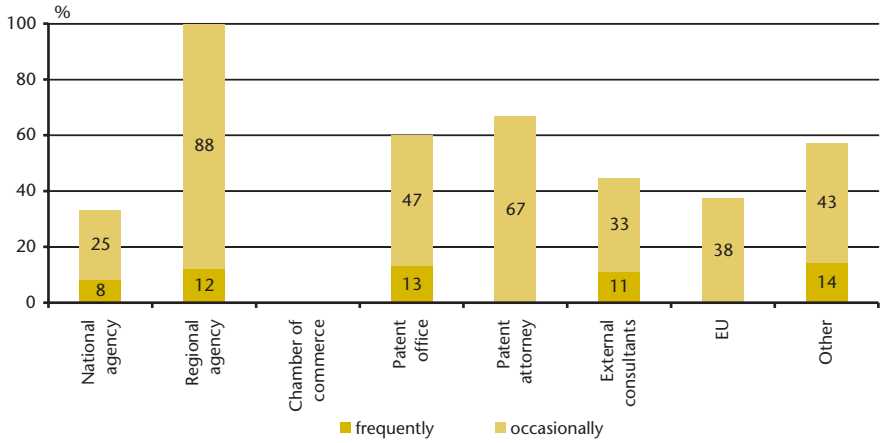
*) multiple answers allowed. Source: User Survey, n = 50

this, IK2 users refer also to a range of other institutions such as patent attorneys, the patent office, external consultants and various other organisations. This may be due to IK2's referral activities and the heavily used matchmaking functions.

During 2003 and 2005, a considerable share of IK2 service users experienced hampering factors for innovations. In line with the findings of other support services, companies complained mostly about high innovation costs (for 46% of high and 26 % of medium relevance), economic risks (for 42 % of high and for further 30 % of medium relevance) and the lack of appropriate sources of finance (of high relevance for 38 %, medium for 18 %) (see Graph 49). Insufficient information about the market, client responsiveness and organisational issues are reported to be of less critical nature.

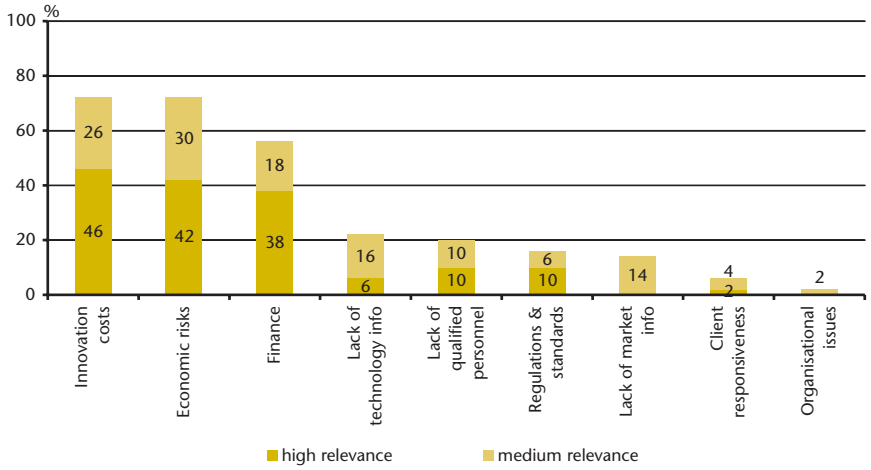
Between 2003 and 2005, 46 % of the IK2 users stated that they used trade marks to protect their IP, making this the most IP protection method utilised. This may point to the innovation projects being more incremental than radical in nature; the innovations may often lack the inventive step necessary for getting a patent granted. Incremental innovations are typical for Low- and Medium Tech (LMT) industries, which are usually associated with mature markets (see Graph 50). In such industries it is said that companies need to follow a differentiation strategy and foster, for example, branding activities. As trade marks are in their very nature used for branding, the high share of trade mark users provide further evidence that

Graph 48 IK2–Usage of different service providers by SMEs, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 49 IK2–Hampering factors for innovations, 2003 to 2005 percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

SMEs supported by the IK2 scheme may stem to a significant proportion from LMT industries.

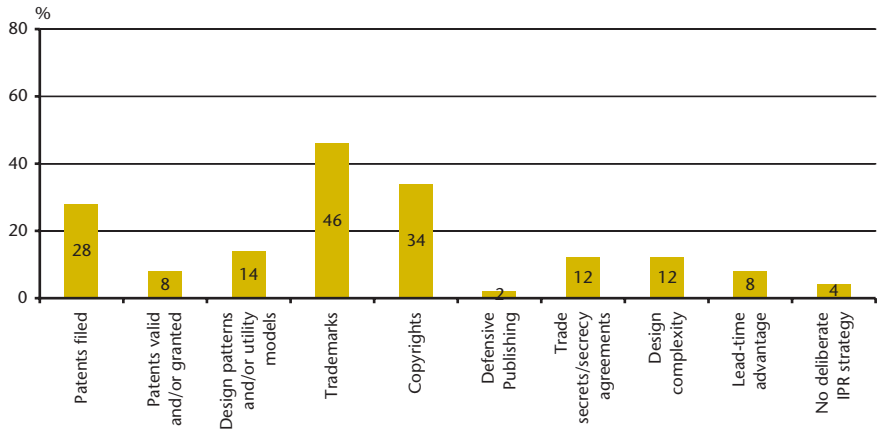
One of the main important internal barriers for using IPR is the fact that IK2 users consider formal IPR as not very relevant in the overall business concept (for 18 % of high, and for 8 % of medium relevance) (see Graph 51). – again a supportive argument for a significant share of LMT companies. The costs of IP protection (for 10 % of high, for 26 % of low relevance) play an important role, too. More interestingly, as the results also show that general awareness is still considered to be of a particular relevance as barrier, the demand for a broader IPR management counselling and advice could be an issue for the further development of IK2. This contrasts with the low share of answers seeing unclear cost/benefit consideration regarding IP protection.

User out-reach and satisfaction levels

The main source of information about IK2 and its services were consultants (37 %) and other information providers; a large part of the users where referred through "Almi", one of the major financiers of IK2. In at least one of the three office buildings where IK2 is located, Almi is represented, too. Compared to other information channels, only few companies (10 %) received information from the service providing organisation itself (see Graph 52).

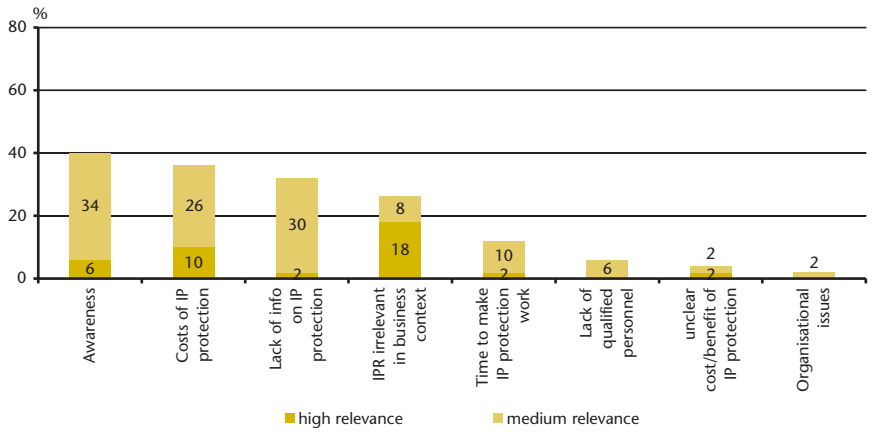
Regarding user satisfaction, IK2 shows one of the highest satisfaction rates among all the IPR support services analysed in the scope of the underlying study. Almost

Graph 50 IK2–IP protection methods employed by service users, 2003 to 2005, percentage of respondents *)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 51 IK2–(Internal) barriers to using IP protection mechanisms, percentage of respondents *)



*) multiple answers allowed. Source: User Survey, n = 50

all users considered the extent of the service offerings to be adequate. Around 50 % consider the administrative burdens as quite low; for 45 % it is at least acceptable. Spatial distance is considered not to be a problem. As a result, practically all IK2 users think that the benefits clearly outweigh the efforts. This can be attributed to the long-term coaching function of the service providers which seemingly creates strong links.

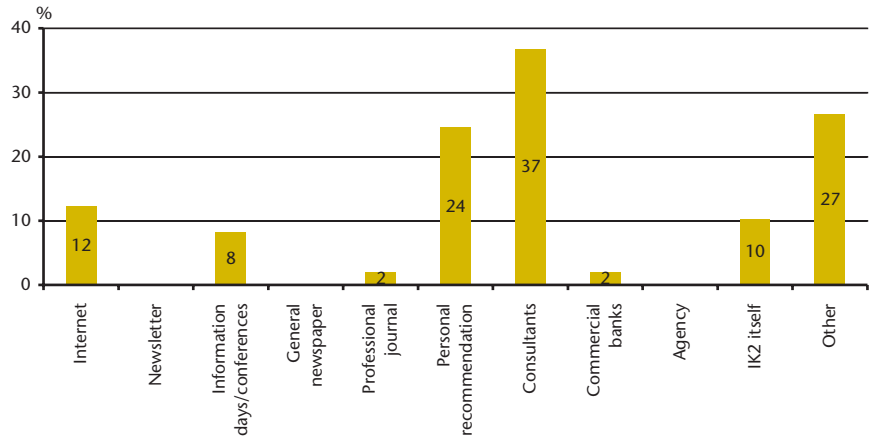
Additionality of the service

In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

Additionality effects are presented in Graph 53. Based on the survey results, 7 % of the undertakings would not have been carried out at all in the absence of support from the service. For around 36 %, the financial support speeded up the process, 22 % would have used other sources of finance. On the other hand, 13 % would have carried out the undertakings without any change or modification.

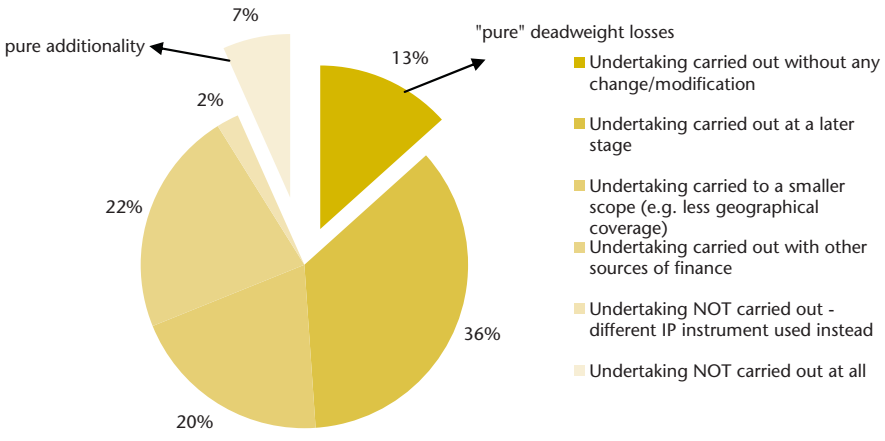
It seems that IK2 did a good job regarding IPR awareness. Quite considerable changes in terms of general awareness (increased for 42 %) and management

Graph 52 IK2–Information channels, by which users got to know about the service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 53 IK2–Additionality of the financial subsidy, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

knowledge in IPR issues (40 %, see Graph 54) were recorded. The usage of patents in the business IPR strategy increased in 20 % of the companies, that of trade secrets for 16 %. Relatively little effects where achieved with respect to IP training needs, and the – already high – trade mark usage. Unsurprisingly, the measured effects are less in magnitude than with dedicated IPR support measures; however, as IPR is only part of an innovation programme, IK2 may have succeeded in making its users IPR aware exactly at the right time, when actually the topic of using IPR had arisen for the company.

Almost all users believed that individual contacts are one of the most important key factors of a service comparable to that of IK2 (see Graph 55). This underlines the coaching function. In addition, the competence of staff, matters of costs, timely delivery and the ease of access were also considered as key factors. Interestingly, spatial distance received high attention levels compared to other IPR support services. This might be explained by the fact that IK2 heavily relies on long-term close-tie relationship (coaching) from IK2, which needs some form of geographical proximity.

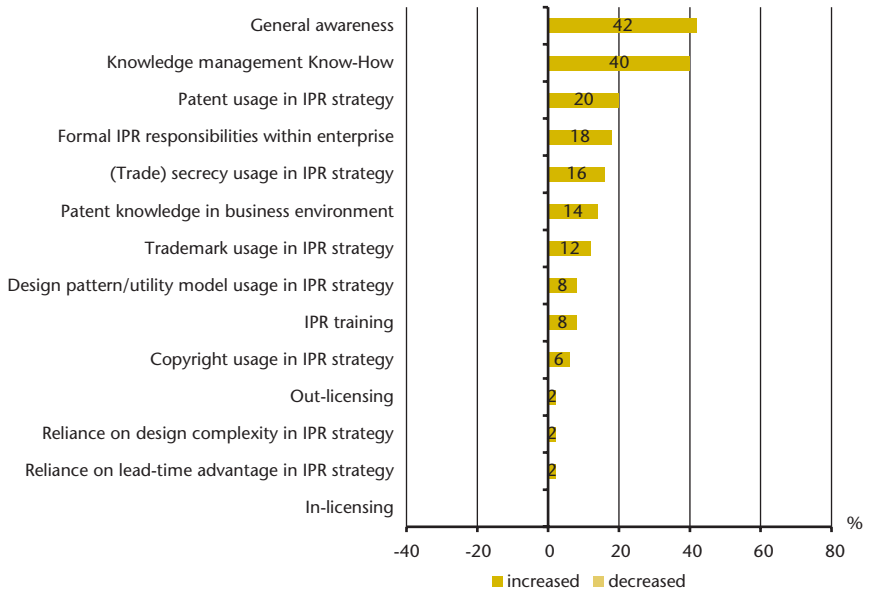
Questions on why to patent and how to patent were less important, probably as IPR is not the primary thrust of the programme. However, the little significance given to referral activities is surprising; it could be explained by the informal character of the service and the coaching character: specially the latter may overshadow many of the service activities that the user base does not actually recognise referral activities as a distinctive service element but rather takes it as part of the personal know-how of his/hers IK2 contact.

3.3 Elements of good practice

The service exhibits the following success factors (resp. good practice elements):

- IPR embedded into broader innovation management and innovation support;
- Customer-tailored and also informal coaching aiming to offer advice for different phases of innovation development;
- Individual contact;
- Long supportive period (throughout the innovation cycle);

Graph 54 Behavioural additionality of IK2, percentage of respondents*)



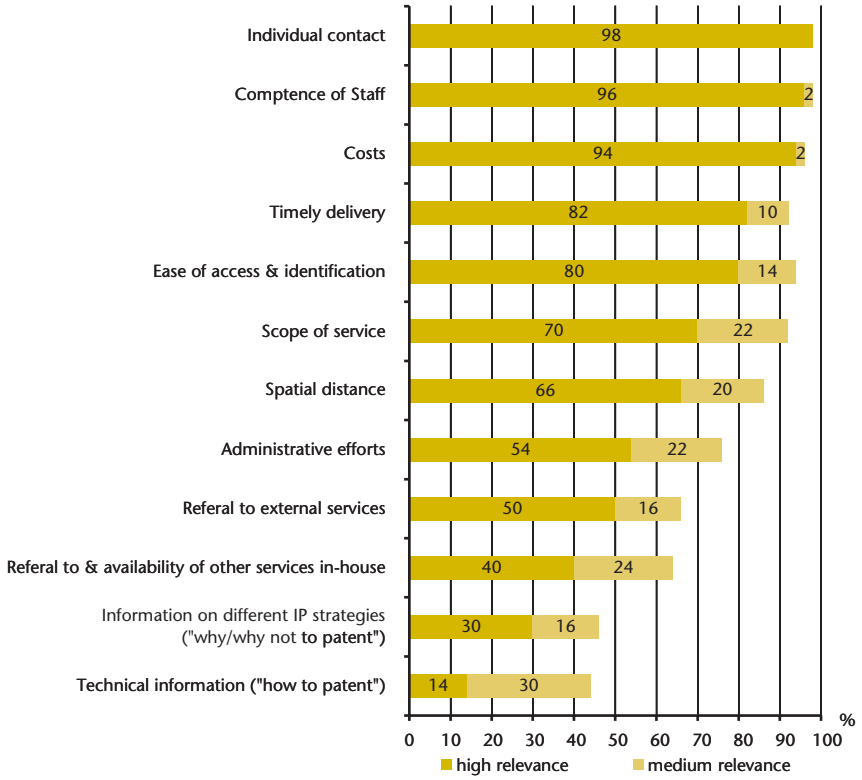
*) multiple answers allowed. Source: User Survey, n = 50

- Context-depended handling of IPR and IP protection methods (i.e., offerings come at a time when respective advice is needed) without preference given to a specific IP protection method;
- Competence in innovation management;
- referral activities and/or networking with external experts when it comes to in-depth IPR issues;
- Good reputation among Swedish SMEs;
- Regional outreach.

Probable challenges arise in the following fields.

- the lack of regular (external) evaluations;
- According to experts, a less structured decision making process concerning the administration and operation of the service which is probably partly due to the range of stakeholders (financiers) involved;
- Probably too little IPR scope which could be expanded and which is also why the general impact regarding IPR is rather low;
- Small size of the service team while at the same time broad coverage of different subjects places general constraints on the depth certain subjects can be treated (IPR being one example).

Graph 55 Key quality factors for a service such as IK2, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

4. Innovation by patent Information (IOI)

Country:		The Netherlands
Original title:		Innovatie door Octrooi-informatie (IOI)
Target group:		SMEs
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
	(X)	Information Provision Services
	(X)	Training
	X	Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

4.1 Innovation by patent Information (IOI) in a nutshell

The service "Innovatie door Octrooi-informatie (IOI)" (Innovation by patent Information (IOI)) was a service run by a development agency (Syntens) and the Dutch patent office. This institutional set up was the main reason for including the service as a case study in the scope of the underlying benchmarking study – it shows how development agencies and patent offices can cooperate for the better of SMEs. Furthermore, the service also shows how potential conflicts with the private sector of IPR service provision may arise and how they can be solved. Though the programme as such does not exist any more, its activities continue as part of day-to-day work of both organisations. The objectives of IOI were given as follows:

- To stimulate patent awareness among innovative, industrial SMEs and promote the use of patents as a source of technological and market information.
- To educate SMEs and transferring knowledge skills enabling SMEs to find information on patents, i.e. through patent database research (patent scans).
- To increase the awareness about the value of patent information of the staff at Syntens.

In essence, IOI is an example of a service that tries to foster the IPR system through patent database searches. One of the most important things that set this service aside from other such services is that it is offered and operated jointly by a technology/development agency and the national patent office. It thus aids to overcome the separation between the PO/IPR support service world and the world of innovation support of the development/technology agencies which is otherwise visible rather often across Europe.

In terms of marketing activities, the goals of the service are expressed in a much more operational manner:

- to inform and acquire new client companies;
- to assess the need profiles for each acquired company in the field of patent information;
- to carry out patent scans periodically; looking at specific needs for free[28] (till 2004);
- to refer to other parties (patent agents, patent office) to carry out patents scans in a later stage to be paid for and deepening research (from 2004 on).

[28] This objective has been changed afterwards due to complaints by a patent attorney.

These activities were focused on improving the knowledge among SMEs about patent information as a source of technological and market intelligence. Companies were to become aware of the importance of patent information, especially in the early stage of an innovation process, and to get new ideas for adapting/improving innovation processes.

The IOI-programme was offered solely to SMEs. One important aspect to note is that IOI focused on (information on) patents only and targeted primarily the first phase of IPR usage and not, for example, matters of utilisation. According to experts, this is partly due to the fact that the utilisation of IP is not yet very common amongst Dutch SMEs, and that fostering the first phases of IPR usage is more important in the current context and a pretext for next steps to be taken.

The service was offered nation-wide. A slight regional bias was given by the fact that the partner organisation Syntens has, according to its website, around 16 offices across the Netherlands, most of them located in major cities.

Background and Resources

Developed by the Dutch Patent Office which is offering technical knowledge and information on patenting, IOI was jointly operated with the Syntens organisation. Funded by the Dutch Ministry of Economic Affairs, the Syntens organisation is a non-profit technology development agency aiming at providing advice and support to innovative SMEs in various fields. The agency was a partner to the Dutch PO from the beginning of the programme.

After a preparation time of around 12 months, where stakeholders were actively involved in the design of the service, user needs were assessed and a development plan designed, the programme was enacted on July 1, 2001 with a formal running time till July 30, 2004. Following positive evaluation results, the service running time was extended till June 30, 2006. The total budget allocated for the time frame July 1, 2001 till June 30, 2006 amounted to € 6.75 mio, of which about € 100,000 p.a. (€ 450,000 in total) were used as overheads for database costs, housing and Public Relation. The staff operating IOI amounted to 80: 75 part-time from Syntens, 5 fulltime from the patent office stationed at Syntens offices. The advisors working in the programme are/were highly skilled; most oft the staff (Dutch PTO and Syntens) possesses a technical background.

A whole set of tools was used to disseminate information on the scheme: Advertisements in special journals were designed, a website was set up, folders were produced and road shows organised. Furthermore, SMEs were contacted pro-actively; multipliers/existing networks came into use. While IOI ended officially in 2006, activities of the programme continue as integral parts of the ongoing cooperation activities between the Dutch PTO and Syntens; PTO-advisors are still based at regional Syntens offices but financed by the Dutch PTO.

Modes of operation

The service package consists primarily of the following components:

- Information services and training programmes (trainings courses offering general information on patent and patent databases are held by the 5 PTO consultants at Syntens offices).
- Tailor-made advice services regarding the use of patent information, and subsequent referring of SMEs to specialised commercial parties,

In addition, Syntens offers co-funding to hire external experts which support SMEs in questions of IPR and related issues. It has to be noted, though, that this co-funding scheme is offered by Syntens only and was not part of the IOI-project.

The mode of operation was/is as follows: First enquiries are dealt with at Syntens offices. Syntens offered information on IOI and referred parties to the core IOI staff (the five employees form the Dutch PTO). The core staff provided the necessary information on patents and on the benefits of using patent databases. A need profile with respect to patent information was set up for each company.

Before 2004, periodical patent scans with brief information on new patents were provided proactively and free of charge to member companies. After a complaint of a private party (patent attorney), this service element was terminated. After 2004, the accent of the measure changed into enhancing the search skills of the companies and offering, besides general advice on patents, more in-depth consulting on how to use patent databases (based on the company need profile). To this end, PTO advisors and Syntens advisors offer a workshop, namely "searching in digital patent databases" which consists of a brief introduction to the patent system to enable individual companies to search in the patent system for themselves. On request, a first patent scan demonstrating how searches are performed is still carried out – for further scans, SMEs are referred to commercial parties such as patent attorneys. Thus, a win-win situation is created: The programme fulfils its goals (creating IPR awareness), and at the same time the private sector benefits form an enlargement of the market.

Regarding other IPR tools such as trade marks etc. users are referred to institutions outside Syntens. As IPR management in SMEs nowadays calls for a more integrated approach which has to tackle all available IP protection methods, experts state that the issue of bringing the know-how on different IP protection methods together may be an area worth looking at for Syntens.

Evaluation and Performance

Regular monitoring exercises, interim and one ex-post evaluation helped to manage the quality of the programme. The interim evaluation results of 2004 report some positive impact on turnover of the assisted companies. Aside from that, the evaluation also measured user satisfaction, which can be considered to have been quite high. The overall positive conclusion of the evaluation was one reason that the IOI project was extended from 2004 to 2006.

The user base of IOI is mainly composed of companies in manufacturing industries, and to a lesser extent of companies active in technologically-oriented wholesale industries or business services. In 2004, 481 SMEs used the service. 207 of those were referred to the patent office for technological and legal matters, 136 to patent attorneys for patent scans. In total, about 2,000 SMEs were advised on the use of patent databases in the period of 2002 to 2006.

4.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

50 companies who used IOI were questionned about their experience in the course of the user survey of this study. The distribution of the user sample shows that the IOI targeted mostly micro-enterprises: Two thirds of the companies employ not more than 9 persons, 26 % have 10 to 49 employees; only 6 % are larger companies with up to 249 employees.

Between 2003 and 2005, two third of the service users introduced product innovations (new or significantly improved products) onto the market, more than 50 % came up with process innovations. Almost 90 % of the service users conducted intramural R&D, 71 % were engaged in the market introduction of innovations. Once again it can be seen that the users of IPR support services are highly innovative and very much active in R&D.

Surprisingly IOI users made no frequent use of support and/or funding from public or private innovation support providers (see Graph 56), but rather refer to service providers only occasionally. Service users took at most occasional advantage of the service offerings of national agencies, followed by other support providers and external consultants. This points to the fact that most users may be long-term

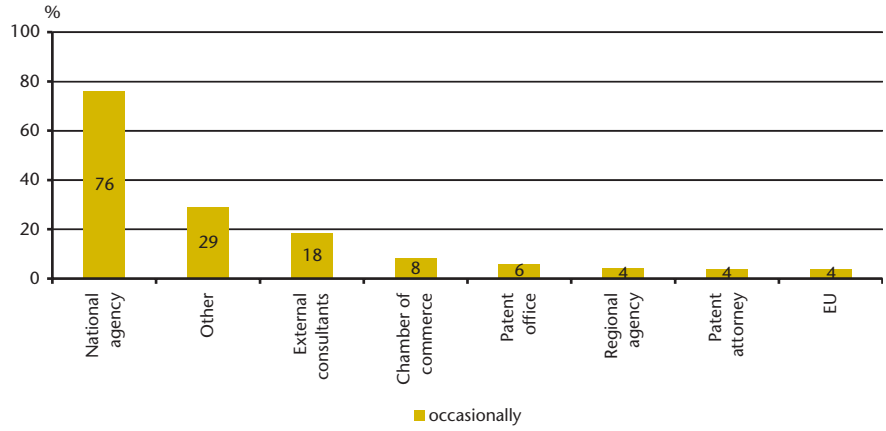
customers of Syntens who are now offered an additional service. The innovation agency thus seemingly acts as an entry point to the IPR system. Another indication for that is the low usage levels of patent attorneys (in other countries patent agents play a much larger role as entry points or for marketing/disseminating information on IPR support services).

Regarding hampering factors for innovation activities, companies complained mostly about the lack of appropriate sources of finance (of relevance for 56 %), organisational issues (important for 28 %) and lack of qualified personnel and information on markets (important for 10 %, respectively) (see Graph 57). Interestingly, innovation costs and economic risks are reported to be of less critical nature – as are regulations and standards, client responsiveness and lack of technology information. These results have to be interpreted with care, though, as it could wrongly imply that all hampering factors are mostly of an external nature.

Between 2003 and 2005, 60 % of the service users stated that they used trade secrets and/or secrecy agreements as most important IP protection method (see Graph 58). Patents were filed by 40 %, and 26 % had a patent granted or valid. Usage levels regarding informal IP protection methods were quite high, too, and even higher than that of formal IPR. This result is in line with other empirical findings.

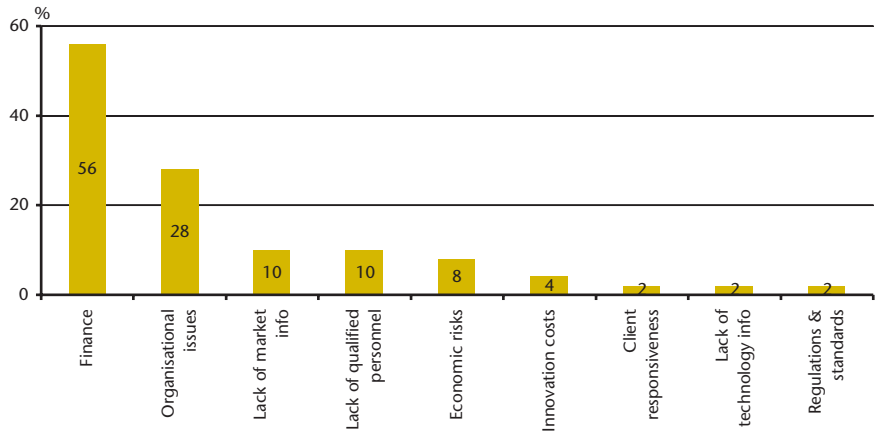
The main internal barrier for using IPR methods is that IP is not considered of particular relevance in the analysed enterprises (for 24 % of high relevance) closely

Graph 56 IOI–Usage of different service providers by SMEs, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 57 IOI–Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



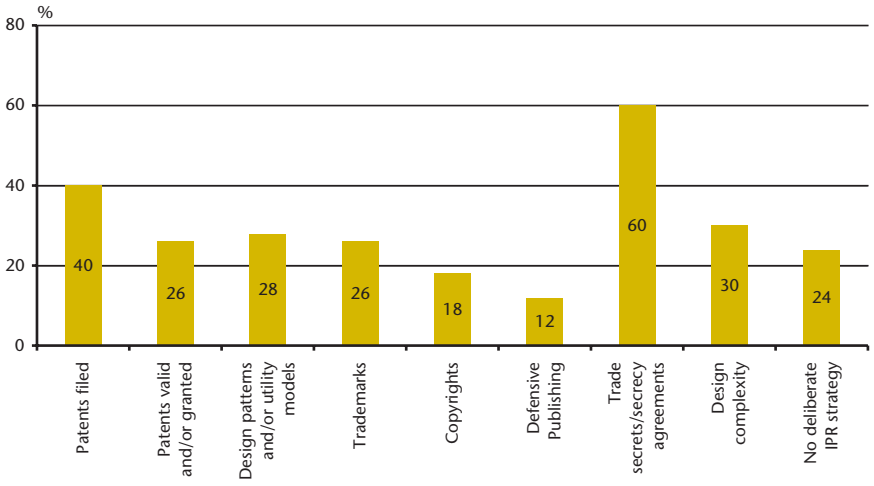
*) multiple answers allowed. Source: User Survey, n = 50

followed by the costs of IP protection (for 22 % of medium relevance; see Graph 59). The first result maybe due to the approached Syntens user base, which may to a significant extent simply not be prone to IPR usage (e.g., because they are not IPR-affine industries). The on average low barrier levels for all aspects listed are in contrast to empirical findings from other sources – two explanations are possible: Either the companies are truly well aware and professional in the handling of IPR (and that IOI did a pretty good job) – which could be backed up by the high usage levels of different IP protection mechanisms. Or awareness levels of the difficulties encountered are low because very few companies actually engaged in IPR protection in a serious manner, thus they have no experience in dealing with IPR in real life.

User out-reach and satisfaction levels

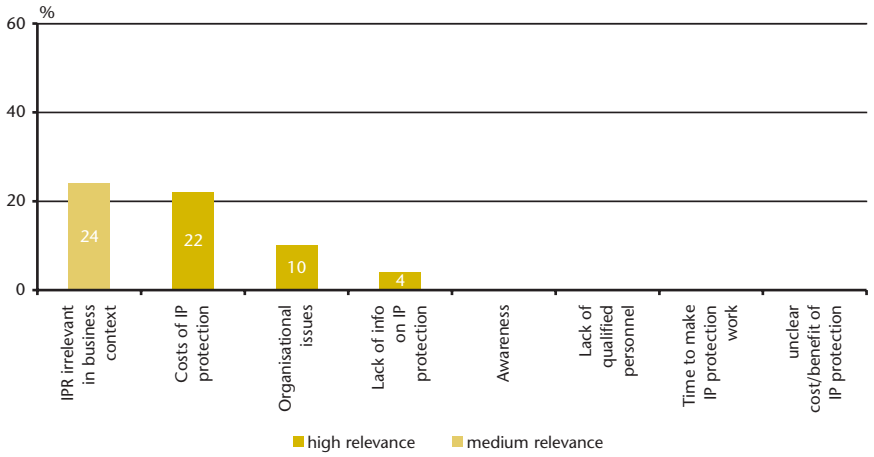
Almost 80 % of the users of Innovation by patent Information got to know about the service through the service providing organisation itself (again indicating that Syntens is the entry point for this type of IPR service, and that "classical" Syntens customers may be the first and primary target group); around 20 % received information about IOI from other sources. Other channels (i.e. classical media advertising, internet or agencies) have not played a role at all as a source of information.

Graph 58 IOI–IP protection methods employed by service users, 2003 to 2005 *)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 59 IOI–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed .Source: User Survey, n = 50

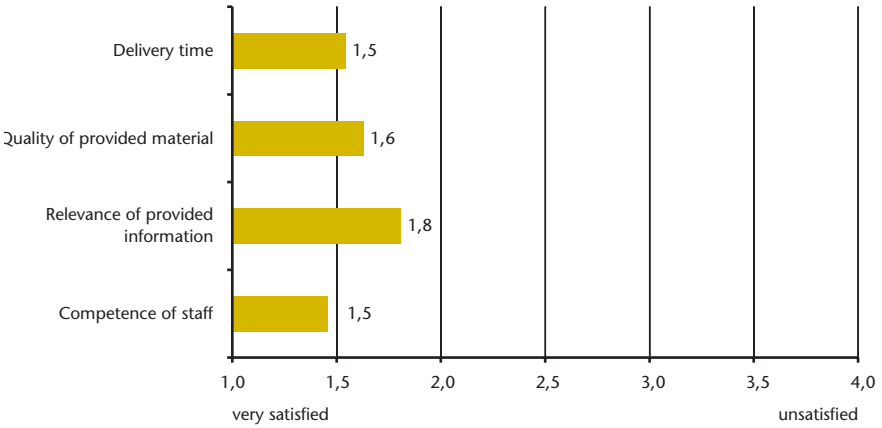
Overall speaking, users were, on average, very satisfied with key aspects of the offered services by IOI. As can be seen from Graph 60, all aspects (delivery time, the competence of staff, the relevance of the provided information, etc.) are graded with "1.8" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied). 60 % of the users rate the extent of the service offerings to be adequate. On the other hand, a rather large share of users (40 %) thinks it is too narrow/ superficial.

Nearly all users consider spatial distance (for 50 % a very low-level barrier and for another 46 % a factor considered to be at least acceptable) not to be a problem. 64 % think that the benefits of using this service clearly outweigh the efforts. On the other hand, 22 % state that the benefits are clearly below efforts.

Additionality of the service

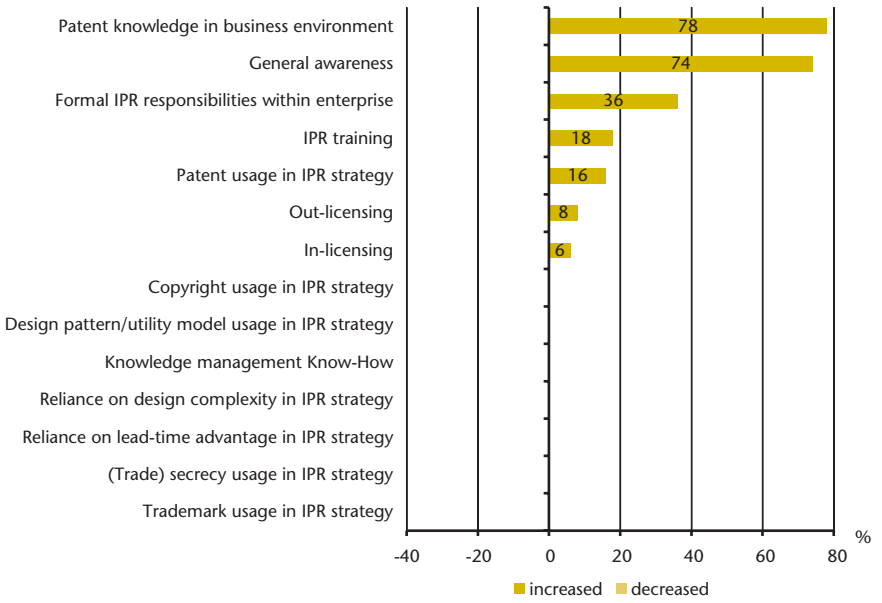
A closer look at the changes in attitudes toward IPR protection among users reveals that IOI was able to achieve its aims rather well (see Graph 61). Keeping in mind the strong overall focus of the IOI-programme on patents and not so much on other IPR tools such as trade marks and also the fact that trade secrets and/or

Graph 60 IOI–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



*) multiple answers allowed,. Source: User Survey, n = 50

Graph 61 Behavioural additionality of IOI, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

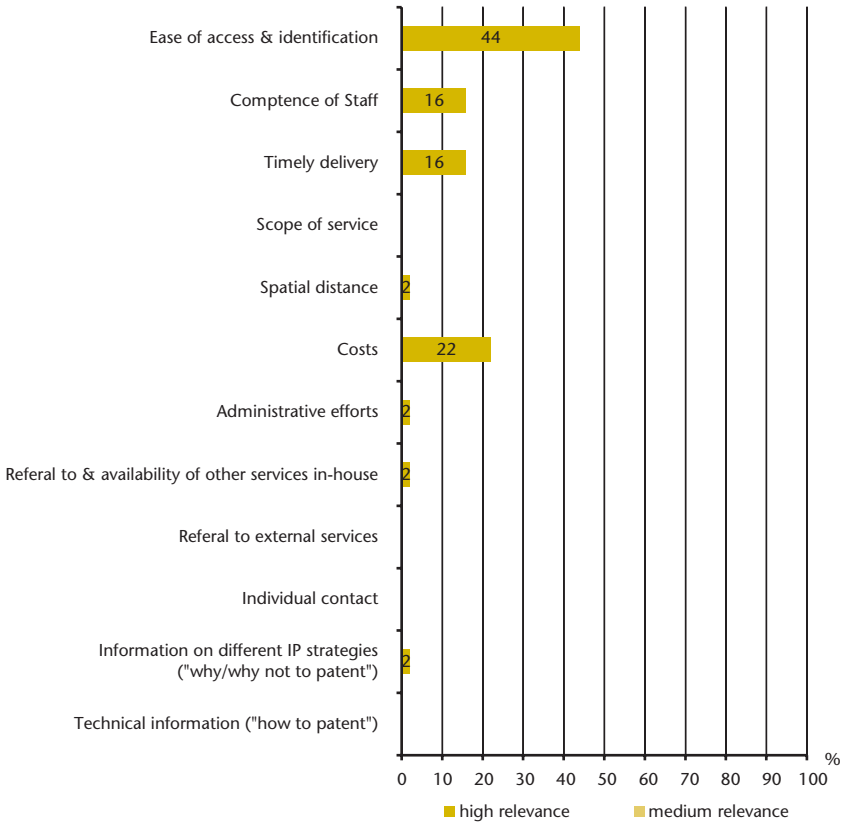
secrecy agreements are (or at least were) the most important IP protection methods for the users of IOI, it seems not surprising that the most significant changes took place with respect to patent knowledge in the business environment (increased for 78 %) and general IPR awareness (74 %). Compared to these findings, the attitude towards other formal IPR protections methods, i.e., trade marks, design or copyrights, has not changed. Interestingly, also, the usage of trade secrets etc. did not diminish. It seems that most users used the patent information scans not so much for patenting purposes, but rather to inform themselves about the possibilities of such tools and about the patenting environment of their businesses.

Between these interesting insights, the rise in patent awareness and the pre-existing good knowledge about other formal IPR protection, no change was detected in attitudes concerning general knowledge management know-how. This outcome seems plausible: the IOI programme is simply not meant to offer consulting on IPR-strategies and IP management and has a narrow patent focus. In case customers are not interested in patents, they are most likely referred to other services and departments within Syntens which means that they never actually used IOI.

In this light, external experts stated that the first screening of SME requests by Syntens is often done without the necessary focus on the current situation and the actual needs of the company towards IPR protection. This would indicate a blind spot towards the subject of IP management and the usage of other IP protection instruments.

For the users of IOI, the most important elements of a service comparable to IOI are the ease of access and identification and matters of costs (see Graph 62). Competence of staff and timely delivery were also considered as key factors. The

Graph 62 Key quality factors for a service such as IOI, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

scope of the service, individual contact and the referral to external services seem not to be such important parts of this kind of measure, according to the IOI users.

Again, this has to be seen in the light of the fact that probably some more general IPR related request does not reach the IPR people. The IOI seems to be so much focussed that only a limited number of factors are important for the actual user group. However, there seems to be a clear demand for other IPR services in addition to IOI, as indicated by the answers given above that the scope of the service may, at last for a larger share of users, be too narrow.

4.3 Elements of good practice

The service exhibits the following success factors (resp. good practice elements):

- Cooperation between patent office and technology development agency:
  - …allows for intrainstitutional learning;
  - …would allow for integrating IPR in general innovation support;
- National offering with refering regional outlets;
- Thorough design and set up process;
- Existing positive evaluation culture;
- Accoring to experts, adequate funding of the programme;
- Internal referral activities;
- Good working relationships with private sector IPR offerings in a “win-win” situation (IOI achieves its goal while it also serves as an entry point for the private sector, enlargeing their market);
- Rather high user take-up and high satisfaction levels;
- Continuation of IOI activities after termination of the programme as part of day-to-day activities.

The service experienced the following challenges:

- Patent centricity: Informal IP protection mechanisms and less formal IPR – thus IP management – are not covered;
- User base segmentation: High share of users for which IPR is not a subject. In this context, the evaluation results report also a distinction between well-experienced IPR users (which have detailed questions about IP protection methods) and IPR beginners (which seemingly want to use patent infromation as source of inspiration) It was recommended to place a focus on the latter group.

5. IP Prédiagnosis (FRA)

Country:		France
Original title:		Pré-diagnostique propriété industrielle
Target group:		SMEs
Coverage:		National
Category*:	**(X)**	(Pro-active) awareness raising measures/Public Relations Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

5.1 IP Prédiagnosis in a nutshell

Provided by the National Industrial Property Institute (INPI–Institut national de la propriété industrielle; the French Patent Office), the overall aim of IP Prédiagnosis is to analyse SMEs as a whole with regard to their IP and IPR usage. The service is thus not focused on a particular project or invention. Experts undertake an in-depth analysis of the IPR management in participating companies to evaluate the importance of IPRs and their protection. The service addresses enterprises that have not registered a patent before (within the past 5 years) and usually do not possess an IPR strategy and/or relevant IP management. The service was selected as a case study in the scope of the underlying research for a number of reasons, most notably though for its broad approach towards IP protection, its excellent interaction with other services (1er brevet from OSEO Innovation) and the well established collaboration patterns between the service-offering patent office and the technology/ development agencies.

The overall objectives of IP Prédiagnosis are

- to increase the overall awareness and understanding of IPR among SMEs
- to assess the status and potential of the IP within a specific company and
- to offer information and advice to support the establishment of an IPR strategy

During an IP prédiagnosis (which can last between 1.5 to 2 days) the service provider (an IP rights expert) discusses the company's situation with its manager in order to identify the enterprise's needs, wants and expectations in the field of IPR. The intended benefits are to raise enterprises' awareness of their IP and of all the tools that they can use in order to protect its IP and/or to put it to its best use. Thus, formal IPR (such as patents) as well as informal IP protection methods are subject of the advice given.

The overall target group is composed of all industrial SMEs that have not registered a patent in the last 5 years. No specific sector is explicitly targeted, but "traditional" industries (such as the textile industry) and services which are usually less aware of IPR issues are mainly aimed for. There is no size restriction either; however, SMEs which benefit from the service tend to have less than 20 employees.

IP Prédiagnosis is part of a national policy for the promotion of IPR and of innovation in SMEs; the service operates nationwide through regional INPI Centres and is not limited in its duration.

Background and Resources

In 2004, based on the analysis of various IPR predecessor services, IP Prédiagnosis was established as a service with the focus to offer a simple, basic tool for SMEs for the promotion of IPR. After a preparatory phase of around 9 months, IP Prédiagnosis

was set up by the National Industrial Property Institute (Institut national de la propriété industrielle (INPI)) together with the Ministry of Industry and a private consultant company specialized in IPRs (Cabinet Algoe). The scheme operated on an experimental/pilot basis for approx. 6 months in order to promote the service and make sure it would be implemented the same way in every region. At the same time, a guidebook on how to manage such a service was elaborated and published.

Today, the service is provided by INPI (50 % of all pre-diagnoses are done by INPI) in collaboration with external experts. INPI can be considered as the central institution concerning IPR in France; it offers a wide range of IPR services for companies (consulting, patent database search services, etc), operates as the official registration office for IPR for companies and has an important lobbying function regarding IPR policy. INPI works in close collaboration with the following institutions, as regards also the operation of the IP Prédiagnosis service:

- Oséo innovation (French national innovation agency formerly called ANVAR),
- DRIRE (industry, research and environment regional direction),
- Chambers of commerce and ARIST (regional strategic and technology information agencies),
- CRITT (innovation and technology transfer regional centres).

These co-operations reveal one important success factor for this service: All the institutions are part of the so-called RDT technology development network (Réseaux de dévelopment technologique) which aims to promote intellectual property in France. Each regional INPI branch (offices/centres; 11 in France) is in direct contact with its regional technology development network (RDT) office. The network is used mostly to inform local enterprises about IP Prédiagnosis and other related IPR services. The promotion of the service through this network is, according to interviewed experts, a very efficient approach to reach a selected target group.

IP Prédiagnosis is provided by around 130 experts; 50 % working at INPI, 50 % are external experts. Regarding professional qualifications, the staff at INPI include IP experts with diverse backgrounds (e.g., engineers, lawyers or consultants) and training in relevant IPR issues. These experts are usually spread over the various departments at INPI and contribute to service quality by supplying different experiences, knowledge and viewpoints.

Each pre-diagnosis session costs around € 1,500; the sum is fully covered by INPI. Nonetheless, supported SMEs are being made aware of the monetary value of the pre-diagnosis consultancy work and the fact that the costs are fully subsidised. A total budget of around € 400,000 p.a. is allocated to the service in order to allow for at least 250 IP assessments each year.

Besides promotion on the internet, the service provider makes especially heavy use of personal/ pro-active contacting and the usage of multipliers/existing networks (i.e. the RDT network) to reach out for the customer group (and also for its marketing and public relations activities). As a matter of fact, pro-active contacting can be considered the primary “distribution” channel.

Modes of operation

Although IP Prédiagnosis is offered by INPI, pre-diagnosis activities are not carried out by INPI staff alone; around 50 % of the pre-diagnoses are executed by external experts working under a contractual agreement with INPI.

A pre-diagnosis is carried out in the following way: An IPR expert, either from INPI or proposed by INPI, undertakes a first assessment of the company’s IP based on different analytical methods. A standardised guidebook has been specifically designed and tested for this purpose. Moreover, the expert analyses the state of the art of the IP management and/or strategy in the enterprise, evaluates the significance of IPR in the present situation and formulates issues that can probably influence the future ambitions of the company. Needs, priorities and expectations

are identified and put into a report outlining the different options for the enterprise to protect and use its IP.

If necessary, interested companies are referred after the IP assessment to complementary services; these could be offered within INPI or through partner organisations. An important example would be the "first patent"–Technology network service (1er brevet) provided by Oséo innovation (see also case study nr. 15).

It should be underlined that the IP prédiagnosis only aims to raise the awareness and to draw the attention to certain IPR issues – it is up to the firms to decide whether they implement the recommendations or not.

Evaluation and Performance

Regular monitoring exercises have been put in place in order to guarantee the quality of the programme. Further to that, an evaluation, conducted by a business school (EM Lyon) on the beneficiaries of the service in 2005, was carried out in order to assess the acceptance and practical value of the service. The results provided, among others, the following picture:

- Small SMEs (less than 20 employees) represent 74 % of all beneficiaries (65 % in 2004).
- 87 % were very satisfied with the pre-diagnosis (had a good or excellent general IP assessment).
- 78 % stated that they understand better the stakes of intellectual property.
- 51 % have implemented intellectual property actions (mostly filed for trade marks, patents, etc.) after the pre diagnosis.
- 37 % did not implement actions related to the protection/usage of IP at the time of the survey, but intended to do so soon afterwards.

About 100 enterprises are interviewed each year to get first-hand information about customer satisfaction. Further evaluations and analyses which focus on customer perceptions on how to improve the service are in the making. Regarding the external experts carrying out the analysis together with INPI, quality is guaranteed by a rigid selection and qualification procedure.

Around 500 intellectual property pré-diagnoses should be carried out each year in France, including 100 especially in Ile-de-France (Paris region). The target was already reached with 470 IP pre-diagnosis in 2006. Since the service started, around 1,200 IP analyses have been executed by the end of 2006.

5.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

30 companies were surveyed about their experiences with IP Prédiagnosis. As can be seen from Graph 63, the user sample reflects that the service targets mostly micro-enterprises: 82 % of the SMEs in the sample have at most 9 employees, 11 % have 10 to 49 employees and only 7 % are larger companies (with a maximum of 249 employees).

Between 2003 and 2005, 70 % of the service users introduced product innovations (new or significantly improved products) onto the market; and more than 37 % came up with process innovations. Around 83 % of the service users conducted intramural R&D (see Graph 64). Hence, IP Prédiagnosis users can be considered to be very innovative (which is more surprising than with other services, as SMEs- in non-IPR affine industries and non-IPR users are pro-actively contacted by the service staff).

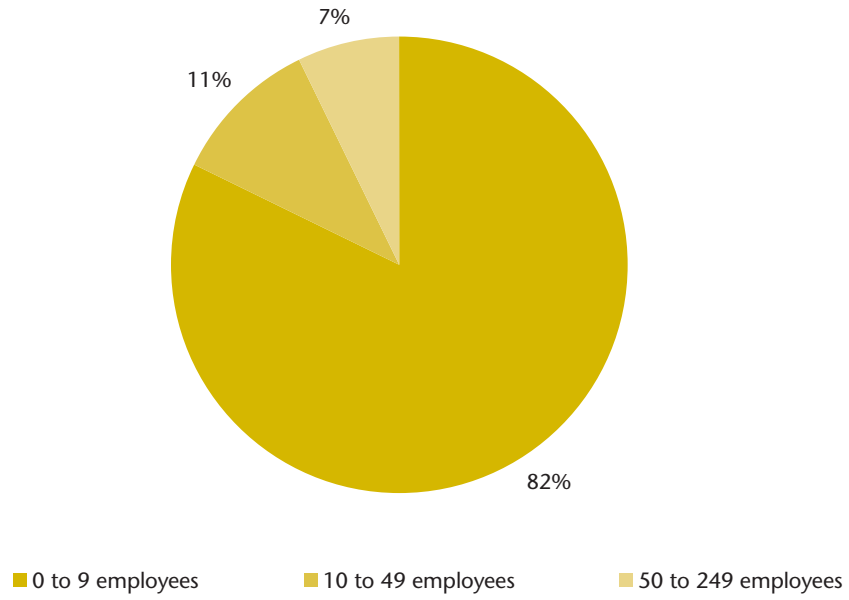
IP Prédiagnosis users most frequently take advantage of the service offerings of regional support agencies (see Graph 65). Although a lot of companies are suspected to be rather new to the IPR world, it is quite interesting to see that more

than half of them made at least occasional use of support from INPI. A possible explanation could be that the service team reverts to existing INPI internal records when contacting firms and that these companies most likely have a history of at least enquiring information from the patent office.

Regarding hampering factors for innovation activities, companies complained mostly about high innovation costs (for 57 % of high and for a further 27 % of medium relevance), economic risks (for 47 % of high, for 17 % of medium relevance) and the lack of appropriate sources of finance (of high relevance for 40 %, of medium relevance for 23 %; see Graph 66). Regulations and standards, lack of market and technology info and organisational issues are reported to be of a less critical nature. These results are in line with findings form other case studies

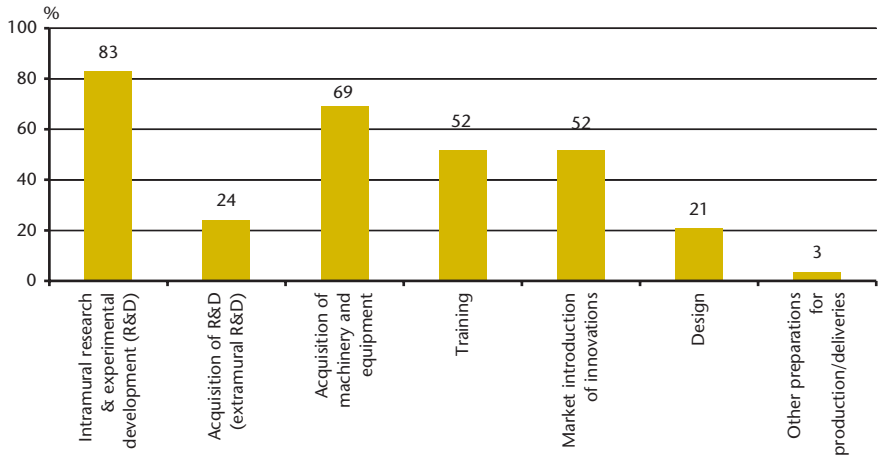
IP Prédiagnosis users employed a range of IP protection methods in the period of 2003 to 2005, not the least to a high degree also formal IPR instruments following the advice given in the pre-diagnosis (see Graph 67). 40 % of the users stated that they used trade marks to protect their IP; 37 % filed for a patent in that time period

Graph 63 IP Prédiagnosis–Company Size distribution in interview sample, 2005, percentage of respondents



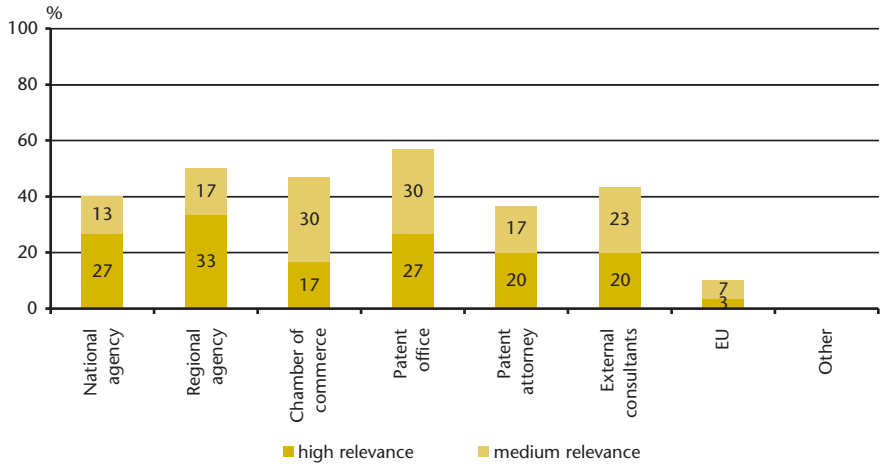
Source: User Survey, n = 30

Graph 64 IP Prédiagnosis–Innovation activities in interview sample, 2005, percentage of respondents*)



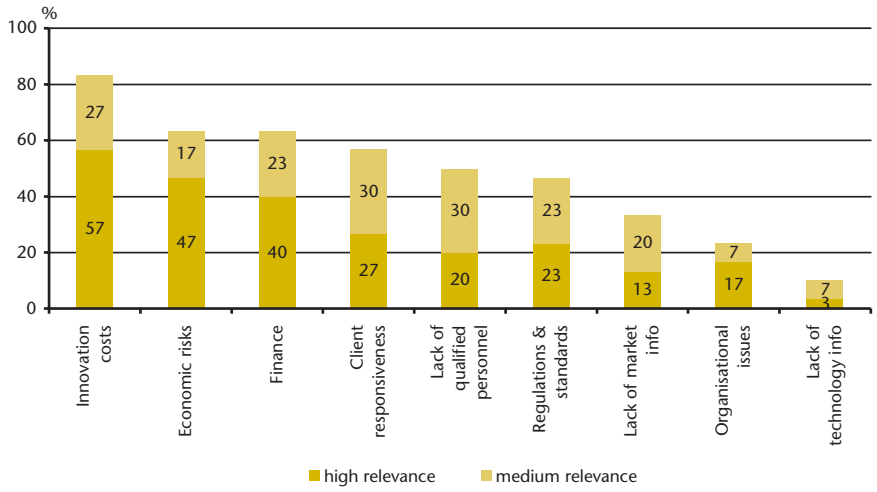
*) multiple answers allowed. Source: User Survey, n = 30

Graph 65 IP Prédiagnosis–Usage of different service providers by SMEs, percentage of respondents*)



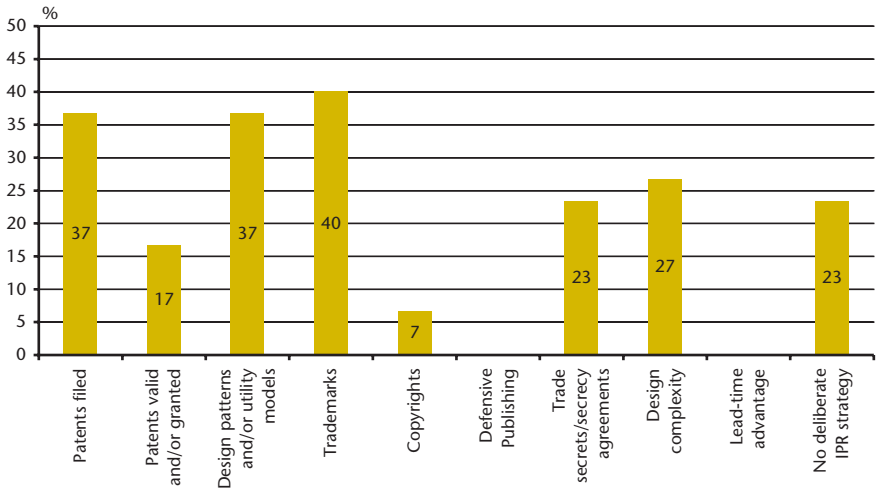
*) multiple answers allowed. Source: User Survey, n = 30

Graph 66 IP Prédiagnosis–Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 30

Graph 67 IP Prédiagnosis–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*)



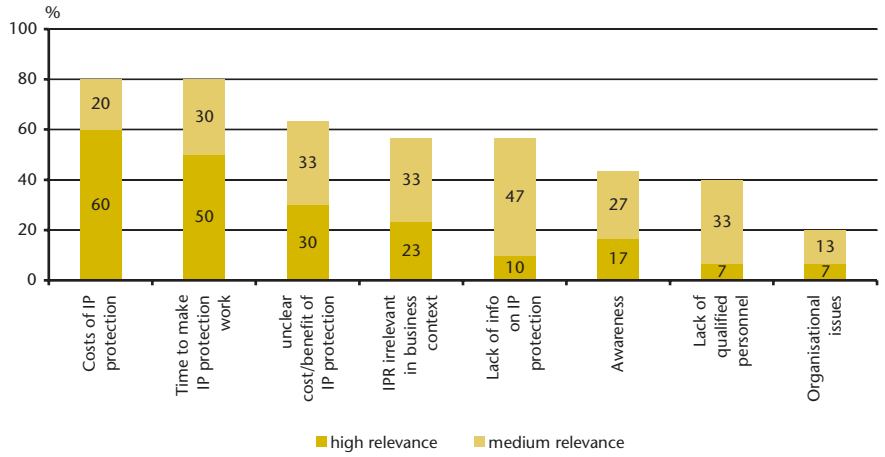
*) multiple answers allowed. Source: User Survey, n = 30

or had a patent granted or valid. The usage level of informal IP protection methods was also rather high: 27 % relied on the complexity of design, 23 % used trade secrets and/or secrecy agreements. Unsurprisingly for a service pro-actively contacting non-IPR users, there was also a significant number of users (23 %) which declared to have no deliberate strategy with respect to IPR.

For IP Prédiagnosis users, the costs of IP protection (for 60 % of high and for another 20 % of medium relevance), the time to make IP protection work (for 50 % of high and 30 % of medium relevance) and an unclear cost/benefit ratio of IP (for 30 % of high and 33 % of medium relevance) were ranked as the main internal barriers perceived for using IPR (see Graph 68) – these findings are in line with those from other services; the latter aspect (unclear cost/benefit of IPR) shows that significant demand exists with respect to explaining the benefits of proper IP management (which is addressed by the service). Noteworthy is also the relatively high share of SMEs which stated that IPR is irrelevant in their business context.

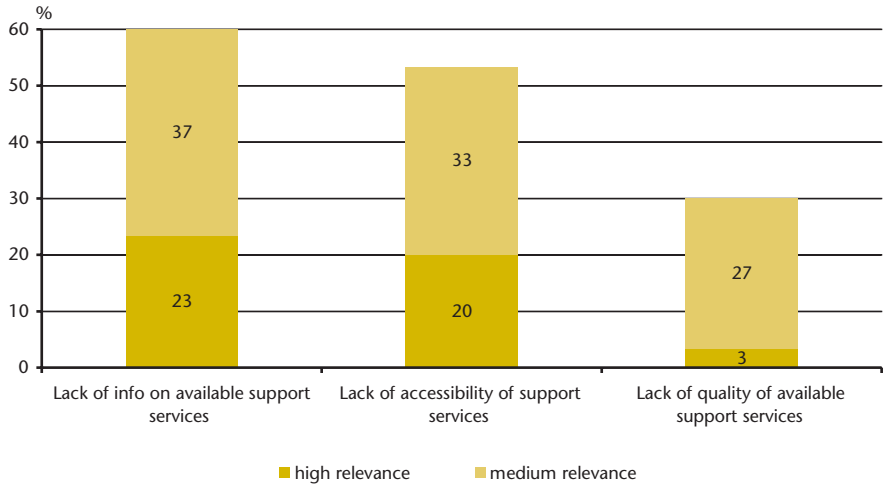
The lack of information (high relevance for 23, medium for 37 %), the lack of accessibility (for 20 % of high and 33 % of medium relevance), and the lack of quality of available external support services (for 3 % of high and 27 % of medium relevance) are also notable barriers (see Graph 69). The rather large share of

Graph 68 IP Prédiagnosis–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 30

Graph 69 IP Prédiagnosis–(External) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 30

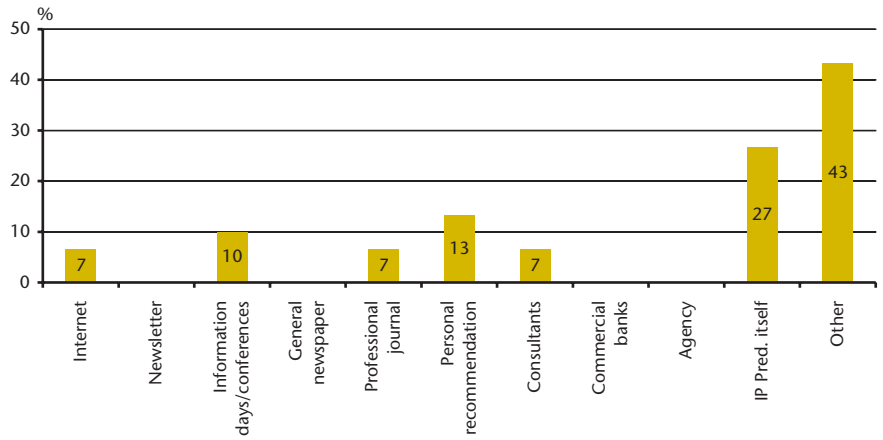
companies which complained about lack of information may point to the fact that marketing efforts could be increased.

User out-reach and satisfaction levels

Information channels, by which users got to know about IP Prédiagnosis, were on the one hand dominated by "other" channels (43 %), which consisted mainly of information from the Chamber of Commerce and some INPI co-operation partners (RTD network) and, on the other hand, by INPI itself (27 %) (see Graph 70). This reflects to an extent the pro-active nature of the service. Surprising, however, is the fact that nobody got to know about the service from an agency, given the ties between, for example, Oseo Innovation and INPI. This may be explained by the pro-active contacting approach and the fact that the usage of the pre-diagnosis precedes the usage of other IPR (and probably also non-IPR) services. It is thus likely that many of the companies addressed have never been in contact with public business support services before.

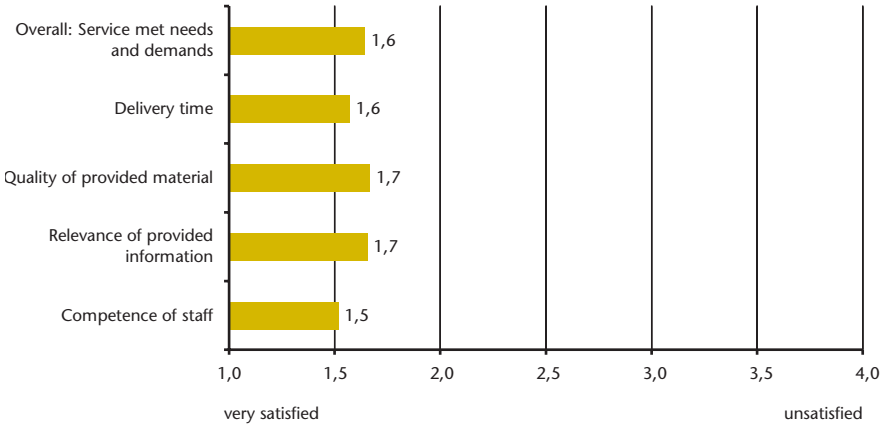
Overall speaking, users are, on average, very satisfied with IP Prédiagnosis: All aspects (delivery time, the competence of staff, the relevance of the provided information, etc.) are graded with "1.7" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied) (see Graph 71). Around 71 % of the users rate the extent of the service offerings to be adequate. On the other hand, 21 % think it is too narrow/ superficial which is, of course, in the very nature of the service – 2 days of con-

Graph 70 IP Prédiagnosis–Information channels, by which users got to know about the service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 30

Graph 71 IP Prédiagnosis–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



Source: User Survey, n = 30

sulting may rise awareness and put some topics on the table but it may not be enough for the development of a fully fledged IP management strategy.

Spatial distance is seen to be less of a problem (for 32 % a very low-level barrier and for another 60 % a factor considered to be at least acceptable); administrative efforts (for 24 % a quite low barrier, for another 66 % considered to be acceptable) are not considered to be an obstacle either. Overall, 50 % think that the benefits of using this service are adequate to the efforts; 30 % state that the benefits clearly outweigh the efforts.

Additionality of the service

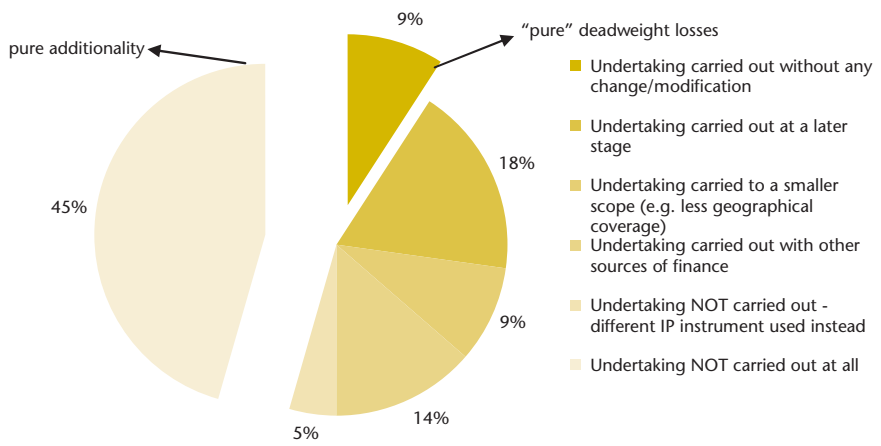
In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

It has been noted that the service makes its customers aware of the fact that the consulting process is fully subsidised. Against this background it makes sense to enquire about additionality effects, even if the service is not a "classical" subsidy towards patenting costs.

IP Prédiagnosis has achieved against this backdrop rather high additionally effects (see Graph 72). According to the survey results, 45 % of the undertakings (e.g., IP assessments) would not have been carried out without support from the service. This rather strong additionality shares can be explained by the pro-active character of the service: In contrast to other services, the Prédiagnosis offerings do not necessarily address e.g. projects that the company has planned to do (or was in the process of doing).

Looking at the changes in attitudes toward IPR protection among users reveals that IP Prédiagnosis was able to achieve its aims rather well (see Graph 73). The most significant behavioural changes took place with respect to general awareness on IPR (increased for 57 %, decreased for 3 % of the SMEs), formal IPR responsibilities within the company (increased for 53 %), knowledge management know-how (increased for 47 %) and patent knowledge in business environment (increased for 43 %). The attitude towards formal IPR protections methods, i.e. trade marks, design or copyrights, has changed, too, as did the usage of informal protection mechanisms. It seems that companies use all types of IP protection tools more consciously than before.

Graph 72 IP Prédiagnosis–Additionality of the financial subsidy, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 30

The competence of the staff involved in a service similar to IP Prédiagnosis was seen as the most important quality factor (for 73 % of high, for 17 % of medium relevance) (see Graph 74). The fact that the scope of such a service and information on different IP strategies are given such high relevance is not surprising as these elements reflect the very core elements of the service design. Administrative efforts and individual contact are considered to be of lower relevance. In addition, spatial distance seems not to be an important part for a service like IP Prédiagnosis.

5.3 Elements of good practice

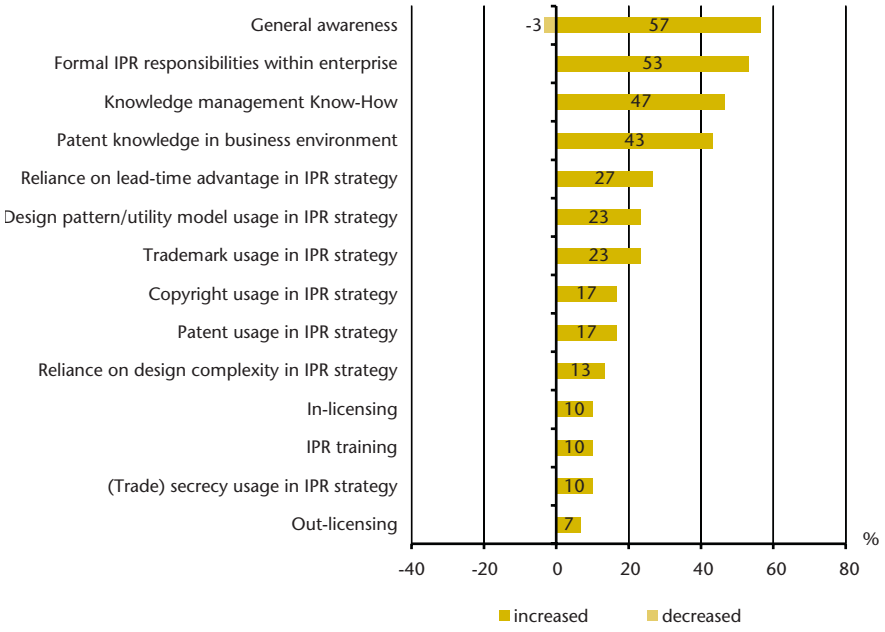
The service exhibits the following success factors (resp. good practice elements):

- Integration into a portfolio of IPR services;
- Operation by highly qualified and specially trained expert staff;
- Strong reputation of the service providing organisation;
- Referral possibilities (within INPI or to partner organisation);
- National delivery with regional promoting outlets;
- Close co-operation with various partner organisations which operate also on a regional basis;
- Well working collaboration patterns between development/technology agencies and INPI;
- Service is free of charge for enterprises;
- Existence of a follow-up service (1er brevet);

Notwithstanding the positive elements, the service has been faced with some challenges:

- Lack of qualified staff. According to experts, the 120 to 130 experts who are actually providing this service are probably not enough for a country the size of France.
- Rather low promotional activities. The regional network is working quite well but it seems more and more difficult to identify eligible enterprises for which the service could be helpful. This is closely related to the lack of staff (here with

Graph 73 Behavioural additionality of IP Prédiagnosis, percentage of respondents*)

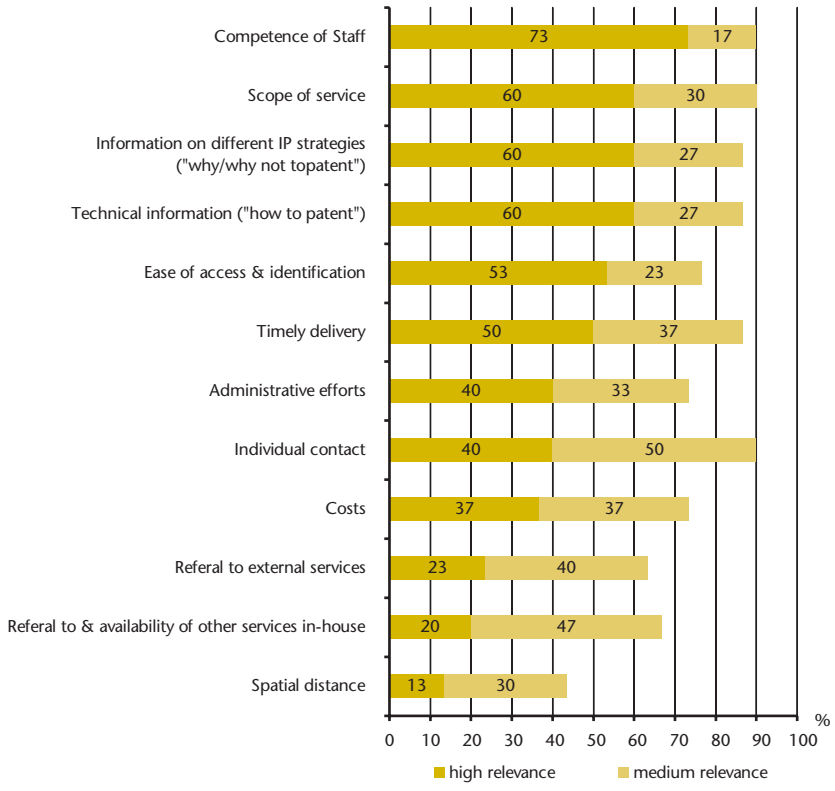


*) multiple answers allowed. Source: User Survey, n = 30

respect to promoting the service) and is especially prevalent in Ile-de-France (Paris region).

Experiences suggest that the service can also be easily adapted to work in other countries. At the moment, adapted service versions are, for example, used in Morocco. However, in order to promote the service in a similar manner, an existing network of promoters, such as the RDT network, is considered to be very important for the success of such a service.

Graph 74 Key quality factors for a service such as IP Prédiagnosis, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 30

6 "What is the key?" Campaign

Country:		United Kingdom
Original title:		"What is the key?"
Target group:		All companies
Coverage:		National
Category*:	**X**	(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
		Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

6.1 The "What is the key? (WITK) Campaign" in a nutshell

The "What's the key campaign?" of the UK patent office was chosen as a case study for displaying elements of good practice with regard to campaigns and events organised aiming at increasing IPR awareness of SMEs. Its success arises from the fact that a number of measures have been taken to best meet demands of the customers, i.e. the possibility to pose questions online in advance of the event(s) and its proper quality assurance mechanisms (user satisfaction surveys and evaluations which were used to gauge the impact of the campaign on the IPR perceptions of the visiting companies). This, together with the regional focus and involvement of external service-providing institutions, has ultimately led to a high number of satisfied SMEs participating in the campaign.

"What is the key?", abbreviated WITK in the following, is an IPR awareness raising campaign organised and run by the UK Intellectual Property Office (UKIPO) in partnership with national and local authorities. Its objective is to offer an overview of the law relating to IPRs, to show their importance to businesses and how they are relevant to companies of any size. The purpose of the campaign is to make businesses, especially SMEs, more aware of their intellectual assets and their potential and to offer information and support on how to protect them.

WITK can be seen as an "information day", set up as a two part IPR event: during the first part, a short introduction to intellectual property rights covering patents, trade marks, designs and copyright is given to inform the interested audience about recent developments and available public support services. Depending on where this event is presented, local service providers are also invited to talk about their support services concerning legal protection of IPRs. The second part of such an event is focusing on case studies which describe and illustrate how (local) entrepreneurs benefited from using IPRs as means of protection of their intellectual assets. Panel discussions and open question/answer sessions are offered at the end of each event.

The programme is managed in collaboration with the Chartered Institute of Patent Agents (CIPA) and the Institute of Trade Mark Attorneys (ITMA), thus including also relevant service providers from the private sector. Events to promote the programme have been held all over the UK in co-operation with local partners such as Business Link Offices and regional development agencies, which underlines the regional character and dimension of WITK. The campaign is directed to businesses of any size, but it puts particular emphasis on SMEs and their knowledge of Intellectual Property Rights. The topics presented cover all phases of IPR usage. No restricttions are in place for certain industries or technology fields.

Background and resources

IPR awareness among SMEs in the British system of innovation has been set as key priority for the UK Department for Innovation, Universities and Skills (DIUS). As part of national policy, the UKIPO was instructed to develop an entry-level information scheme addressing the issue of IP management to SMEs. WITK has been prepared over a period of 12 months; inputs for the set up have been derived from various sources and activities, i.e. an exploration of user needs and involvement of stake-holders and external consultants. Moreover, a survey has been undertaken to assess the SMEs' perception of the importance of IP, and its relevance to their business.

The campaign has been managed by a specialised team of 4 staff [FTE], within the Awareness, Information & Media team in the UKIPO. The team is composed of people with extensive experience in discussions with SMEs about Intellectual Property rights and other critical issues for business growth. However, there are (strategic) partnerships and informal networks with other actors (national/regional authorities) which had the opportunity to present their business support services at these events. Between 2005/2006, the budget earmarked for WITK amounted to € 375,000, whereas the costs of the operational management (overheads) covered a share of about € 70,000, around € 6,500 were spent for two publications. The rest has been allocated to customer surveys, press activities, radio days, e-newsletters and supporting PR.

Modes of operation

Each event of the campaign offers advice on business support regionally available from regional development agencies and regional Business Links, an overview of the possibilities of the Intellectual Property System from the UK Intellectual Property Office, the experience of local entrepreneurs who used the IP system, and an explanation of patent and trade mark law from the Charted Institute of Patent Attorneys (CIPA) and the Institute of Trade Mark Attorneys (ITMA). At the end, some events offer the possibility to win a free Intellectual Property Audit.

With the aim to reach and attract a larger audience (of SMEs), the overall presentation on protecting and managing intellectual assets served as a platform for the regional development agencies and regional Business Links, which had the opportunity to present their business support services. Likewise, the Charted Institute of Patent Attorneys (CIPA) and the Institute of Trade Mark Attorneys (ITMA) presented their services.

As the scheme was designed mainly for SMEs, the organisers of WITK came up with the idea of showing realistic examples of how a company can benefit from securing their IPR. Therefore, the experiences of local entrepreneurs were presented using case studies, i.e. *"How developing their IP strategy helped company ABC to increase the value of their company and ease the sale of one business area"* or *"…Helped protect their idea internationally allowing the product to be marketed internationally, especially in the large American market."* Between 2005 and 2006, around 20 entrepreneurs were invited to illustrate their experience with managing their intellectual assets.

In addition, the campaign offered its own dedicated website (now closed). While online, companies simply had to register and were able to receive free consultation with a patent or trademark specialist, a pack of free information regarding IPR issues, updated details of seminars and events in their areas, and news, views, and case studies about intellectual assets. Regarding marketing activities, the campaign has been promoted by using several tools and approaches.

Evaluation and performance

The WITK campaign has been the object of several quality assurance mechanisms. Particularly, regular monitoring exercises have been carried out at the end of each event by the core team of the scheme. At the end of each event SMEs were invited to fill in a feedback form. These forms were analysed later and used to improve the service. The answers suggested that the events were very well organised and

beneficial for the attendees. The administration of the events was seen very positively, partly because of the core team which was perceived to be very dedicated to the subject matter.

An ex-post evaluation was undertaken at the end of the campaign in order to understand if the events have been able to enhance the understanding of IP by companies. This evaluation was carried out by an external evaluator. An indication on the added value of the scheme can be drawn from the following results: at the beginning of the campaign, 36 % of SMEs stated that IP is not an issue; an additional 28 % said that IP is an issue, but they do not know how deal with it. The post-campaign survey reveals that 25 % of SMEs said that they had already taken action to improve the management of their IP; another 55 % planned to take action. In general terms, the survey revealed that the events were beneficial for the SMEs and that attendees would be reviewing their IP practices based on the advice they had received.

Regarding audits, 250 invitations were sent to SMEs to inform them that a representative from CIPA or ITMA would be offering them a free IP audit. 26 audits were completed. In other cases, SMEs declined to proceed with their audit because they declared to have a basic understanding of IP after attending the campaign.

Between 2005 and 2006, 19 events were organised which took place in different regions in the UK. Almost 1,700 people, mostly representatives of SMEs, benefited from this service. The wide spread of visitors between 50 i.e. in Yorkshire up to 200 in Scotland should be considered. The website of the service achieved a hit rate of 180,473 between 2005 and 2006 (an average of over 15,000 hits per month). 1,550 SMEs registered their details on the website; 110 questions were received and answered.

6.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying study, the results of which are presented below.

Characteristics of the user group

In the UK and Ireland, the handling and disclosure of personal data is governed by the so-called Data Protection Act. Due to this regulation, it was difficult to assemble a comprehensive list of WITK participants; exceptions could only be made for certain cases. As a result, only 13 WITK users could be identified willing to share their experiences by completing the survey. Considering the small sample size, great care has to be taken when interpreting the results.

Out of the 13 WITK users, 9 shared information about the actual company size. Based on the received information, only 2 enterprises had employed more than 9 employees between 2003 and 2005. 4 out of 13 firms introduced new or significantly improved products onto the market during the respective timeframe. The same applies to process innovations: 4 out of 13 were able to come up with process innovation activities. 6 WITK users conducted intramural R&D, 6 were engaged in training activities and 5 in the acquisition of machinery and equipment between 2003 and 2005 (see Graph 75).

Between 2003 and 2005, 9 out of 13 WITK users stated that they never used any support and/or funding from public or private innovation support providers; only one makes frequent use of services offered by national agencies. This result underlines that, at least in the case of the surveyed companies, the awareness raising function of WITK found its target audience of "unexperienced" firms (as far as the usage of support services is concerned). Regarding the methods of IPR-protection, 6 out of 13 IP service users stated that they used trademarks as most important formal means of IPR protection. On the other hand, 5 used trade secrets and/or secrecy agreements and 4 used registered copyrights and relied on lead-time advantage. 3 users filed for a patent between 2003 and 2005. Even though

the sample size is small, it emerges that the users used a variety of IP protection instruments and did not restrict themselves to patents.

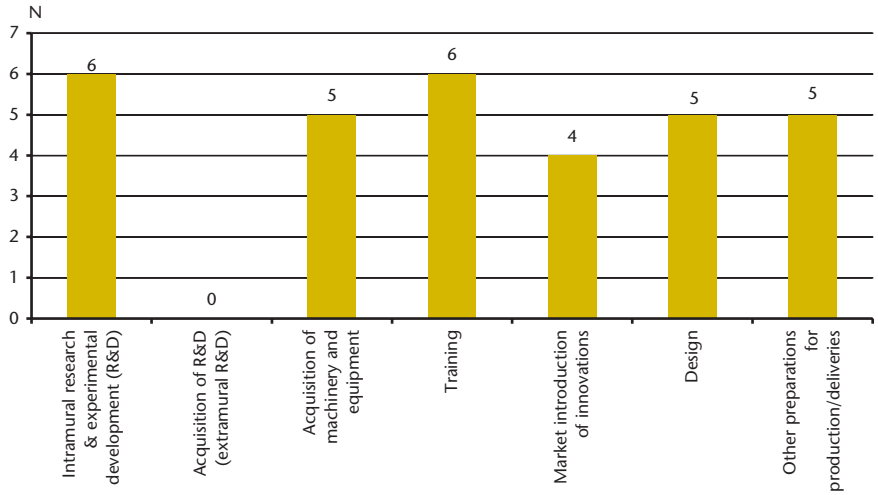
As regards factors hampering innovation activities, the WITK users/attendants considered economic risks (for 6 out of 13 of high and for 1 of medium relevance) and high costs of innovations (for 5 out of 13 of high and further 2 of medium relevance) as important factors (see Graph 76). 3 out of 13 stated that the lack of financial resources and market information as well as regulations and standards slowed down company-wide innovation activities.

For many of the questioned users, the costs of IP protection and the actual time to make the protection work were ranked among the main internal barriers perceived for using IPR. Despite the small sample size, these results are in line with that of other analysed services. In addition, the lack of information on methods to protect IP and missing qualified personnel were also considered to be important obstacles. External barriers were also seen to exist; 5 out of 13 considered the lack of information on available external support services as highly relevant.

User out-reach and satisfaction levels

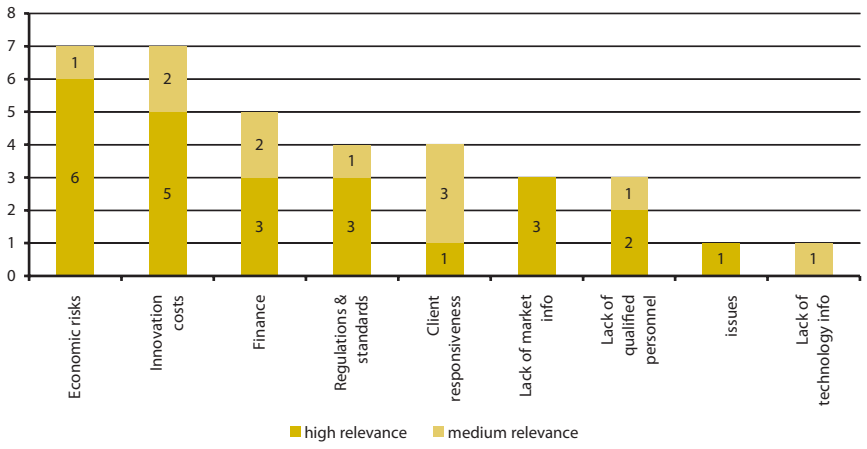
Almost all WITK users received information about the service through the internet and personal recommendations. Interestingly, but due to the small sample size not conclusive, only 1 user heard about the service by the UKIPO itself.

Graph 75 WITK–Innovation activities of interviewed firms, 2003 to 2005, number of respondents *)



*) multiple answers allowed. Source: User Survey, n = 13

Graph 76 WITK–Hampering factors for innovations, 2003 to 2005, by SMEs, number of respondents*)



*) multiple answers allowed. Source: User Survey, n = 13

Overall speaking, the users were very satisfied with WITK; all surveyed users considered the extent of the service offerings to be adequate and declared that the benefits of using this service clearly outweighed the efforts of using it.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should also inquire into the added value of the service – i.e., what would have happened in case the service was absent. This is done in order to isolate a "net effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other type of changes incurred within the enterprise, as a result of using the service, are to be recorded (these changes are referred to as "behavioural additionality").

The overall aim of the campaign, to present IPR know-how on a general, awareness raising level, seems to be clearly reached with the interviewed users (see Graph 77). According to the user survey, the most prominent changes concern general IPR awareness, which increased for 11 out of 13 users, and patent knowledge in the business environment (increased for 11 users). What can be seen at a glance is that the attitudes towards rather informal protection methods have changed, too, but to a much lesser extent.

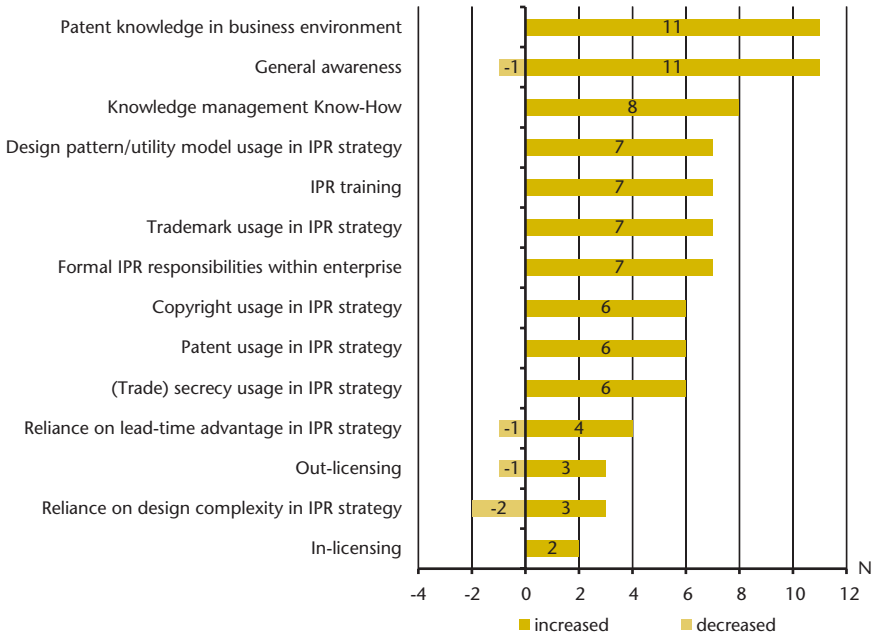
All surveyed users considered the competence of the staff involved in a service similar to WITK as very important. In addition, the ease of access and identification and timely delivery were also felt to be key factors. Interestingly, referral possibilities and individual contacts were not seen to be important for such a service.

6.3 Elements of good practice

The WITK campaign acts as an entry point to the world of IPR by addressing the issue of IP management for SMEs, raising awareness in this field and presenting hands-on practical examples of how companies may benefit from protecting and managing their intellectual assets. In this light, WITK exhibits the following success factors (resp. good practice elements):

- Competence of staff: experienced experts in law, management and commercialisation, hold presentations about relevant topics concerning legal protection instruments;

Graph 77 Behavioural additionality of WITK offerings, number of respondents*)



*) multiple answers allowed. Source: User Survey, n = 13

- Regional context: presentation of case studies about local entrepreneurs ("How I benefited from IPR protection");
- Regional focus and outreach, closely connected;
- Integration into an existing IPR dedicated institution with a wide range of related services;
- Follow-ups: opportunity to win an IP audit which was used as an incentive;
- Possibility to ask questions online used as a preparation for events;
- Usage of evaluations and user surveys as tools to assess the performance of the service.

According to the expert interviews, the main strength of the scheme is to focus the events regionally. This has been possible because of the development of networks with regional actors (mainly regional development agencies and Business Links) which allowed WITK to reach a large regional audience. Furthermore, as experts state, the service has achieved a high reputation nationally and regionally. In fact, the number of requests to organise new events in the regions is very high. On the other hand, the main weakness of the services is the low budget, which has, according to experts, not allowed a complete use of the core teams expertise.

If the campaign is going to be re-launched in the future, other issues should be considered too. According to experts, the co-operation between the UKIPO and the (regional) development agencies and professional organisations should be even more fostered to better understand their incentives, experiences, and lessons learned. In this light, the evaluation already carried out in the course of the implementation of the scheme should be exploited more thoroughly to ensure the continuation of a high quality IPR awareness campaign.

7. IA Centre Scotland (Scottish Intellectual Assets Centre)

Country:		Scotland, United Kingdom
Original title:		Scottish Intellectual Asset Management Limited
Target group:		All companies
Coverage:		Regional (Scotland)
Category*:	X	(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

7.1 IA Centre Scotland in a nutshell

The Scottish IA Centre was chosen as a case study because of its rather unique character as a service institution deliberately offering IP and IPR support covering all forms of IP protection methods and having the idea of value-driven IP and IPR management at the heart of its offerings (rather than a sole increase of patent activities). The high demand for this service, extensive referral activities, high satisfaction levels of the users and the considerable impact on the IP usage and protection strategies of the using firms underline the success of the service and have led to high reputation levels. Challenges remain with regard to limited resources.

The Scottish Intellectual Assets Centre aims to demonstrate how intellectual assets and/or property impacts upon the value of various business segments of an enterprise and affects therefore i.e. the development of strategies, products, processes, service markets and supply, and distribution channels. The prime mission is focussed on addressing existing and potential market failures inhibiting the ability of Scottish businesses to manage and exploit their intellectual assets (IA).

The IA Centre focuses on three fundamental objectives that support this mission:

- to increase awareness and understanding of intellectual assets issues among Scottish businesses and other organisations;
- to enable Scottish businesses to manage and exploit the untapped potential of their intellectual assets for competitive advantage;
- to encourage the development of a strong, private sector-led supply of IPR/ intellectual asset management services;

In a more operational manner, the IA Centre's intention is to identify those intellectual assets of a organisation which drive value. Once identified, the service will assist the organisation in suggesting options for safeguarding and exploiting the intellectual assets. In many cases, the implementation of those suggestions requires the intervention of intellectual property rights specialists. At this stage, the services guide, direct, and signpost the organisation to the most appropriate supplier of IA management.

The service consists of training and advice sessions with organisations in order to help them to identify IA management issues, appropriate tools and service providers. This session can be one-to-one or with a group of companies. Interventions with individual organisations tend to be fairly short, about one third are less than 4 hours and the rest between 4 hours and 2 days.

The commercial target for this service, and for all IA Centre services, embraces strategic decision-makers in all sizes of organisations. Regarding this service, targeted organisations will be primarily those, which recognize the value of their intellectual assets, including where appropriate IPR, but do not know how to progress. The service also wants to target potential early adopters of IPRs. An activity-based performance management system with numerical targets has been set up with a target of 360 organisations in 2006-07.

The IA Centre has no explicit focus on SMEs; the service offerings cover all phases of IPR usage. Some of the service elements offered by the IA Centre are also delivered by the UKIPO, but at national UK level. Therefore, a regional focus is given by the fact that the IA Centre offers its services within Scotland only. No restrictions are in place for certain industries or technology fields.

Background and resources

During the past years, the Scottish Executive's strategy for economic development has set up a plan which is focussed on growth through productivity improvement, entrepreneurship, skills and digital connections. Whilst implicit within such a strategy, the ability to take advantage of intellectual property was not articulated as being of critical requirement for business growth. To address this area specifically therefore, the Scottish Executive set up a Centre to help organisations to address intellectual property rights management.

In light of this, the Intellectual Assets Centre was established in 2003 representing a public body agency promoted by the Scottish Executive, which is the principal funder of the Centre. Other key stakeholders are Highlands and Islands Enterprise and Scottish Enterprise. In addition, the IA Centre works closely with the UKIPO and other organisations interested in IP in the business environment.

The service offerings were designed based on research with businesses and suppliers prior to the establishment of the Centre. Subsequent research which looked at the current levels of awareness and understanding of IPR, and extent of engagement in IPR management activities among Scottish companies, particularly SMEs also informed service development.

The core operational staff includes senior managers and experts in human resources, economic development, marketing, public policy, technology and innovation and IPR management. These members of staff are all professionals with several years of experience in their respective fields. Exact figures of FTEs are not available but around 10 people are estimated to be involved in marketing, organization, and delivery of the services. These are supplemented by secondees (for instance from the UKIPO) and a number of Consultants.

In 2005, the budget for the service was around £450,000 (around €700,000). Core funding of the IA Centre is provided by the Scottish Executive. Other financial sources come from Highlands and Islands Enterprise and from the European Union e.g. Structural Funds as part of a programme called Innovative Actions. In the case of EU funding, in 2005 it counted for almost 17% of the total budget which was approximately £1million. Regarding the duration of the service, the IA Centre is securely funded until 2008.

Modes of operation

As mentioned before, the service consists of training and advice sessions with organisations in order to help them identify IA management issues, appropriate tools and service providers.

The **service portfolio** offered by the IA Centre can be summarised as:

- education to create awareness;
- training and advice to build practical knowledge;
- offering diagnostic and IA audit tools; and
- signposting to help organisations identify IA management issues, appropriate tools and service providers.

Vital parts of the service portfolio from the IA Centre are delivered by events and tools. The IA-Tools are used to identify and manage intellectual assets. A number of these tools are available.on the IA Centre website. They include information booklets, business simulations and games designed to understand issues more fully; and identification and diagnostic tools such as questionnaires, glossaries, and lexicons. The library tools are constantly under development based on feedback from companies and intermediaries.

On the other hand, IA events are being held across Scotland and cover a range of IA management topics rarely restricted by sector, shape or size of business. They include introductory sessions accessible to the IA novice through to those aimed at extending knowledge deeper by looking at specific IA management issues, such as branding or trading intellectual assets.

From an operational point of view, the IA Centre is engaged with external parties in order to add value to its services and maximise the benefits for the companies. A principal partner is the UKIPO. In the case of this service, some interventions have been run jointly. Other public sector intermediaries also work closely with the IA Centre to ensure that the specialist service can be accessed as widely as possible. Finally, private sector intermediaries (i.e. lawyers, business consultants), entrepreneurs, and academics have been involved as contributors in delivering the service. The involvement of private sector intermediaries also aims to encourage the development of a private sector supply of IA services in the future.

Evaluation and performance

The main instrument used to measure the outcome and performance of the service has been the "Customer Satisfaction Survey" carried out between October 2004 and February 2006. 112 telephone interviews were completed. The issues discussed by the survey were: ways of engaging with the service, outcomes of the service, impacts of the service, additionalities of the service, future of the service. The survey was conducted by an external evaluator.

The following results were noted:

- A high percentage claimed that the effectiveness of the IA Centre staff was very high and also the standard of the service was very high.
- 63 % have taken initiatives in IP management as result of the advice received during the service.
- 44 % of the respondents believe that contact with the IA Centre has helped them to better exploit their intellectual assets.
- 33 % of the respondents believe that the relationship with the centre has been crucial in understanding the value of IP for the company. It would have not happened at all without IA Centre engagement.
- 96 % of the companies interviewed would recommend the service to other organisations.

In 2005, the number of sessions/events held by the IA Centre reached 30, and were primarily attended by SMEs. In addition, 360 organisations received one-to-one support and referral to other institutions.

7.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

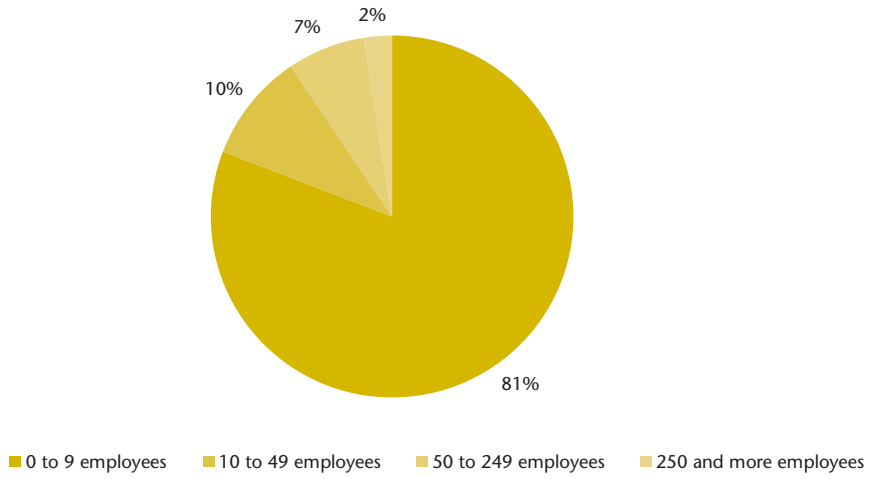
45 companies were surveyed about their experiences with the IA Centre. The distribution of the user sample indicates that the service may target mostly micro-enterprises: 81 % of the SMEs in the sample have at most 9 employees, 10 % have

10 to 49 employees and only 7 % are larger companies with up to 249 employees (see Graph 78).

In recent years, a significant number of innovative activities have been launched by users of the IA Centre service portfolio. Between 2003 and 2005, around 56 % of the service users introduced product innovations onto the market; more than 38 % developed process innovations. Around 74 % were engaged in training activities, 67 % conducted intramural R&D (see Graph 79).

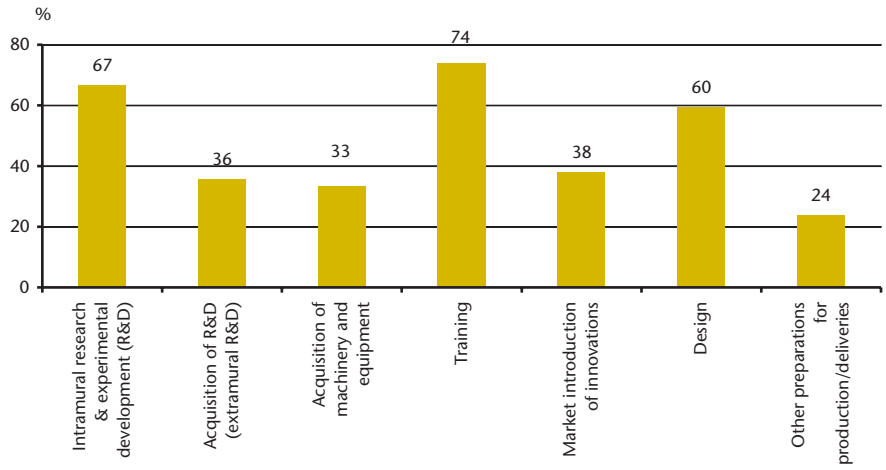
The IA Centre users most frequently take advantage of the service offerings of regional and national agencies (see Graph 80), underlining the high involvement of these organisations in supporting Scottish business. In this context, the strong cooperative links of the IA Centre with the development agencies can be considered an element of good practice. Some enterprises also made use of patent attorneys and external consultants but to a much lesser extent than was observed with other services analysed (e.g. the German INSTI Patent Action). This might be in part due to the very broad approach to intellectual assets of which IPR is a part, (which does, in the case of the IA centre, not necessarily lead to patenting). Services offered by the UKIPO, Chambers of Commerce or the European Union were not used very often. However, there may have been a masking of this activity as the IA Centre has a full-time secondment from the UKIPO to offer advice. This may mean that many companies have had UKIPO advice but may not have been aware of it.

Graph 78 IA Centre–Company Size distribution in interview sample, 2005, percentage of respondents



Source: User Survey, n = 45

Graph 79 IA Centre–Innovation activities of IA users, 2005, percentage of respondents



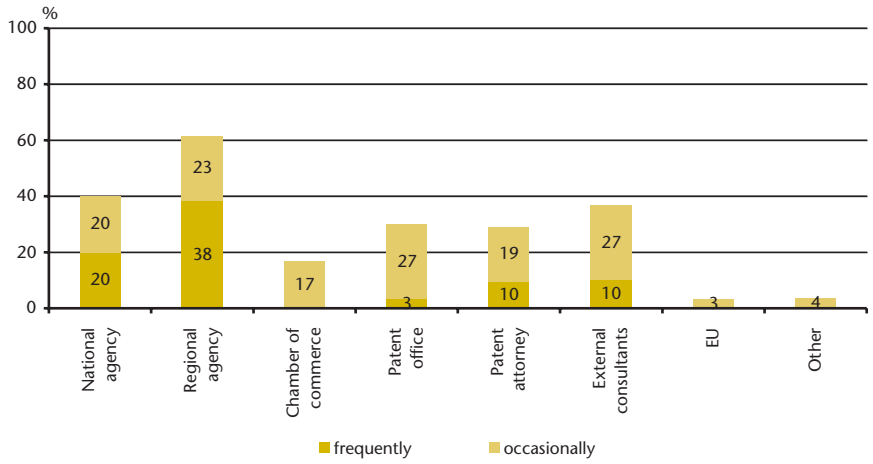
**) multiple answers allowed. Source: User Survey, n = 45*

As regards factors hampering innovation activities, the users complained mostly about high innovation costs (for 53 % of high and for further 24 % of medium relevance), economic risks (for 49 % of high and 18 % of medium relevance) and financial sources associated with innovation projects (for 47 % of high and 20 % of medium relevance) (see Graph 81). By contrast, the lack of qualified personnel, regulations and standards, client responsiveness or organisational issues are considered to be less important. This picture is in line with findings from other services.

Regarding the methods of IPR-protection, a large mix of different formal and informal methods were used between 2003 and 2005. 60 % of the users stated that they used trademarks to protect their IP, the main formal IPR instrument utilised by IA Centre users; users also employed informal methods to a rather large extent, especially trade secrets (58 %). Copyrights were utilised by more than half of the users (51 %). These findings (i.e. high share of informal methods used; moderate number of users filed for a patent (29 %) or had a patent granted or valid (11 %) again demonstrate the role of the IA Centre to foster the whole range of IA/IP protection instruments (see Graph 82).

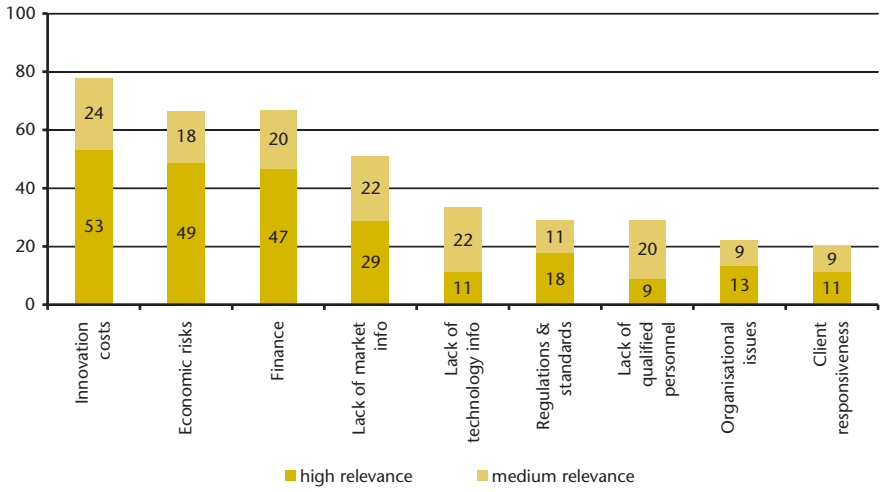
For the IA Centre users, the costs of IP protection (for 58 % of high and for another 9 % of medium relevance), general awareness issues (for 20 % of high and 31 %

Graph 80 Usage of different service providers by SMEs, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 45

Graph 81 IA Centre–Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 45

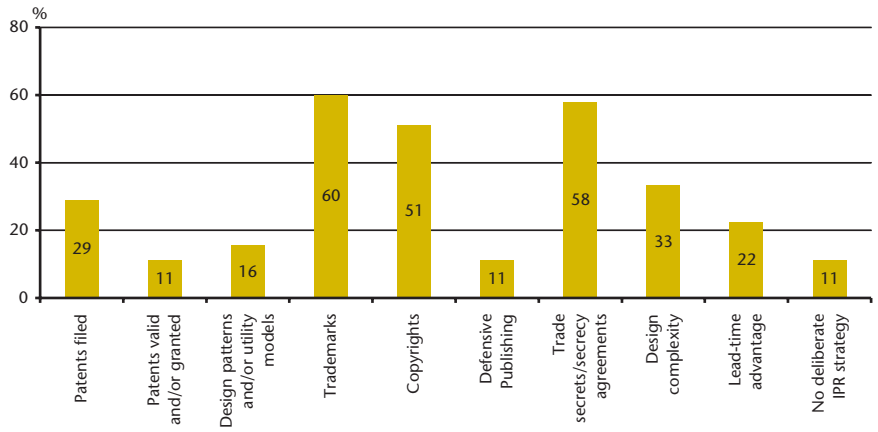
of medium relevance) and an unclear cost/benefit ratio of IP (for 20 % of high and 16 % of medium relevance) were ranked as the main internal barriers perceived for using IPR (see Graph 83). External barriers are not considered to be a significant problem for the usage of IPR, although a noticeable share referred to a lack of information on available support services (for 20 % of high, for 16 % of a medium relevance). The ranking of barriers perceived matches that of other services scrutinised.

User reach-out and satisfaction levels

Service users got to know about the IA Centre through a large number of information channels (see Graph 84). Around 42 % got to know about the service from agencies, 23 % through personal recommendations. Though advertisements in classical media (general newspaper, journals) are not significant carriers of information on the IA Centre, the IA Centre still seems to get promoted fairly well; at least, and in contrast to other services in Europe, information on the service activities seems to be rather well distributed from adjacent service providing institutions, thus indicating that the system of mutual referring works reasonably well.

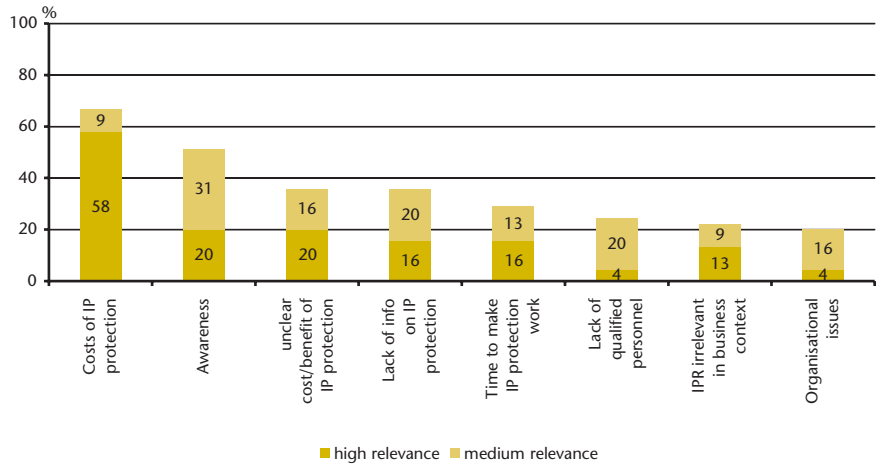
IA Centre users are, on average, very satisfied with the offered service. All the different aspects of service provision are rated with "1.5" or better on a scale from 1 (very satisfied) to 4 (unsatisfied). Competence of staff and delivery time received

Graph 82 IA Centre–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 45

Graph 83 IA Centre–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 45

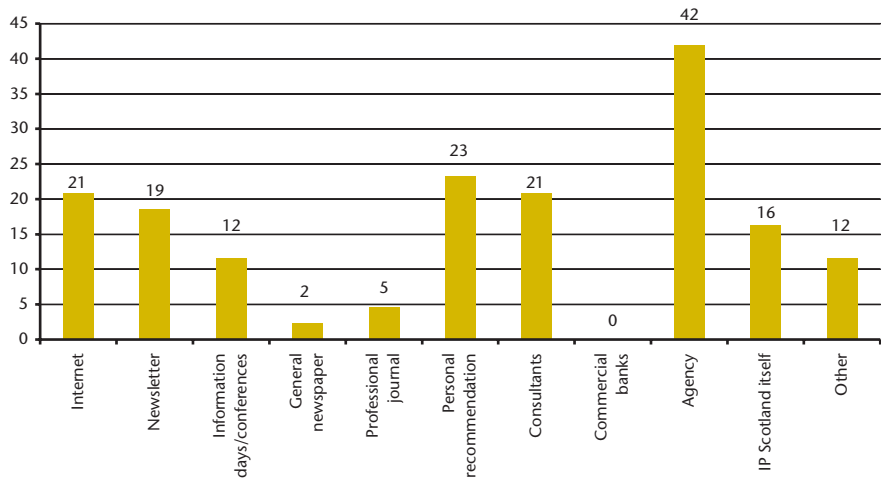
the highest grades (both "1.3", see Graph 85). In addition, around 74 % consider the extent of the service offerings to be adequate, 17 % think it's too narrow/ superficial, though. Around 62 % of the users state that the benefits clearly outweigh the efforts; 18 % think that the benefits are adequate to efforts.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should also inquire into the added value of the service – i.e., what would have happened in case the service were absent. This is done in order to isolate a "net effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other type of changes incurred within the enterprise, as a result of using the service, are to be recorded (these changes are referred to as "behavioural additionality").

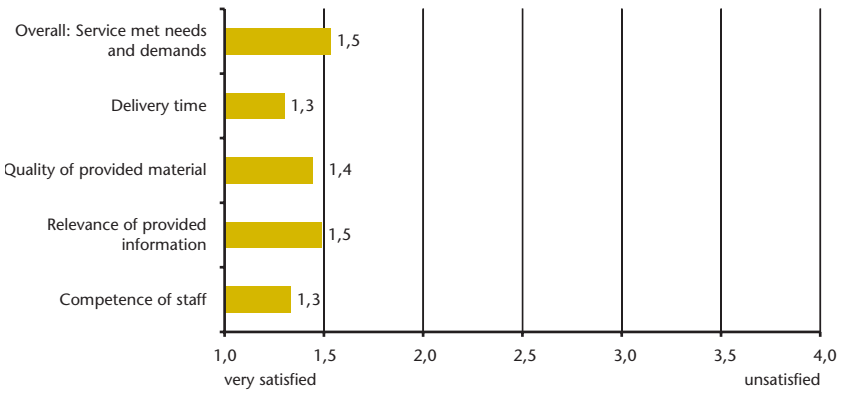
By taking advantage of the services offered by the IA Centre, rather significant changes in the attitudes of the enterprises toward the usage of IP protection instruments (i.e., behavioural additionality aspects) were reported (see Graph 86). The most significant changes took place in general awareness (which increased for 84 % of the firms) and knowledge management know-how (increased for 67 %). Attention to the degree of patent knowledge in the business environment and formal IPR responsibilities have increased for 67 % and 53 % of the users, respectively.

Graph 84 IA Centre–Information channels, by which users got to know about the service, percentage of respondents*)



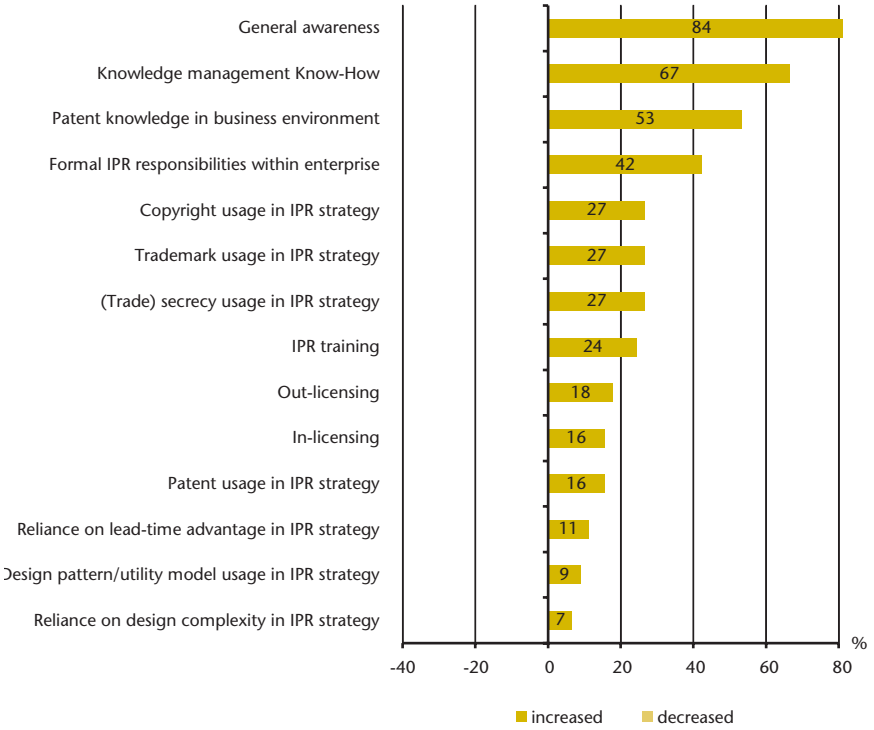
*) multiple answers allowed. Source: User Survey, n = 45

Graph 85 IA Centre–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



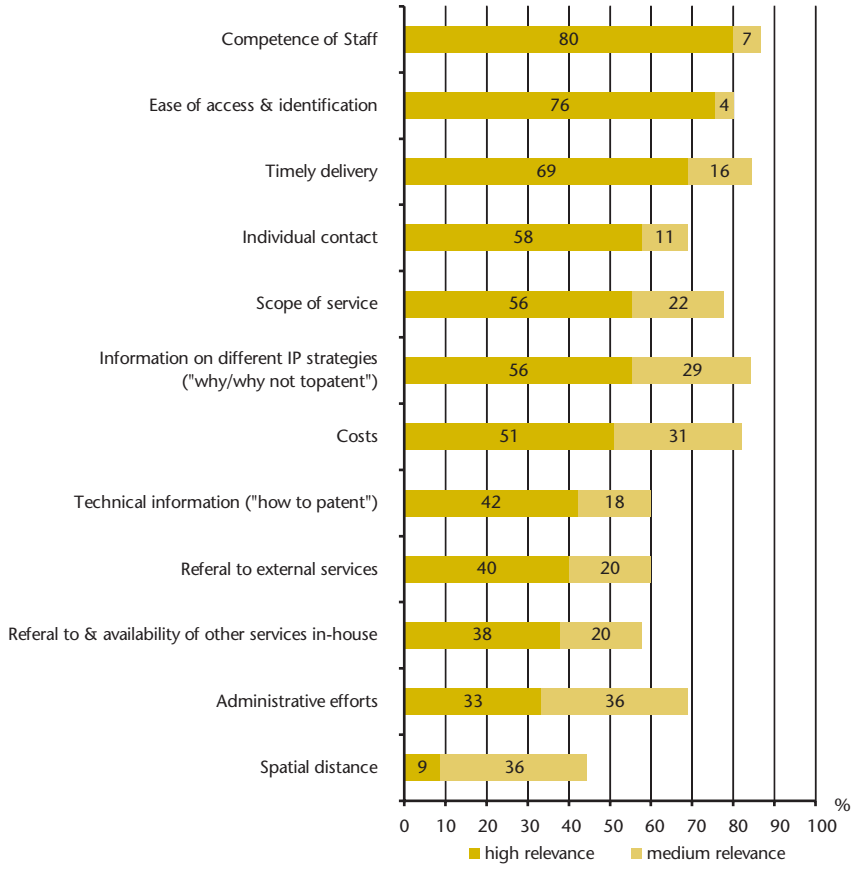
Source: User Survey, n = 45

Graph 86 Behavioural additionality of the IA Centre Scotland, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 45

Graph 87 Key quality factors for a service such as the IA Centre, percentage of respondents



*) multiple answers allowed. Source: User Survey, n = 45

Two things are noteworthy: Firstly, that patent usage in the IPR strategy was largely unaffected. This indicates that the IPR needs of IA Centre users were in most instances better served by other means of IP usage/protection. Secondly, and this is in contrast to all other services analysed, no IP protection instrument/strategy or any aspect related to it saw a decrease in attention levels given by the firms. This could be read as evidence that the IA Centre succeeded to a large extent in making its users use the whole spectrum of IP protection methods more consciously, rather than discouraging or encouraging the usage of certain IP protection instruments beforehand.

In line with the results from similar IPR support services, the IA Centre users stress the importance of the competence of staff (for 80 % of high, for 7 % of medium relevance), the ease of access and identification (high relevance for 76 %, medium for 4 %) and timely delivery (for 69 % of high, and for 16 % of medium relevance) as main key success factors for a service similar to the IA Centre (see Graph 87). However, it seems that most of the other factors are also of relevance (the only exception being, again similar to other services, spatial distance). This result might be due to the broad approach employed by the IA Centre and the need to offer information to its customers in very firm-specific fashion.

7.3 Elements of good practice

The IA Centre offers an integrated set of services in the field of intellectual property, it helps organisations, especially SMEs, to identify their intellectual assets and advises them in IPR management activity based on complementary approaches. The most important key factor of the service has been focussing on improving the understanding of IP and to provide a strategic picture of intellectual assets and its value to Scottish organisations.

Given the results of the user survey and the expert interviews, the service exhibits the following success factors (resp. good practice elements):

- Highly skilled staff with a broad approach to IP protection and usage;
- Clearly stated, specific goals of the service offerings;
- Services are delivered on a regional basis with a deep understanding of the local businesses
- Integration into a wider range of IPR-related services;
- Co-operation with Scottish stakeholders and others engaged with IPR issues; referral possibilities and respective actual activities to external organisations;
- Strong reputation of the service offerings in Scotland;
- Execution of quality assurance mechanisms in the form of user surveys carried out by external evaluators and well laid down preparatory activities involving ex-ante assessments

However, some challenges for the service remain which are mainly related to the available resources. This implies that the supply of the IA Centre services falls short of the (increasing) demand.

8. Case Study: serv.ip

Country:		Austria
Original title:		serv.ip
Target group:		All companies
Coverage:		National
Category*:	**X**	(Pro-active) awareness raising measures/Public Relations
	X	Information Provision Services
	X	Training
		Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

8.1 Serv.ip in a nutshell

The Austrian service serv.ip was chosen as a case study in the scope of the underlying benchmarking exercise especially because of its organisational set-up: Having its roots in the Austrian patent office, the service is actually an outsourced subsidiary (a "partial legal entity") of the patent office, operating on a non-profit – but self-sufficient cost-covering – basis, and is structured like a private company. By taking this step, serv.ip can operate in much more customer-oriented manner (it has, for example, to pay less attention to bureaucratic procedures).

Service activities themselves focus on the provision of tailor-made patent database search services and pro-active awareness raising activities (roadshows, seminars/ trainings). The objectives of serv.ip are in particular:

- to offer information on IPR and respective support to companies, especially SMEs, which are interested in IPR issues,
- to provide technical information regarding IPR (patent, trademark and utility model searches),
- to organise workshops and (pro-active) awareness raising campaigns, especially the roadshow "gedanken.gut.geschützt" (ideas.well.protected) in cooperation with the Austrian PO,
- to make patent information, publications, information folders and other resources available on the internet,
- to offer additional services, i.e. monitoring of patents and/or trademarks, referring to other parties (i.e. the Austrian PO), copying and translation services.

The purpose of the roadshow "ideas.well.protected" is primarily to provide general information about IPRs and to give an overview of the services offered by serv.ip, the Austrian patent office and other important stakeholders or service providers in the field of IPR.

Within the scope of serv.ip, special workshops on relevant IPR subjects can also be booked. Some of the offered workshops include information about the "legal protection of computer-implemented inventions", "protection of trademarks" (national, the community trademark, international), "international protection of inventions" and "patent searches". Fees are required for all of these services.

Serv.ip focuses on SMEs but is open to enterprises of any size. According to the service providers, the needs of SMEs and those of large enterprises differ considerably. As SMEs are often overloaded with daily work crucial to their business and do not have the necessary resources and/or extra time for searching in patent databases, for example, considerable demand exists with regard to services where serv.ip acts like an agent on behalf of the SMEs. The product "Expressrecherchen"

(fast track/express patent database search services with coverage, however, also of non-patent literature) was especially developed against this background and is thus a tool particularly useful for SMEs.

Serv.ip provides its services also to interested parties on an international basis. The service seems to pay more attention to formal IPR protection methods, demonstrated by the patent and trademark search as core of the service offerings and through the linkages of serv.ip to the Austrian PO. No explicit provisions are made for particular business sectors, though many clients seem to come from certain technology fields such as pharmacy, chemistry, computer sciences and electronics.

Background and resources

Founded in 1994, the core service of serv.ip, personalised patent and trade mark searches, is operated by around 40 employees consisting of experts from diverse backgrounds trained in IPR with particular emphasis on patents, trademarks, designs, and legal aspects related to this instruments; four employees are part-time involved in the organisation of the "ideas.well. protected" campaign. If necessary, serv.ip can draw on about 60 freelance staff. The total budget allocated for serv.ip amounts to around € 3.5 mio p.a.

Although serv.ip is managed independently, the service is said to work in close collaboration with the Austrian PO and other institutions with a certain responsibiltiy for IPR, i.e. regional chambers of commerce, industrial associations, and technology centres as well as with the Patent Attorneys Association. Noteworthy is also the close geographical proximity to the Patent Office (both organisations reside in the same building) which is seen as an asset due to achievable synergy effects.

Within the scope of the roadshow ideas.well.protected, serv.ip collaborates with a number of stakeholders in the Austrian innovation system. Among others, partners are national funding agencies (e.g., the Austria Wirtschafts Service GesmbH (aws)), ministries or regional funding agencies. Representatives of these organisations, most of them experienced experts in law, management and commercialisation, are to hold presentations at the roadshow regarding the importance of IPR and how their offerings can e.g. interlink with those of serv.ip.

Modes of operation

Patent database searches

serv.ip is designed to be an entry point for enterprises, individual inventors or other parties interested to learn about the novelty and state of art of applications for registering subjects, to evaluate the current market situation and to estimate future market developments. The rationale to focus on patent database searches is primarily seen in avoidance of double research costs: According to serv.ip estimates, € 150 mio. are saved each year in terms of redundant R&D.

The patent search offered by serv.ip is available in two versions:

- *tailor-made searches* (normal searches); and
- a standardised product called *"express searches" ("Expressrecherchen").*

Tailor-made searches are especially designed for a particular user. The user can decide on a specific search strategy conducted in selected patent databases and/or libraries (i.e., the scope of the search). Since September 2004, serv.ip offers also a faster and much more targeted search method: the "express search". Using this standardised product, the research focuses on the state of the art in the specified field or area providing an overview of the current (technical) situation, a market outlook and future potential in a comprehensive manner. The output of the product is a standardised report indicating the findings along the topics mentioned before. Using the express search product, the results are made available within four weeks at the latest and cost either € 1,320.- (simple express search results without documented expert opinion) or € 1,716 (with documented expert opinion) (Austrian VAT included).

The search for trademark similarities is conducted in a similar way; a database search of word and/or picture trademarks is offered, providing an overview of the current situation. The costs for trademark searches vary with respect to the delivery time needed. If the results are needed within three hours, the applicable fee amounts to € 179; if it suffices to have the results within 3 to 5 working days, € 134 are charged. If the search is to include also data from the company registry ("Firmenbuch"), additional fees apply.

Access to internet services offering specialised database research for patents and trademarks are provided as well, as is also a monitoring service for trademarks where companies get an alert once a particular trademark has been registered/ altered.

Roadshows

Within the scope of the campaign ideas.well.protected, serv.ip and the Austrian PO organise roadshows throughout Austria. These roadshows can be seen as "information days", where different speakers inform the interested audience about relevant topics concerning legal protection instruments for research and development, recent developments in IPR, available public support services (i.e. serv.ip) and related subjects. This campaign is held in all Austrian federal states. SMEs are one of the main target groups of the campaign.

Evaluation and performance

In terms of performance, data derived from the monitoring instruments employed and from annual reports can be drawn upon in order to give an assertion of the performance of the service – no formal evaluation has been carried out on the serv. ip services to date.

As concerns the user group the available data suggests that, besides enterprises, patent attorneys represent a considerable user share of the patent- and trademark searches. In contrast, the roadshows are attended mostly by SMEs and single entrepreneurs.

In 2005, the number of searches and reports completed by serv.ip reached 2,256. According to official documents, the service team carried out 333 searches without documented expert opinions, 1,218 searches with documented expert opinions, and 705 written expert opinions alone (without search reports). Approx. 250 of all searches were supplied through the use of the "express search" product.

Between August 2005 and March 2006, the first roadshow "ideas.well.protected" took place in Austria. 8 events were held in total. Around 700 people, mostly from SMEs, benefited from these information sessions. Serv.ip participated also in events organised by other institutions (i.e. "Lange Nacht der Forschung/Long Night of R&D").

In terms of marketing activities, up-to-date information about serv.ip and its support services is available through a number of distribution channels including advertising in classical media, the internet, the usage of multipliers and existing networks and, of course, the roadshow "ideas. well.protected". Information on the roadshow is spread through pro-active contacting of interested parties (e.g., chambers of commerce at regional and national level).

8.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

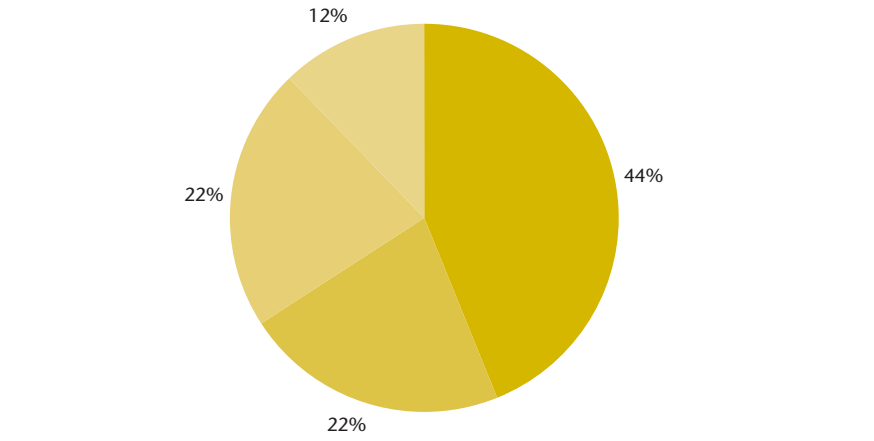
The survey was carried out on two distinct user groups. On the one side, 12 express search users were interviewed to share their experience with the serv.ip express search services (the available address pool allowed for an identification of around

35 users, all of which were contacted); and, on the other hand, 44 users/attendants of the roadshow "ideas.well.protected" were questioned on their experiences. Considering the small sample size of the express search users, great care has to be taken when interpreting results regarding this service.

As with respect to roadshow attendants, 44 % had less than 9 employees. A further 22 % had 10 to 49 employees and 50 to 249 employees, respectively (see Graph 88). The company size distribution of the express search users showed the following picture: 7 out of 12 express search users have not more than 9 employees, 3 have 10 to 49 employees while 3 employ more than 50 persons.

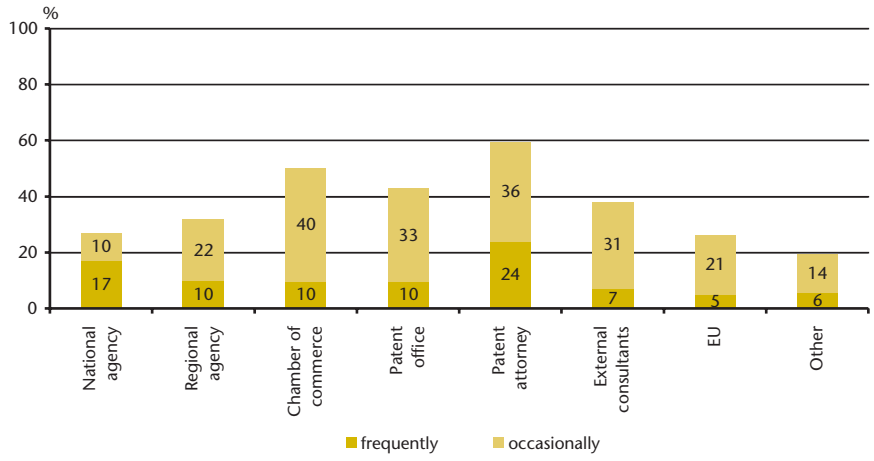
Looking at the development activities, the underlying benchmarking study reveals a significant amount of innovative companies among the users of both services. Between 2003 and 2005, 64 % of the roadshow users/attendants introduced new or significantly improved products onto the market; around 40 % introduced process innovations. During the same time, 9 out of 12 express search users delivered product innovations to customers, 6 came up with process innovations. As concerns R&D, around 90 % of the roadshow users/attendants conducted intramural R&D, on average 50% of the staff work in R&D. Regarding express search users, 10 out of 12 users were engaged in intramural R&D, almost 40 % of the staff works in R&D.

Graph 88 serv.ip–Company size distribution in interview sample, 2005, percentage of respondents, roadshow users



Source: User Survey, n = 44

Graph 89 serv.ip–Usage of different service providers by SMEs, percentage of respondents, roadshow users*)



**) multiple answers allowed. Source: User Survey, n = 44*

Roadshow users/attendants most frequently took advantage of the service offerings of patent attorneys and chambers of commerce (see Graph 89). As with other services analysed, the high usage rate of patent attorneys underlines the significance of this type of service provider for IPR-affine SMEs; the high role chambers of commerce play can be attributed to relatively well working collaboration patterns of serv.ip with the chambers – the latter helped significantly in organising the roadshow events. Surprising is the relatively low share of users who made use of national development agencies, despite their high significance for R&D funding in the Austrian innovation system. This may point to particularly low cooperation levels between serv.ip and the agencies; an assumption which is substantiated further in the course of the user survey and also in statements of IPR experts.

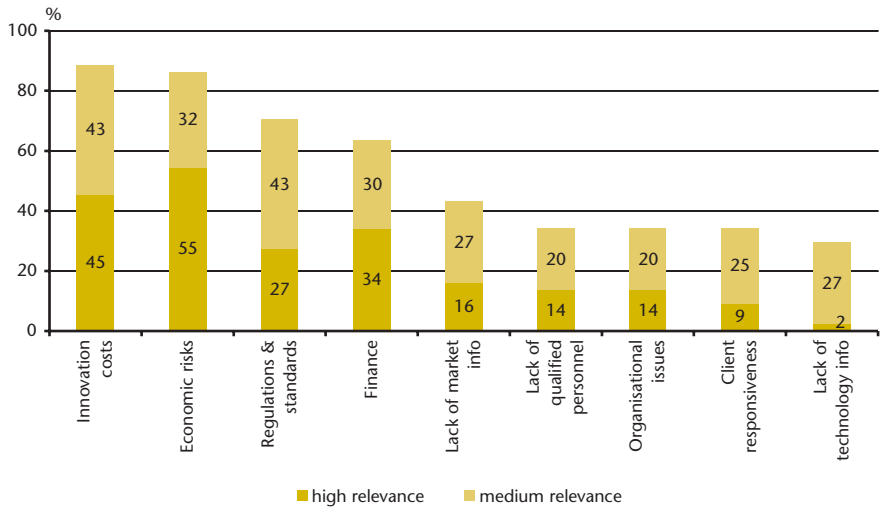
Express search users made frequent use of national and regional agencies, 4 and 3 users, respectively; 5 out of 12 users took at most occasional advantage of the patent office.

As regards factors hampering innovation activities, the roadshow users/attendants complained mostly about economic risks (for 55 % of high and 32 % of medium relevance), high innovation costs (for 45 % of high and for further 43 % of medium relevance), and financial sources associated with innovation projects (for 34 % of high and 43 % of medium relevance) (see Graph 90). Almost the same result patterns were found for express search users.

Between 2003 and 2005, the majority of the roadshow users/attendants stated that they used at least some IP protection method and employed a variety of methods at the same time; only few (5 %) had no deliberate IPR strategy in place (see Graph 91). Thus, a high share of attendants can be seen as experienced IPR users which is – for an IPR awareness raising campaign – somewhat of a surprise. Comments gathered in course of the user survey suggest that many of the attracted experienced IPR users took advantage of the event because they wanted to inform themselves on possible news and updates concerning the IPR framework.

Also qualitative statements point to two distinct user groups: "IPR freshmen" with relatively little knowledge on IPR and "IPR seniors" with considerable IPR know-how. This heterogeneity illustrates that user segmentation may be an important issue for awareness raising campaigns, given the broadness of the topic of intellectual property rights: While overall satisfaction levels were not bad (see also below), some of the experienced users who looked for answers to specific questions and/or wanted updates on e.g. new legal procedures were a bit disappointed to not get such information. For example, some users stated that "*"specific information*

Graph 90 serv.ip–Hampering factors for innovations, 2003 to 2005, percentage of respondents*), roadshow users



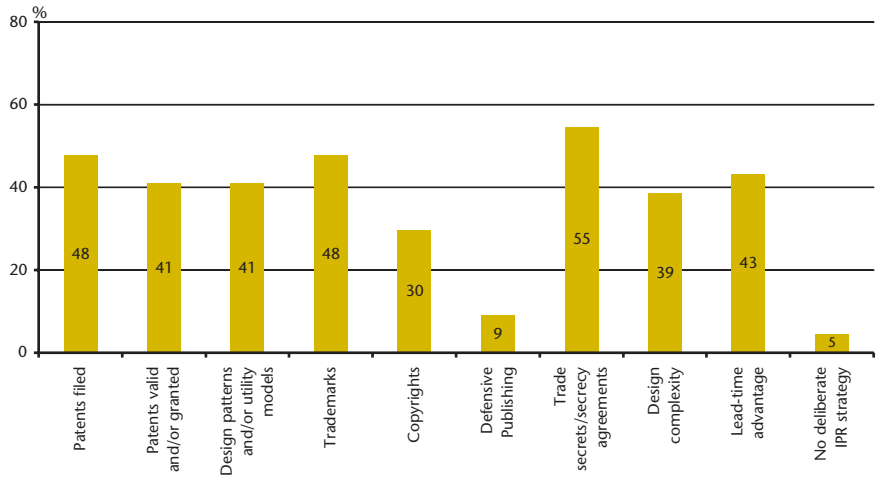
*) multiple answers allowed. Source: User Survey, n = 44

concerning certain [business] sectors would be very helpful." (roadshow attendant)". Others again found the information provided as too detailed/complex. The variety of statements given in this context underlines the importance of action taken to address only certain user segments/target groups at a time (resp. event). Measures to better tailor events to specific target groups (e.g., clear statement on what level of IPR know-how is expected/aimed for; possibilities to collect questions from prospective attendants before the actual event starts, in order to adapt presentations) are possible options to think about.

When it comes to the express search users, the survey results reveal that 8 out of 12 users filed for patents between 2003 and 2005; 5 held valid patents. Although half of the users (6) utilised trademarks as a protection method, some stated that they employ also informal protection mechanisms (see Graph 92). The main finding that patent database users are also frequently patentees may be expected and is also in line with findings from similar services (see e.g. results from the case study PIC Stuttgart) – however, as patent information may be a significant source of technical information also for non-patentees the results suggest that an increase in such non-patent users could be aimed for.

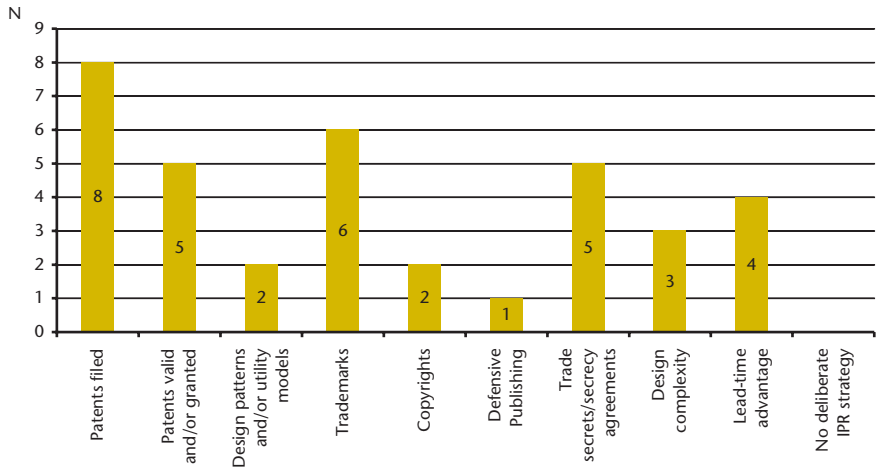
For the roadshow users/attendants, costs, time issues and unclear cost/benefits of IP protection represent the main internal barriers for using IPR methods (see Graph

Graph 91 serv.ip–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*), roadshow users



*) multiple answers allowed. Source: User Survey, n = 44

Graph 92 serv.ip–IP protection methods employed by service users, 2003 to 2005, number of respondents *), express search users



*) multiple answers allowed. Source: User Survey, n = 12

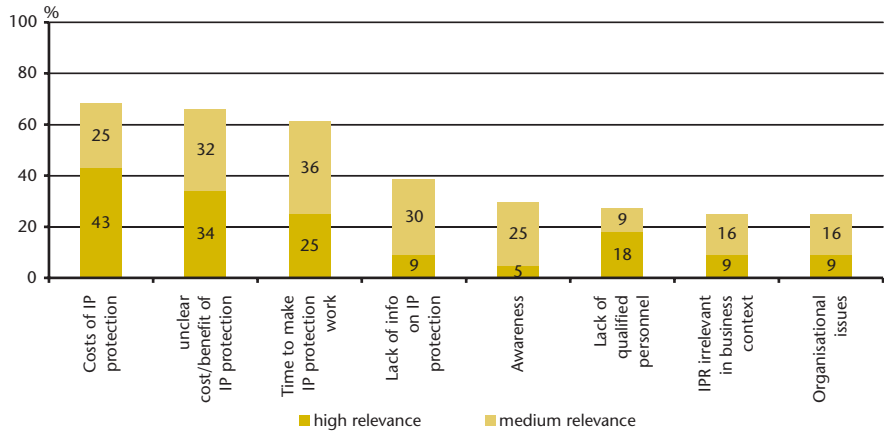
93). Company-internal barriers are perceived to be less of an obstacle. The findings for the express search users show a similar picture. Overall, the findings are in line with those from the other services analysed.

External barriers are perceived to be obstacles of rather medium relevance: the lack of information on available support services (high relevance for 14, medium for 23 %), the lack of accessibility (for 14 % of high and 18 % of medium relevance) and the lack of quality of available external support services (for 7 % of high and 20 % of medium relevance) are not among the highest ranked barriers. As for express search users, 6 out of 12 express search users considered the lack of information on available services relevant as an external barrier.

User reach-out and satisfaction levels

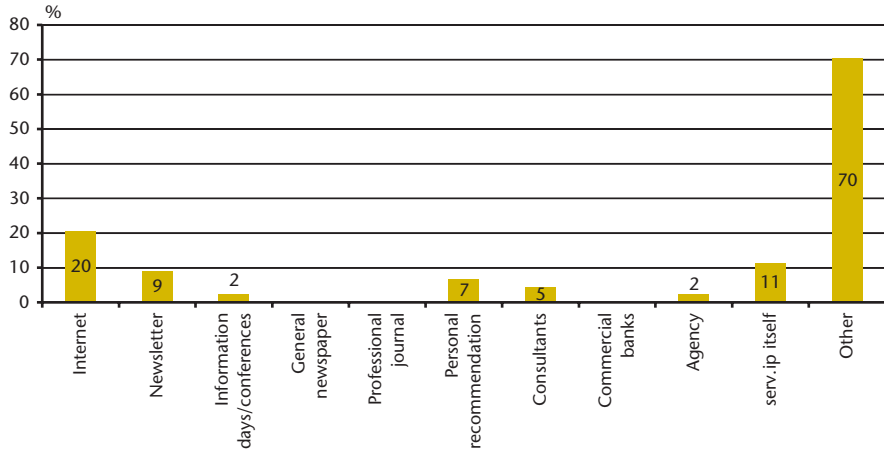
Information channels by which users got to know about the campaign "ideas.well. protected" were dominated by invitations from the regional chamber of commerce and word-of-mouth recommendations ("other channels": 70 %, see Graph 94). In addition, 20 % also gathered information through the internet, around 10 % received newsletters. Surprisingly, only 12 % received information from the service providing organisation itself. Even more interestingly, very few companies got to know about the campaign from agencies (2 %) – as noted before, this points to improvable cooperation patterns between serv.ip and the technology/development agencies in the respective regions. Regarding express search users, the internet, serv.ip itself and other channels (i.e. patent attorneys and networks) were

Graph 93 serv.ip–(Internal) barriers to using IP protection mechanisms, percentage of respondents*), roadshow users



*) multiple answers allowed. Source: User Survey, n = 44

Graph 94 serv.ip–Information channels, by which users got to know about the service, percentage of respondents*), roadshow users



*) multiple answers allowed. Source: User Survey, n = 44

considered as most important information sources. Likewise, no express research user heard about serv.ip through an agency.

The users/attendants of the roadshow were, on average, quite satisfied with the service: All aspects (the competence of staff, the quality and relevance of the provided information, etc.) are graded with "2" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied). Around 80 % consider the extent of the roadshow offerings to be adequate, 16 % think it's too narrow/superficial. Some users complained, though, about "…*too much focus on patents as a means to protect IP*" (roadshow attendant). Around 60 % state that the benefits are adequate to efforts – 27 % think that the benefits clearly outweigh the efforts.

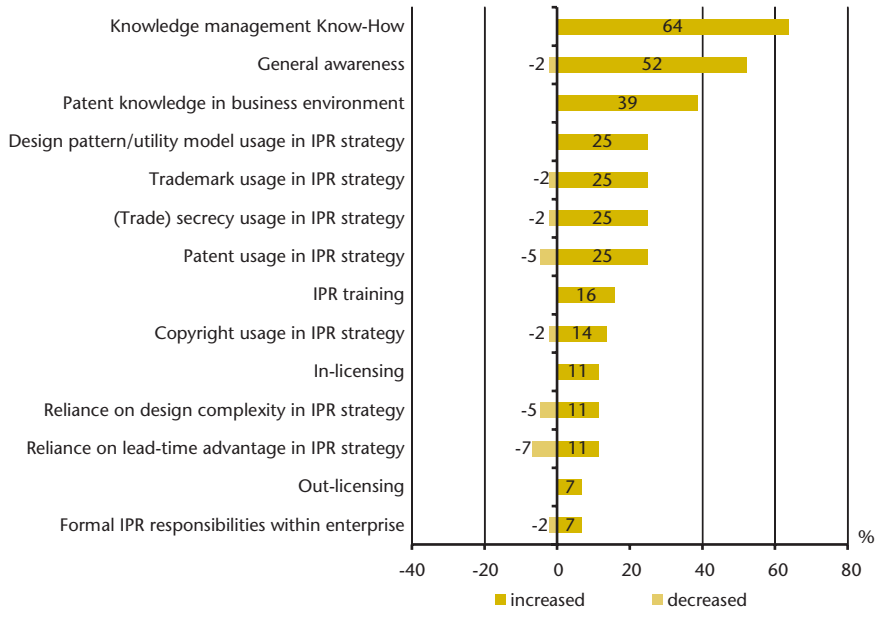
8 out of 12 express search users consider the extent of the service offerings to be adequate, 3 think it's too narrow/superficial. As expected for a service which offers its services also via the internet, spatial distance is not a problem: 9 out of 12 users consider it as a low barrier. In addition, 7 out of 12 users claim administrative burdens to be quite low when using the service. Overall, 7 express search users state that the benefits are adequate to the efforts, and 3 users think that the benefits clearly outweigh the efforts.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should also inquire into the added value of the service – i.e., what would have happened in case the service were absent. This is done in order to isolate a "net effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other type of changes incurred within the enterprise, as a result of using the service, are to be recorded (these changes are referred to as "behavioural additionality").

According to the user survey, the most prominent behavioural changes induced with roadshow users concern the general knowledge management know-how, general IPR awareness and patent knowledge in the business environment, which increased for 64 %, 52 % and 39 % of the users, respectively (see Graph 95). Overall it seems that the event has not just delivered information about the various forms of IPR usage; the campaign also fostered the usage of non-patent IP

Graph 95 Behavioural additionality of the roadshow ideas.well.protected, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 44

protection methods and offered an understanding of IPR strategies in selected companies.

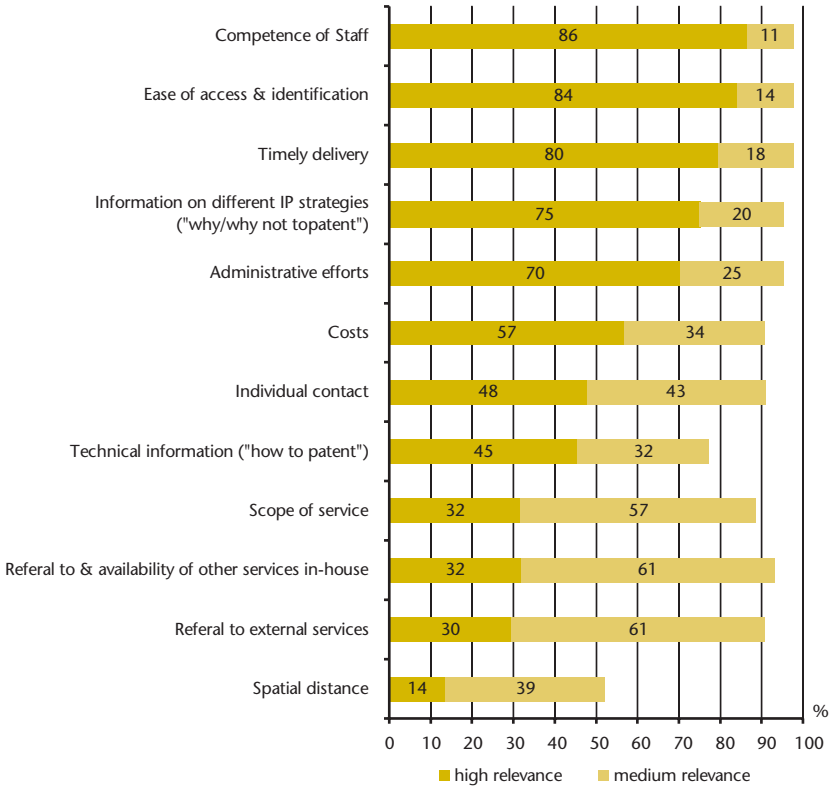
Identified by almost all roadshow users/attendants, the most important elements of a service comparable to the roadshow are the competence of staff closely followed by the ease of access and identification and timely delivery, meaning in the context of the campaign, to offer compact information within a reasonable period of time (see Graph 96). Information on different IP strategies (why or why not to patent) was also considered to be one of the most important key factors. Technical information and spatial distance received the lowest rankings.

Services comparable to the express search should, according to 11 out of 12 users, build on the competence of staff and information on different IPR strategies (for 10 of high relevance). The fact that timely delivery is crucial to such as service (10 agree) is self-explanatory. The significance put on timely delivery may lead to a situation where some firms may have special search strategies implemented, such as having two independent parties conduct patent searches on the same subject:

> *"For us, it is vital to get patent information as fast as possible. If a patent search covers 80 % of the ground in a certain amount of time, it is for us of more use than a search which covers 99 % but takes forever. In practice, we contract two service providers to perform a scan within a specified time period. We then compare the results, and the combined findings are usually much more informative than if we would have contracted only one party and given it more time to perform its task." (User survey: serv.ip SME user)*

For 9 users, costs are only of a medium relevance which seems reasonable: Costs may not matter that much when a head start in filing for a patent before a rival can do so is aimed for.

Graph 96 Key quality factors for a service such as the roadshow ideas.well. protected, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 44

8.3 Elements of good practice

The service exhibits the following strengths (i.e. elements of good practice)

- Availability of ample expert staff;
- Organisational mode: separate legal entity from the patent office acting as service delivering unit; this entails the following advantages
  - flat hierarchies and less bureaucracy allow for better customer-orientation;
  - patent office can concentrate on core competence of patent filings;
- Fast execution of services and timely delivery (i.e. express search);
- Involvement of external institutions when setting up road shows, which allows for high user take up.

The following challenges remain:

- Improvable cooperation with technology/development agencies;
- Introduction of evaluations as a tool to assert performance and to allow for organisational learning;
- Stronger user segmentation in awareness raising campaigns;
- Broader coverage (i.e. higher coverage also of informal protection mechanisms).

9. Intellectual Property Assistance Scheme (IPAS)

Country:		Ireland
Original title:		Intellectual Property Assistance Scheme (IPAS)
Target group:		SMEs
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
	X	Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

9.1 The Intellectual Property Assistance Scheme in a nutshell

The IPAS Scheme is a service where Irish SMEs can get financial support for their patenting projects. It was chosen as an example of a support service operated by a national funding agency in the scope of the underlying benchmarking study for its unique character in Ireland, its high selectivity, its expert staff running the service and its effective collaborative links with patent attorneys. Limited resources and a tendency towards marginalisation within the funding portfolio of the service-running development agency (also expressed in terms of marketing activities) as well as a rather low user take up (which is in turn also due to the high selectivity) can, however, be seen as future challenges.

The IPAS scheme is provided by Enterprise Ireland (EI), the national agency for the development of indigenous enterprises in the manufacturing and internationally traded services sector. It is a rather old scheme (dating back to the 1970s). Although the scheme itself has changed over time, the objective remains to assist SMEs to protect their intellectual property arising from R&D activities by providing advice and financial support. Directly responsible for the IPAS scheme within Enterprise Ireland is the Intellectual Property Unit (IPU).

The IPU staff assesses applications for funding under the IPAS scheme and undertakes the role of an "honest broker" by providing advice to enterprises on information that they may have received from their patent attorney. In addition, the IPU operates a similar scheme for the higher education sector, named Higher Education Sector Patent Protection Scheme, which accounts for three-quarters of the Unit's annual budget.

The IPAS scheme is focussed on patents; funding is only provided for patent protection – IPAS does not provide any financial support for other IPR related services, i.e. initial patent searches or filings. However, funding towards the cost of these activities may be available from Enterprise Ireland. The IPAS scheme thus focuses on the process of development/registration of IPR only and does not cover other phases (prior search, acquisition, utilisation of IPR) of IPR usage and development. The service is offered on a national level. The patent-centricity can be seen as a disadvantage, as there are no other schemes available in Ireland for SMEs to tackle the issue of IP management by utilising the full range of IP protection instruments.

According to EI, the IPAS scheme is a relatively small financial support scheme within the context of the support provided by Enterprise Ireland to indigenous SMEs and no target figures have been set – though this may change in the future.

Background and Resources

IPAS was originally developed in the 1970s by a predecessor organisation to Enterprise Ireland and was based on similar IPR support found at that time in the UK and Denmark. Legislation passed by the Irish parliament had allowed for the provision of support in relation to inventions (IPAS was originally called the Inventions Assistance Scheme). Apart from its name change, the only major change in the operation of the IPAS has been its focus on indigenous owned companies in the manufacturing and internationally traded service sectors employing more than 10 employees. Enterprise Ireland may also provide support to enterprises employing less than 10 employees if they are considered to have high growth potential.

IPAS is the smaller of the two IPR dedicated schemes operated by Enterprise Ireland. As noted above, the Intellectual Property Unit (IPU) of Enterprise Ireland also provides the Higher Education Sector Patent Protection Scheme (HESPSS) which seeks to provide advice to researchers in the higher education sector on IPR matters, and to fund IPR for inventions that have a potential for commercial development. The HESPPS service is of much more recent origin than the IPAS service (start date: July 1998).

The Intellectual Property Unit is operated by an experienced team (3 full-time equivalents [FTE]), all of whom have extensive experience (10+ years) in assisting SMEs in relation to patent protection. The same personnel operate both the IPAS and the HESPPS schemes. However, retirements have brought the workforce down to currently one person.

The total annual budget for the two schemes is estimated at € 1.3 mio (2006) of which the IPAS scheme accounts for € 0.3 mio. The budget for the two schemes is exclusively for financial assistance towards patent protection; staff salaries and overheads are not included in this figure.

Modes of operation

The IPAS scheme has three distinctive elements:

- Advice on IPR in general, covering also copyright, trademark and other IP protection instruments;
- Advice on what patent agents/attorneys can do for the SME and in which countries the SME should initially seek patent protection;
- A subsidy to be paid out to the patent attorney undertaking the patent protection service on behalf of the SME.

The eligibility criteria for the IPAS scheme are quite strict: Enterprise Ireland must be convinced that the invention is capable of patent protection, technically feasible and that there are plans for commercial exploitation. According to official documents, funding will be provided not for initial filing costs but for costs later incurred in the patenting process which are usually higher. Patenting costs can be covered to 100 %, whereby national and international (in relevant countries) filings are considered.

The subsidy can amount up to € 30,000 towards the cost of preserving their initial patent application. This funding can be apportioned over a number of years, e.g. € 10,000 in year 1, € 10,000 in year 2 and € 10,000 in year 3. Companies that are considered to have a high growth potential may be eligible for a higher level of support under IPAS as part of an integrated support package. Companies in this category may be eligible for IPAS funding of patent protection costs of up to a maximum of € 150,000. The payment of the IPAS subsidy is made directly by Enterprise Ireland to the eligible company's patent attorney. Some users commented favourably upon this aspect of the scheme as it assisted their cash-flow situation.

Under the terms of the IPAS scheme, companies may be required to pay Enterprise Ireland a share of the royalty income resulting from the successful exploitation of the invention. However, such royalty agreements (which are usually drafted on an individual basis with the supported SME) are only intended to cover the subsidy

costs plus a small interest (source: IPAS brochure). The IPAS measure thus does not operate on a per-profit basis; this is considered difficult to administer. In case the invention is unsuccessful, the investment by Enterprise Ireland is written off.

Another important aspect of the IPAS scheme is that the IPU team can help the SME to interpret the legal advice that they may have received from their patent attorney ("honest broker" role"). While, for example, the patent attorney may advise on the merits of patent protection in a number of countries the IPU team may help the company to understand the importance of prioritising protection in those countries where its invention will be initially sold. Thus, the company may not only benefit from the IPAS subsidy but also from the "honest broker" advice from the IPU team.

With respect to marketing, the Enterprise Ireland web site, brand creation activities and information provided to companies by other Enterprise Ireland executives have been used mostly to disseminate information about the service. In addition, the IPU manager has made presentations to County Enterprise Boards which are responsible for the development of enterprises employing less than 10 employees.

Experts believe that IPAS is perfectly placed with Enterprise Ireland (as opposed to having it operated by the patent office or another institution) which is offering complementary services not only related to R&D and IPR but also management and could not be provided in the same way by any other IPR player, i.e. the Irish Patent Office. The Irish PO is, compared to other European POs, a relatively small organisation with limited resources and solely focused on patent registration. Compared to Enterprise Ireland, the Irish PO does not have the same level of connections with SMEs. It should be noted, however, that the Irish PO provides a range of information to SMEs on a spectrum of intellectual property rights issues through its two information centres and its web site. The Office also makes presentations to both SMEs and micro-enterprises (those employing less than 10 employees).

Experts suggested that if the Irish Patent Office were to provide financial assistance to SMEs towards the cost of patent protection, a potential conflict of interest may arise (i.e. the Irish Patent Office may not be sufficiently independent given that it generates revenues from the registration of patents).

Evaluation and performance

The performance of the service is difficult to interpret. First, and most strikingly, the IPAS scheme does not have any quality assurance mechanisms in place, and most notably, no evaluations were carried out during the lifetime of the service. This can be seen as a disadvantage, not only in terms of performance measurement, but also in terms of governance of the scheme. It should be noted, however, that the IPAS scheme is a relatively small scheme within the context of the total support offered by Enterprise Ireland to its client companies in the manufacturing and internationally traded services sectors (in the year ending December 31, 2005, Enterprise Ireland provided € 130 mio in financial supports to client companies).

In terms of available output indicators, the following data was given.

- 100 applications for funding were received in 2005; 90 of those stemmed from SMEs, the rest from individuals (private inventors);
- Within this sample of the 100 applications, 15 firms (new support cases) were provided financial support;
- The average amount of subsidy given in 2005 was € 9,000 to each company.

It is important to note that firms may be approved for IPAS financial support in year 1 but the timing of the payments may be made over 1-3 years. It is also important to note that the IPU may reject an application from a SME for IPAS funding for an initial patent filing but accept a renewed application at a later date for funding to cover the later stages of patent protection. Thus while only 15 % of SMEs are successful in applying for IPAS financial support in any one year, those that are unsuccessful may re-apply in the following years.

9.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

41 companies who used the support of the Intellectual Property Assistance Scheme were surveyed about their experiences. 69 % of the interviewed companies employ not more than 9 persons, 24 % have 10 to 49 employees; only 7 % are larger SMEs with up to 249 employees (see Graph 97).

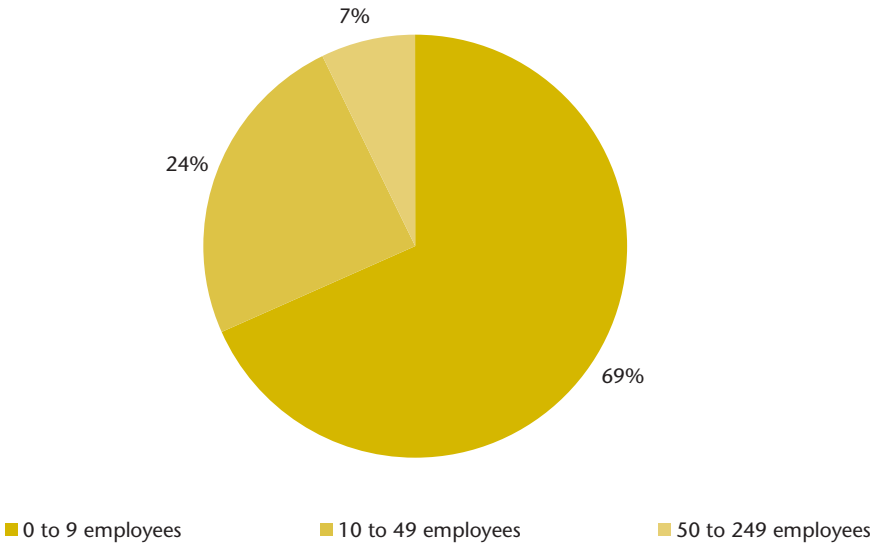
Regarding development activities, service users have been very innovative between 2003 and 2005: 68 % introduced product innovations (new or significantly improved products), 22 % were able to introduce process innovations in the same time. As concerns R&D, almost 81 % conducted intramural R&D, 66 % were engaged in innovation activities related to design, and 63 % in the market introduction of innovations. On average, about 60 % of the staff works in R&D.

IPAS service users primarily utilised the service offerings of national agencies (most notably Enterprise Ireland, which is not surprising giving the strong role of EI in Ireland as a service provider and also noting that IPSAS is an EI service) and patent attorneys followed by the Patent Office and external consultants (see Graph 98). The high usage levels of patent attorneys might be explained by the fact that this profession benefits to a rather large extent from the granted subsidies by IPAS; as a matter of fact, IPAS also works as an entry point for patent attorney services by maintaining and marketing its list of registered patent attorneys.

Between 2003 and 2005, a considerable share of service users experienced hampering factors for innovations. Companies complained mostly about the lack of appropriate sources of finance (of high relevance for 61 %, medium for 24 %), high innovation costs (for 44 % of high and 37 % of medium relevance) and economic risks (for 32 % of high and for further 32 % of medium relevance; see Graph 99). Insufficient flexibility of regulations and standards, a lack of information on technologies and organisational issues are reported to be of less critical nature.

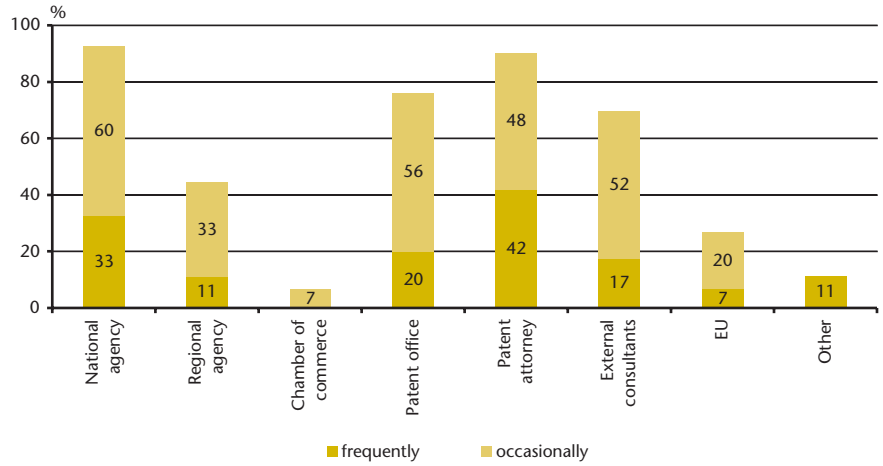
Regarding the methods of IP protection, and not surprisingly for users of a subsidy service for patent costs, most users (85 %) filed for a patent between 2003 and 2005, or had a patent granted or valid in that time period (54 %, see Graph 100).

Graph 97 IPAS–Company size distribution in interview sample, 2005, percentage of respondents



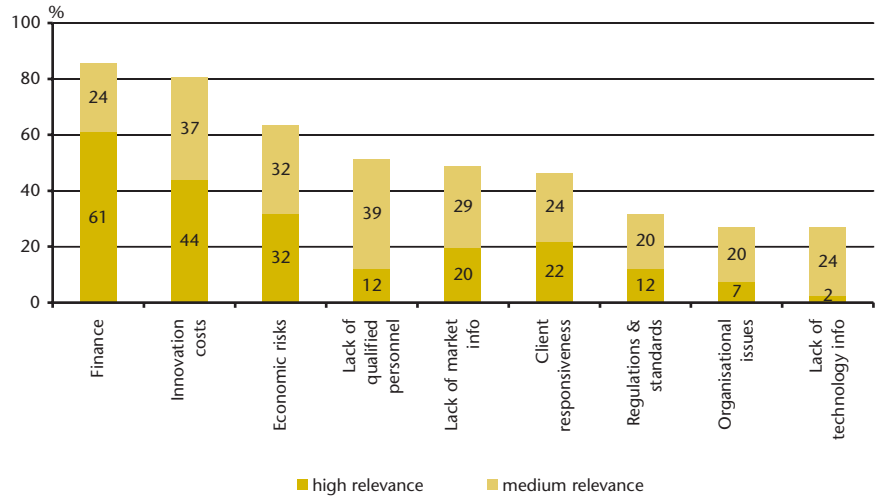
Source: User Survey, n = 41

Graph 98 IPAS–Usage of different service providers by SMEs, percentage of respondents*)



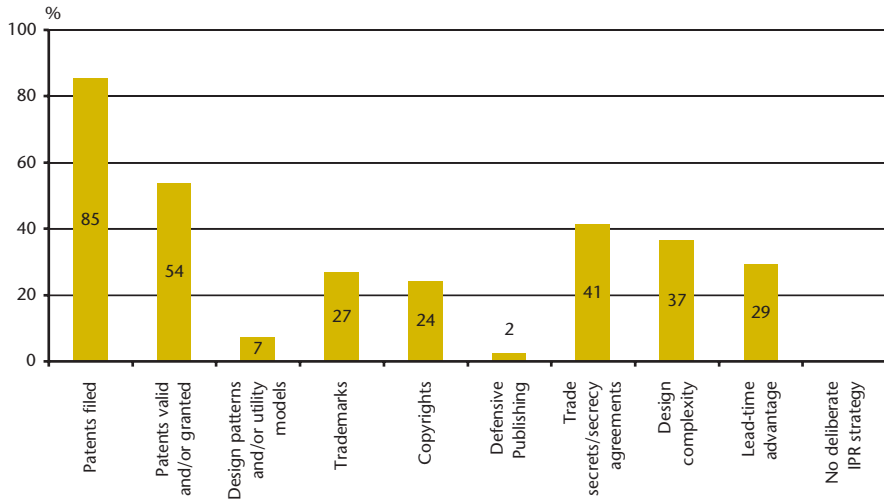
*) multiple answers allowed. Source: User Survey, n = 41

Graph 99 IPAS–Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



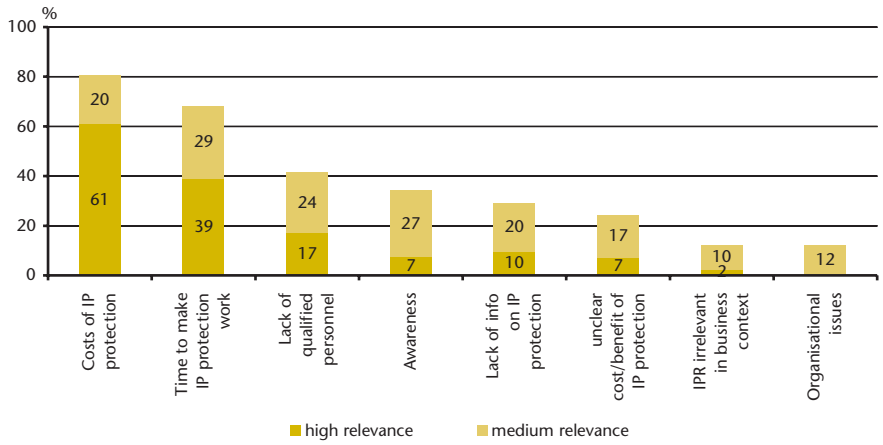
*) multiple answers allowed. Source: User Survey, n = 41

Graph 100 IPAS–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*)



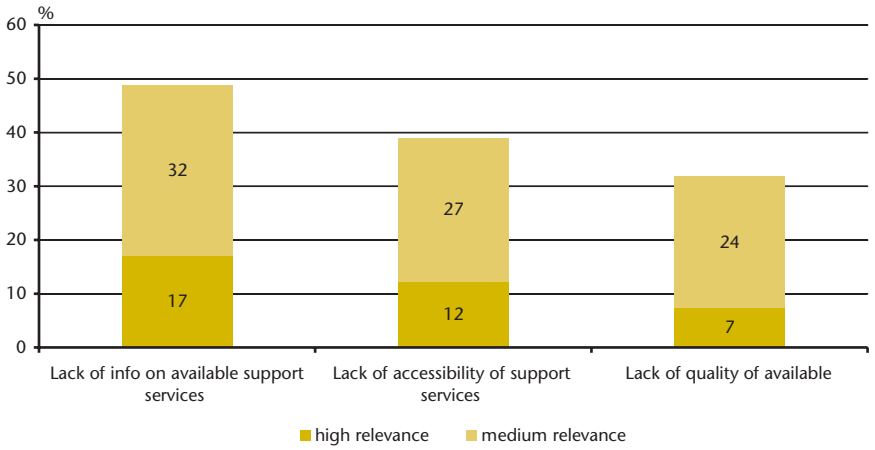
*) multiple answers allowed. Source: User Survey, n = 41

Graph 101 IPAS–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



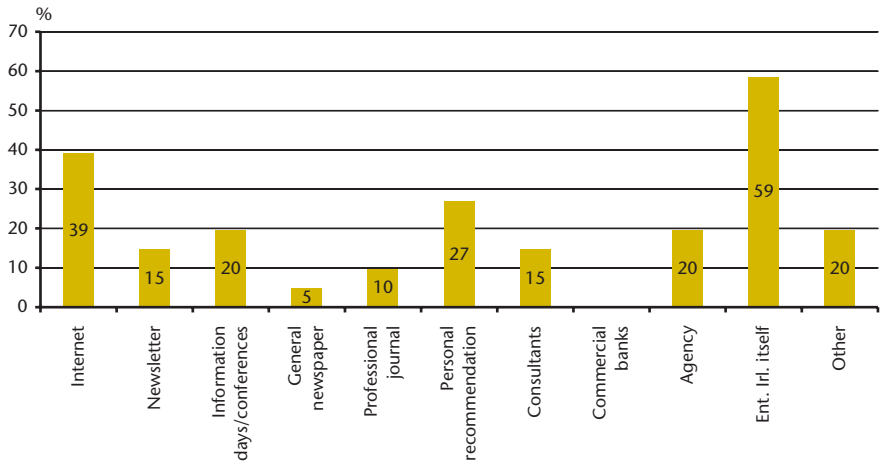
*) multiple answers allowed. Source: User Survey, n = 41

Graph 102 IPAS–(External) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 41

Graph 103 IPAS–Information channels, by which users got to know about the service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 41

In addition, however, a high number of users employed informal protection methods, i.e. 41 % relied on trade secrets, 37 % relied on the complexity of design and 29 % tried to maintain a lead time advantage over competitors.

The main internal barriers perceived for using IPR are, by far, the costs of IP protection (for 61 % of high and for another 20 % of medium relevance) and the time to make IP protection work (for 39 % of high, and for 29 % of medium relevance) (see Graph 101). The lack of qualified personnel plays an important role, too. Organisational issues are considered less relevant. External barriers towards the availability of support services are perceived to be less severe obstacles but still not unimportant in the overall context of the service (see Graph 102).

User reach-out and satisfaction levels

As the survey shows, the main source of information on the IPAS scheme was Enterprise Ireland itself (59 %) as well as the internet (39 %), most probably Enterprise Ireland's web site. This is followed by personal recommendations (27 %), information days and agencies (both 20 %); around 20 % of the companies also received information from other channels, notably patent attorneys, underlining a good cooperation between EI and members of that profession (see Graph 103).

IPAS users are, on average, very satisfied with the offered service. All the different aspects of service provision are rated with "1.7" or better (on a scale from 1= very satisfied to 4= unsatisfied); the highest grades were received for the competence of staff and delivery time (both "1.4"; see Graph 104). 86 % of the users gauge the extent of the service offerings to be adequate; 8 % think it is too narrow/ superficial.

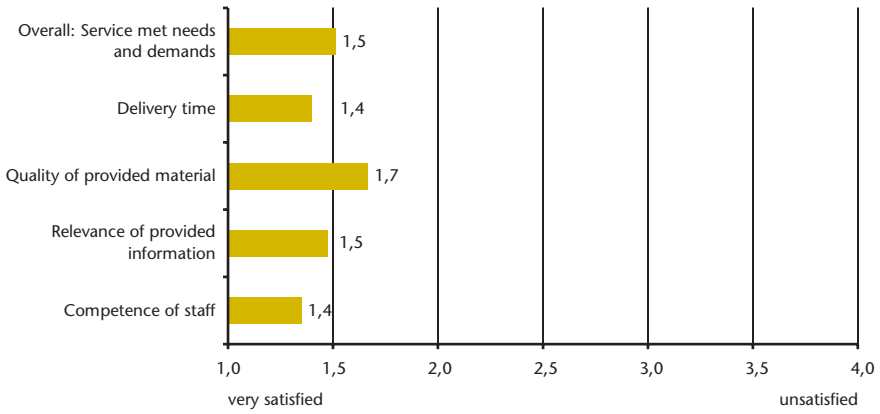
Spatial distance seems not to be a problem (for 68 % a very low-level barrier and for another 30 % a factor considered to be acceptable). 55 % think that the benefits of using IPAS clearly outweigh the efforts; 43 % state that the benefits are adequate to efforts.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should also inquire into the added value of the service – i.e., what would have happened in case the service were absent. This is done in order to isolate a "net effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other type of changes incurred within the enterprise, as a result of using the service, are to be recorded (these changes are referred to as "behavioural additionality").

In this sense, pure additionality effects of the IPAS scheme seem to be rather low (see Graph 105). 9 % of the undertakings would not have been carried out at all

Graph 104 IPAS–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



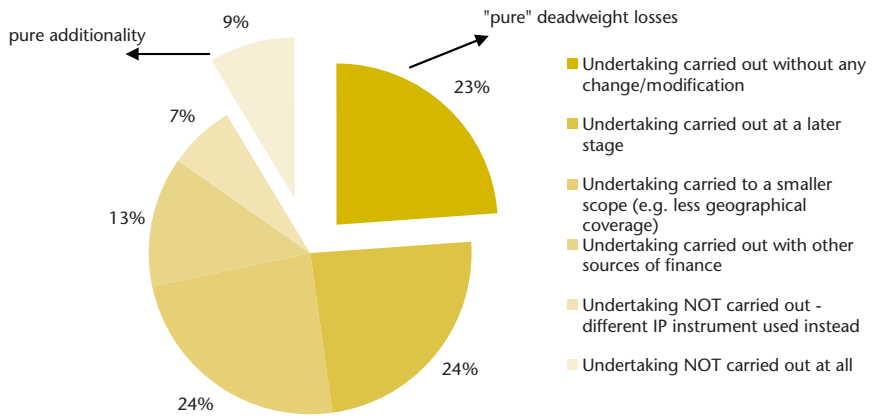
Source: User Survey, n = 41

in the absence of support from the service. In addition, 24 % would have been carried out but to a smaller scope, another 24 % would have been carried out their project at a later stage. By contrast, around 23 % would have carried out their patenting project, regardless of the availability of the service.

Although IPAS does not embody the typical general awareness raising measure, the most significant changes in attitudes towards the protection of IPR took place in general awareness (increased for 78 %) and knowledge management know-how (increased for 61 %). Attention to the degree of formal IPR responsibilities and patent knowledge in business environment has increased in both cases by 51 % (see Graph 106). Compared to these findings, the attitude towards other formal IPR protections methods, i.e. trademarks, design or copyrights, has also increased, but to a lesser degree. The usage of trade secrets did not diminish very noticeably.

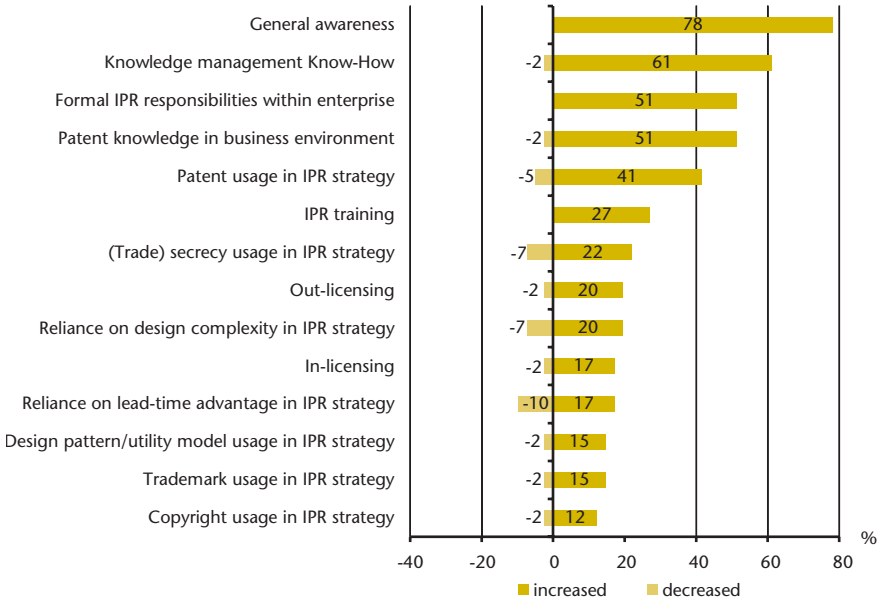
The surveyed users underline the importance of the factors competence of staff (for 90 % of high, for 5 % of medium relevance) timely delivery (high relevance for 71 %, medium for 22 %) and individual contact (for 68 % of high, and for 17 % of medium relevance) for a service similar to IPAS (see Graph 107). The high relevance given to the individual contact may be due to the very selective pro-

Graph 105 IPAS–Additionality of the financial subsidy, percentage of respondents



Source: User Survey, n = 41

Graph 106 Behavioural additionality of IPAS, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 41

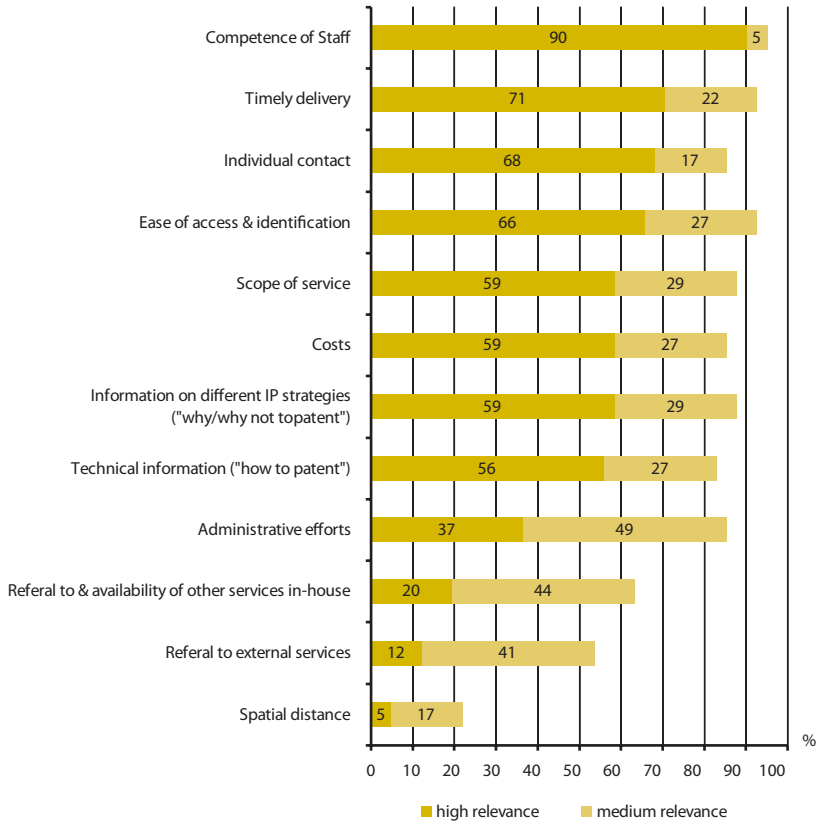
cedure and thus the expressed interest to help a smaller number of companies intensively. Low relevance rates are given to internal and external referral possibilities (which is surprising) and spatial distance.

9.3 Elements of good practice

IPAS exhibits the following good practice elements:

- Experience of Enterprise Ireland's IPU staff, who are able to give advice not only on patent protection but also how enterprises should seek patent protection in those countries which offer the best prospects for their invention;
- "Honest broker" role: assisting SMEs to understand the advice that they may have received from patent attorneys in relation to intellectual property;
- Integration into a major SME funding organisation and the availability of complementary services and business know-how within Enterprise Ireland (not only related to R&D and IPR but also in terms of marketing and management development);
- Organisation mode of EI in general: Central institution with regional offices, expertise pooled at headquarter level;
- Uniqueness: Only service of its kind in Ireland;
- Collaboration with patent attorneys: the scheme may act as a marketing tool and entry point for the service of patent agents; less crowding out of private service providers;
- High selectivity (but not primarily due to budget restrictions);
- Royalty agreements (where the company has to pay back a share of its income form the successfully commercialised patent to cover the subsidy costs), as

Graph 107 Key quality factors for a service such as IPAS, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 41

they can be interpreted as an incentive for the staff (and as a performance measure).

However, there are also a number of challenges arising:

- Resource constraints;
- Low profile among SMEs;
- The focus on patents and on initial IPR development (registration, etc.) mostly leaves other important areas of IPR support out of the picture;
- Governance: No in-depth evaluations or other quality assurance mechanisms are implemented (though it should be noted that Enterprise Ireland undertakes periodic reviews of its support schemes and is currently examining all schemes in relation to new rules on state aids issued in 2006.);
- Ambiguous performance: Only a small number of financially supported SMEs.

The IPU is at the moment confronted with another important problem: as of January 2007, two IPU staff members have left Enterprise Ireland and the service is now being operated by a single staff member. No decision has yet been taken on providing replacement personnel for the Unit.

10. The VIVACE Programme

Country:		Hungary
Original title:		VIVACE Programme (Vállalkozói Iparjogvédelmi Versenyképességet Alapozó Cselekvési Program)
Target group:		SMEs only
Coverage:		National
Category*:	**X**	(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
	X	Training
		Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

10.1 The VIVACE Programme in a nutshell

The VIVACE programme is an example of a programme working in the context of a country in Eastern Europe (EE). Countries in EE are likely to have to deal with less historic burdens than their counterparts in Western Europe, which means that they can thus take a fresh approach towards the design of IPR services without paying too much attention to long-established institutional set-ups. On the other hand, IPR services in EE have to take the specific phase of economic development of that region into account. The VIVACE programme shows ways of how these challenges can be tackled and is especially active in the domain of awareness raising. The programme also covers a range of preparatory actions needed to introduce "higher level" IPR support services, some of which have already been implemented.

The VIVACE programme, meaning "*Action Plan Promoting Industrial Property Competitiveness of Entrepreneurs*" is a scheme set up and operated by the Hungarian Patent Office (HPO) aiming to foster the awareness of the intellectual property system and the development of an industrial property culture within small and medium-sized enterprises. One of the major objectives of the VIVACE programme is to promote the understanding and use of IP to increase the innovativeness and competitiveness of Hungarian SMEs in a national as well as international context. Organised in co-operation with national and regional partners (the so-called "VIVACE group"), awareness raising measures are offered to a broad public audience, special training sessions and courses on IPRs are held to give SMEs an idea how to manage their IPRs and to keep all interested parties up-to-date with the latest information and developments in the IPR world. Flanking measures, i.e. financial subsidies and economical incentives, have been implemented at various levels. Furthermore, VIVACE promotes all efforts aiming at the reduction of the costs of acquiring and maintaining IPRs.

VIVACE's mission objectives are three-fold:

- Creating awareness for the importance of development of IP knowledge through information services and education;
- Development of user-friendly IP services;
- Availability of economical (financial and/or tax based) incentives to support SMEs and entrepreneurs.

From the beginning, VIVACE has set up clear target figures: The programme aims to reach at least 10 % of all SMEs in Hungary[29] with its service pool. Other operative aims, i.e., an increased number of patent filings or enhanced licensing activity, have been set, too. No restrictions are in

[29] Around 900.000 enterprises were based in Hungary by the end of 2003; almost 99.9% of them were SMEs.

place for certain industries or technology fields. VIVACE targets all phases of the patenting process and the whole spectrum of IPR instruments. A regional focus is given by the fact that VIVACE is not just operated by the HPO but works in close co-operation with other partners in the VIVACE group.

Background and resources

The Hungarian Patent Office can look back on a history of IP education programmes. Since 1950, the HPO has offered IP education programmes at university level; client services are provided since the 1980s. During the last years, structural changes in the knowledge economy and society, information globalisation and a growing global market competition made adjustments in IP awareness and education measures necessary. With the accession to the European Patent Convention and the Community Trademark System, the VIVACE programme was developed to foster the development of an intellectual property culture, especially within SMEs. VIVACE started in 2004 (expected ending 12/2007) as part of the action plan 2003–2006, which is connected to the so-called "Innovation Act" adopted by the Hungarian government. Due to the benchmarking of former "Pre-VIVACE" IP programmes and some regulations amended by the Innovation Act, the preparation time for VIVACE took around one year.

The HPO's attempt to set up a scheme to process and spread relevant IPR information efficiently is based on a two-level industrial property information and education network ("IP network"). Major partners of the IP network are the following institutions (the "VIVACE group"):

- Lower Information Level, Type "A" service providers:
  - ß Hungarian Chamber of Commerce and Industry (HCCI)
  - ß Federation of Technical and Scientific Societies (FTSS)[30]
- Higher Information Level, Type "B" service providers:
  - ß University libraries hosting "PATLIB Centres" (PATLIB)

In a practical manner, VIVACE pools the experience and skills of its partners to offer a networked package of national and regional IPR support services. On the one hand, Type "A" service provider's offer basic information and education at various IP information points in around 33 cities all over Hungary (mostly provided in the premises of the Chamber of Commerce), while on the other hand, Type "B" service provider's offer in-depth information regarding IPR client services and education possibilities at "PATLIB Centres", hosted by university libraries (5 at the moment in Hungary). The first PATLIB Centre ever established is the Industrial Property Information and Education Centre of the Hungarian Patent Office (CIPIE), which is responsible for establishing and maintaining the domestic network.

Overall speaking, the Hungarian Patent Office and the Chamber of Commerce represent the core service providers of the VIVACE programme. According to service experts, the Chamber of Commerce can be seen as important partner with a large regional spread and broad access to the targeted user group, SMEs.

HPO also offers a University Partnership Programme, the "Higher Education Partnership network". Within this programme, the HPO co-operates with around 15 partners from the higher educational sector, which joined the IP education network during the last years. At these partner universities, intellectual property education has a high priority status and is integrated into the curricula of the lectures; topics can range from short IP awareness raising educational programmes to high-level IP professional training. The aim is to foster entrepreneurship among students and provide them with at least a basic concept of IP rights management within a business.

[30] In 2005, the Federation of Technical and Scientific Societies (FTSS) was excluded from the network due to budget constraints.

VIVACE is operated by a staff of around 7 employees on behalf of the Hungarian Patent Office (HPO) as co-ordinator, and by around 25 on behalf of the Hungarian Chamber of Commerce and Industry (HCCI) as service providers. If necessary, the HPO and the Chamber of Commerce can draw on additional staff from other units and/or departments. The HPO's core operational staff includes senior managers and skilled experts which possess relevant IP qualification in different fields (i.e. IP, consulting, PR and marketing, media, etc.). External service providers engaged in the VIVACE scheme (Federation of Technical and Scientific Societies, PATLIB Centres) have at least graduated from different universities and possess experience in dealing with SMEs; however, exact figures concerning the educational background of the staff were not available.

The Hungarian Patent Office has an annual budget of around € 14 mio which is funded entirely from its own income. In 2006, the budget available for VIVACE amounted to € 116.000, compared to € 200.000 in 2005. During the last years, around 15 % of the total VIVACE budget was used for the operational management, which includes marketing and web development, innovation support, documentation development and printing, monitoring of activities, accomplishing benchmarking surveys, initial and periodic training of service providers etc. Regarding marketing activities, a multitude of channels has been employed; from advertisements in regular papers (in the form of around 150 articles which talked about VIVACE) to brand creation activities, road shows (at the very beginning, presentation were held every two weeks at a different location) and the usage of multipliers/existing networks.

Modes of operation

The IP network is the main pillar of VIVACE's service offerings and results from co-operation with and use of existing networks of all service partners. The core service provider, the HPO and the Chamber of Commerce also offer other IPR and Non-IPR related measures to support enterprises and individuals. In the following, the different elements of the IP network and service provider offerings are explained in more detail.

HPO – Hungarian Patent Office

Besides being a governmental institution and offering „regular" patent office services (i.e. granting patents, database research, etc.), the Hungarian Patent Office itself also provides different types of IP education courses: from basic courses on IPR (60 hours) to more advanced level courses (240 hours of education). In addition, tailor made courses are offered for individual requirements.

The Centre for IP Information and Education (CIPIE) exercises a supervisory function for the offered intellectual property trainings, organises courses and IP exams, especially the ones offered for people who want to become patent attorneys. In this light, it has to be noted that every Hungarian patent attorney has to pass a patent attorney's exam which is solely provided by the HPO. In addition, the CIPIE develops, fosters and co-ordinates the IP education system both with respect to graduate and postgraduate studies.

Other services offered by the HPO:

- A special homepage segment of the Hungarian Patent Office is dedicated to provide up-to-date information to the public on events, campaigns, training programs, etc. related to national innovation;
- E-learning programme development: Patent/trademark module;
- VIP Campaign (Information Programme on Innovation), which covers a range of topics ranging from "Commercialisation opportunities" to "Approaching Investors";
- Other specific programmes, i.e. "IP Diploma Award". The HPO provides consultation to students who develop an IP relevant thesis; the finished thesis

is then evaluated by a committee and an IP Diploma Prize is awarded to the successful candidates.

"HCCI": Information service network of the Hungarian Chamber of Commerce

During the last years, 23 (Type "A") IP information and education service locations were set up in existing Chamber of Commerce offices across Hungary as part of the VIVACE programme. Enterprises which are served by the services and measures offered by regional Chamber of Commerce offices are now provided with industrial property information services. In this respect, enterprises can draw on specific IPR support and know-how from experts in the various stages of their innovation activity. The portfolio of support services consists of general information on industrial property, electronic industrial property information tools, i.e. access to relevant databases, etc. Especially the search in patent databases is, according to experts, carried out efficiently and in short time.

Based on statements given by the service providers, HCCI service locations act in some cases more like a referral point than a specific service providing institution; complex issues are handed over rather quickly to experts from the HPO. However, the support by the Chamber of Commerce on IPR issues is very much integrated into a package of other, non-IPR related services, for example: tendering information (information and consultancy), local governmental information and support possibilities as well as access to finance possibilities, i.e. the Micro Credit Programme (Széchenyi Card).

"FTSS": Co-operation with the Federation of Technical and Scientific Sciences

Since 1999, IP information points were opened in the "Houses of Technology" of the Federation of Technical and Scientific Societies (FTSS). By the end of 2005, 10 locations provided IP information services across Hungary. The FTSS service offerings are the same as the ones offered by the HCCI, but were, as opposed to HCCI, terminated due to budgetary reasons.

"PATLIB": PATLIB Centre network with higher education departments

During the last years, PATLIB centres were set at leading Hungarian universities to allow for a better information exchange with R&D, professors and students. The first PATLIB Centre established was the Industrial Property Information and Education Centre of the Hungarian Patent Office.

PATLIB Centres, which are normally based at the central library services of universities or TTOs (Technology Transfer Offices), are focused on students and university personnel and benefits from the experiences gathered from the activities of the HCCI and FTSS. The accumulated knowledge is passed on to PATLIB Centres which provide in-depth information plus tailored services like consultation with entrepreneurs, university courses on industrial property, etc.

Incentives and funding possibilities

Government subsidies can be obtained for international IP applications: 90% of the costs are subsidised. On the other hand, national protection is aided by a new tax refund system from 2005. In 2004, a new application fund system became available, which financially supports prototyping, the preparation of the very first production run, market surveys and utilisation by SMEs. The budget available for this kind of funding amounted to € 300,000 in 2004 and € 800,000 in 2005. Furthermore, other funding pools have been set up to support SMEs with their IP protection, i.e. by the InnoCheque System or other, more regional programmes (i.e. the Regional Innovation Agency Programme, Regional University Knowledge Centre Programme, etc.). It has to be noted that the latter are not official partners of the VIVACE programme but operate in close partnership with the HPO.

In addition, the Hungarian Government provides economic incentives to promote the IP activities of SMEs. An innovation tax was introduced in 2003: Expenditures on obtaining and maintaining national IP protection can be deducted from the original tax base. The tax return flows into an innovation fund, which supports different innovation developments, programmes and other investments.

Evaluation and performance

Regarding quality assurance mechanisms, several monitoring and evaluation measures have been put in place to ensure an accurate and professional assessment of the programme. Furthermore, a nationwide research survey was conducted with 500 Hungarian SMEs in 2005 to analyse the "Innovation Affinity of SMEs". The survey results showed that the majority of Hungarian SMEs are generally not aware of the potential and benefits of using IPR: 6 out of 10 enterprises would welcome more information and education materials on IPR and its usage in a business environment; 4 out of 10 would be interested in attending relevant trainings and/or events.

Contractual partners and the performance of locally offered services are also reviewed regularly; a specific contribution to the quality assurance of VIVACE arises from the fact that contracts cannot be renewed without fulfilling certain requirements. As regards the performance of the service, the following figures have been provided:

- 3,237 VIVACE users[31] were counted in 2006 (2005: 2,642) which asked for:
  - general information on IPR: 1,947 (2006); 1,388 (2005)
  - assistance in trade mark questions: 906 (2006); 524 (2005)
  - help with patent related issues: 162 (2006); 340 (2005)
  - support with utility models, designs, copyrights etc: 222 (2006); 390 (2005)
- 1 introduction campaign from September 2004 to February 2005: every two weeks an event promoting VIVACE nationwide;
- IPR education: One 60 hours module for local advisers (25 persons attended in 2004 and 2005);
- 105 events organised in 2005, which attracted around 4,000 SMEs;
- 150 newspaper articles, several TV reports, interviews, appearance on conferences.

Performance indicators measuring the level of diffusion of information to the target group reported are:

- Hit rates: In 2006, VIVACE's website had a hit rate of around 24.000;
- Publications: 10 publications with different circulation volumes; around 500 copies of the "Iparjogvédelmi szemle" (Industrial Property Rights Protection and Copyright Review) and 500 copies of the "Szabadalmi Közlöny" (Patent and Trademark Bulletin) were handed out to the public;
- Number of visitors in PATLIB-libraries in 2005: 3,977 personal visits, 8,543 documents used and 4,632 online visits.

As experts state, there has been a decreasing tendency in Hungarian IP registrations over the past years. VIVACE is seen as one of the main programmes to reverse this trend. In 2005, around 1,126 patents have been granted. In addition, 3,475 other IP registrable rights (trade marks, designs, etc) were registered during the same time. Compared to 2005, a slight increase in IP registrations has been observed in the first half of 2006.

10.2 The user's view

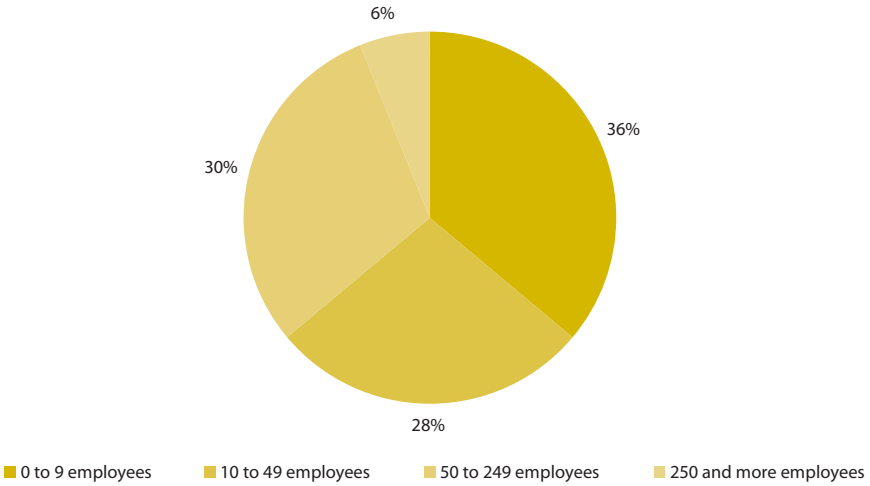
In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

50 companies were surveyed about their experiences with the VIVACE programme. The distribution of the user sample confirmed VIVACE's particular focus on SMEs: 36 % of the companies employ not more than 9 persons, 28 % have 10 to 49

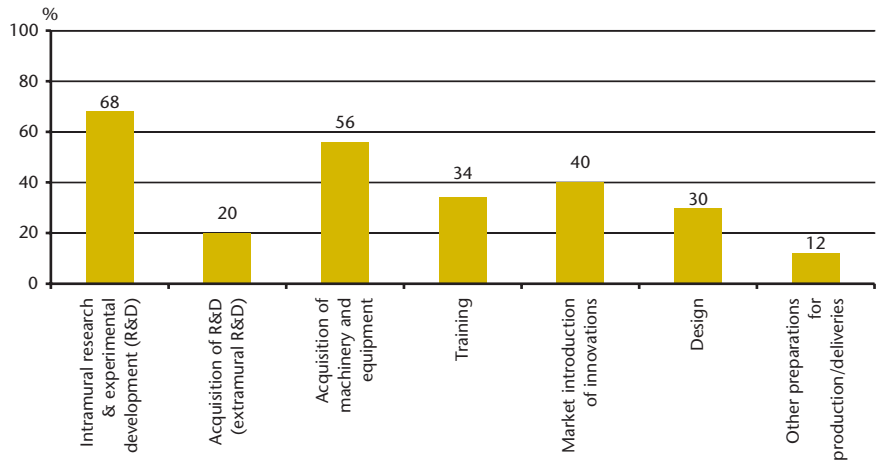
[31] Total number consisting of users of services provided by the Hungarian Patent Office and the Hungarian Chamber of Commerce; Services were offered by phone, fax and e-mail and for personal consultations.

Graph 108 Company size distribution in interview sample, 2005, percentage of respondents



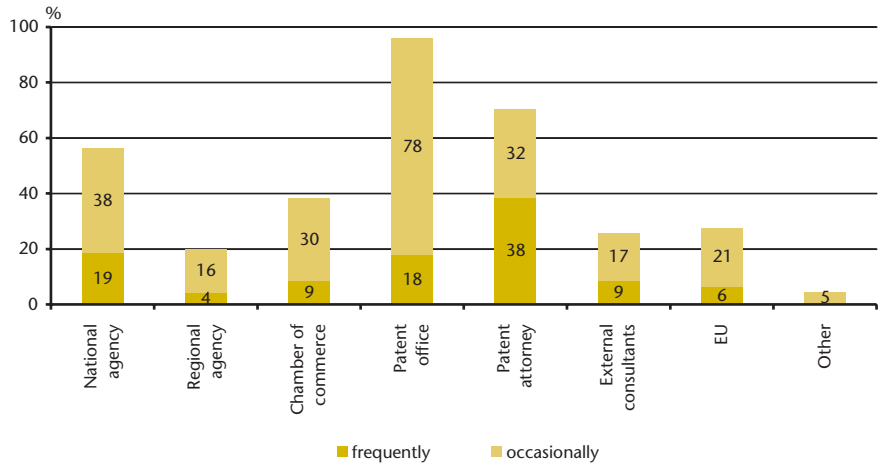
Source: User Survey, n = 50

Graph 109 Innovation activities in interview sample, 2005, percentage of respondents



*) multiple answers allowed, Source: User Survey, n = 50

Graph 110 Usage of different service providers by SMEs, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

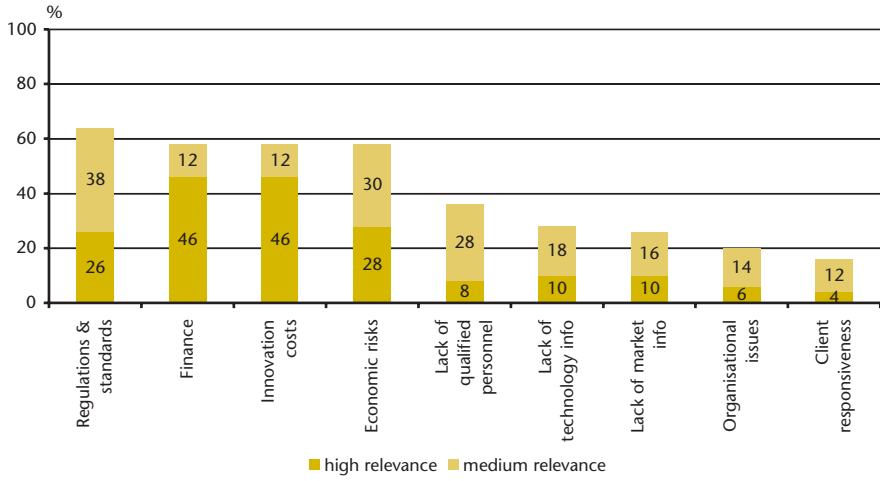
employees and 30 % are larger companies with up to 249 employees (see Graph 108).

As expected, users and/or participants of the VIVACE programme performed a considerable number of innovative activities. Between 2003 and 2005, around 70 % introduced product innovations (new or significantly improved products), 50 % were able to introduce process innovations in the same time period. As concerns R&D, almost 68 % conducted intramural R&D. Interestingly, 56 % of the users were engaged in the acquisitions of machinery and equipment (see Graph 109).

VIVACE users made most use of the service offered by the HPO: 18 % frequently, 78 % at least on an occasional basis (see Graph 110). The reason for the high usage of patent attorneys may be a large share of users representing long-term customers of the HPO which file for patents more often than others do.

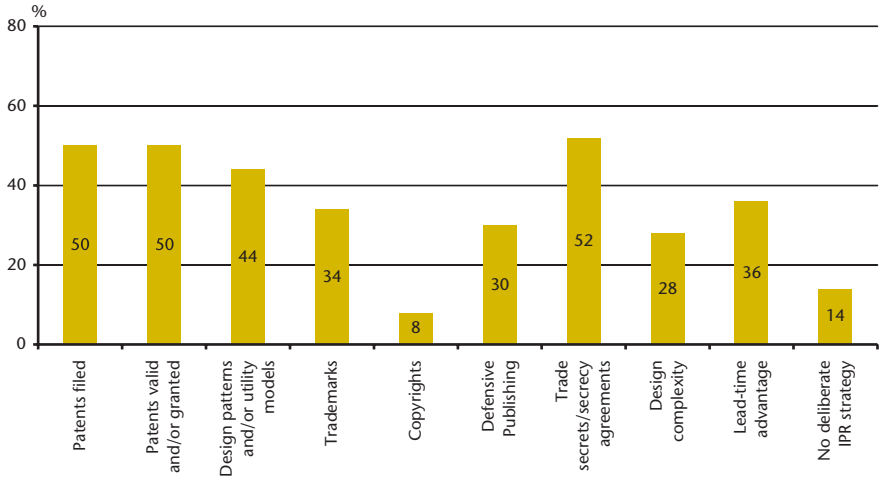
Regarding hampering factors for innovation activities, companies complained mostly about high innovation costs (for 46 % of high and for further 12 % of medium relevance), the lack of appropriate sources of finance (of high relevance for 46 %, of medium relevance for 12 %) and economic risks (for 28 % of high, for 30 % of medium relevance; see Graph 111). Very unusual in this context: Regulations and standards are reported to be obstacles, too. Client responsiveness and organisational issues are reported to be of a less critical nature.

Graph 111 Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 112 IP protection methods employed by service users, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

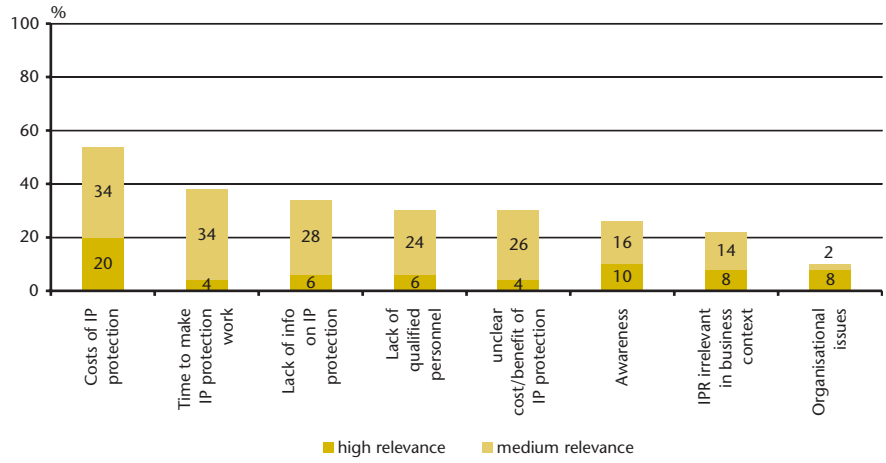
As can be seen from Graph 112, VIVACE users employed a high number of formal IPR protection methods between 2003 and 2005. Regarding patents, half of the users filed for a patent or had a patent granted or valid. This large share seems not surprising considering the fact that funding for patent applications, especially for international ones, has been made available under the umbrella of the VIVACE programme. In addition, 44 % of the users stated that they used design patterns and/or utility models to protect their IP; 34 % registered trade marks. A considerable high number of users also employed informal protection methods, i.e. 52 % relied on trade secrets, 36 % tried to maintain a lead time advantage over competitors (see Graph 113).

For VIVACE users, the costs of IP protection (for 20 % of high and for another 34 % of medium relevance) are the main barrier perceived for using IPR. External barriers towards the availability of support services are not considered to be a major obstacle. However, the lack of information, quality and accessibility of external services has at least medium relevance for around 20 % of the companies surveyed.

User reach-out and satisfaction levels

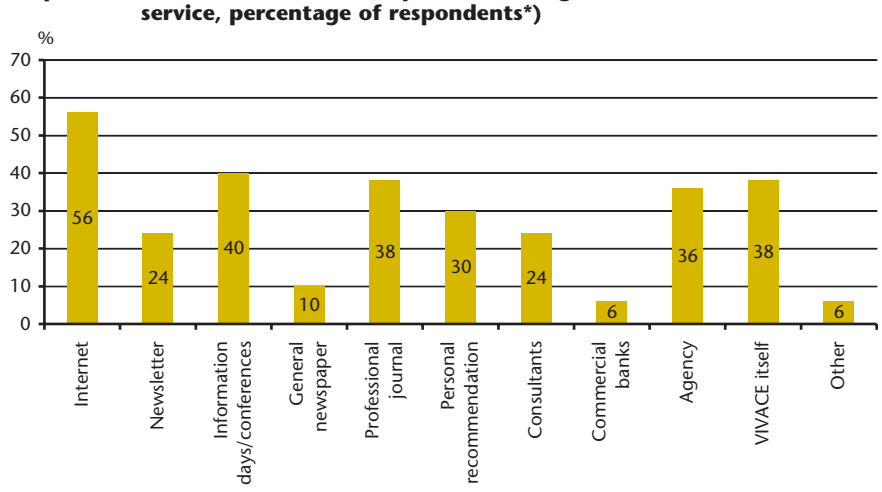
VIVACE used various information channels and sources to spread the information about the service offerings, including information offered on the internet (56 %) and/or presented at conferences (40 %). A considerable high share of users heard about the service also through the providing institution itself (38 %). Furthermore, and a little bit

Graph 113 (Internal) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 114 Information channels, by which users got to know about the service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

surprising, some companies got to know about the service through classical media, i.e. professional journals (38 %) and newspapers (10 %) (see Graph 114).

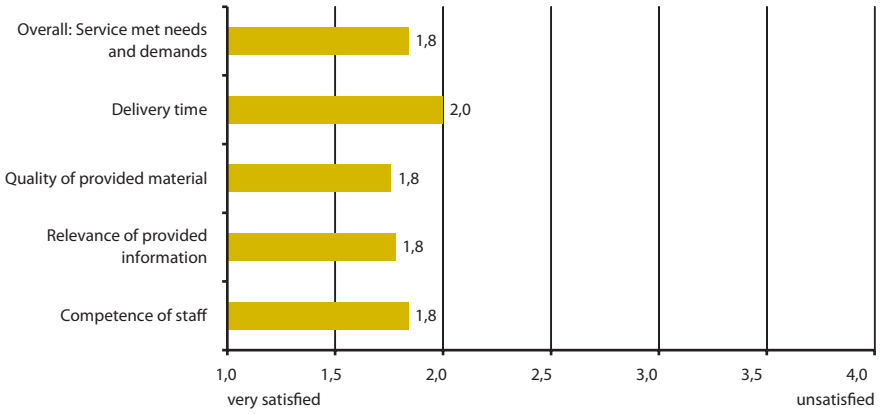
Overall speaking, VIVACE users were generally satisfied with the key aspects of the service which were graded with "2.0" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied) (see Graph 115). Furthermore, around 80 % consider the extent of the service offerings to be adequate; 62 % believe the administrative effort to use the service is quite low. On the other hand, 24 % think it is too high. Spatial distance does not seem to be a problem. For 64 % of the users, the benefits of using this service are adequate to the efforts; 22 % state that the benefits clearly outweigh the efforts.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

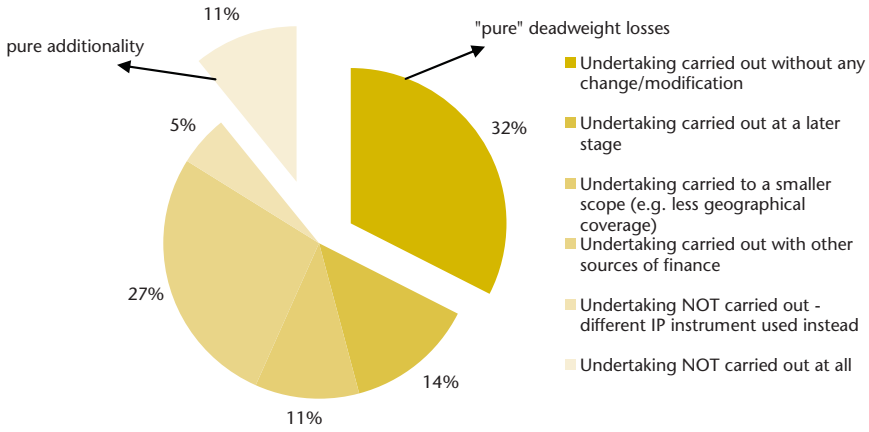
The VIVACE programme has achieved rather low additionality effects (see Graph 116): 11 % of the undertakings would not have been carried out at all in the absence of support from the service. In addition, 27 % of the projects would have been carried out but with support from another financial source. On the other side,

Graph 115 Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



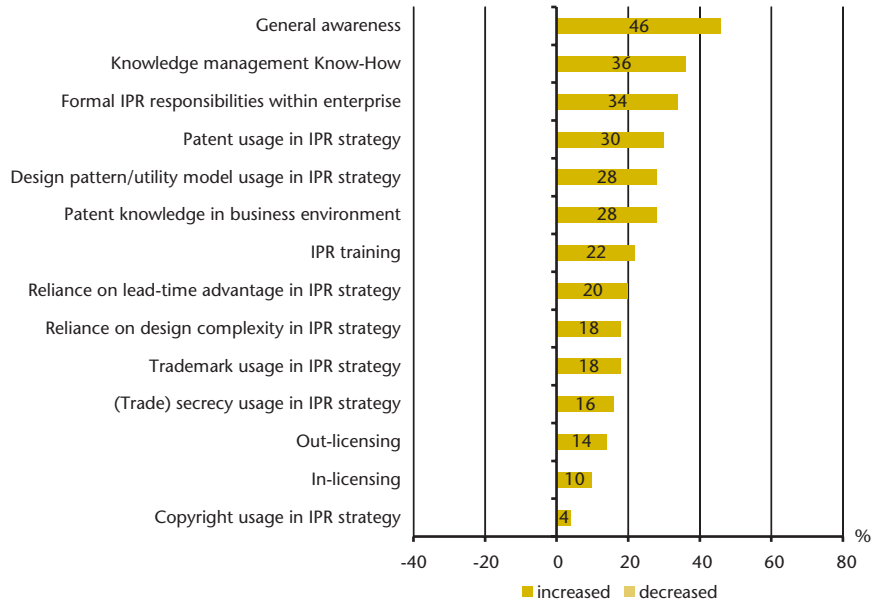
Source: User Survey, n = 50

Graph 116 Additionality of the financial subsidy, percentage of respondents



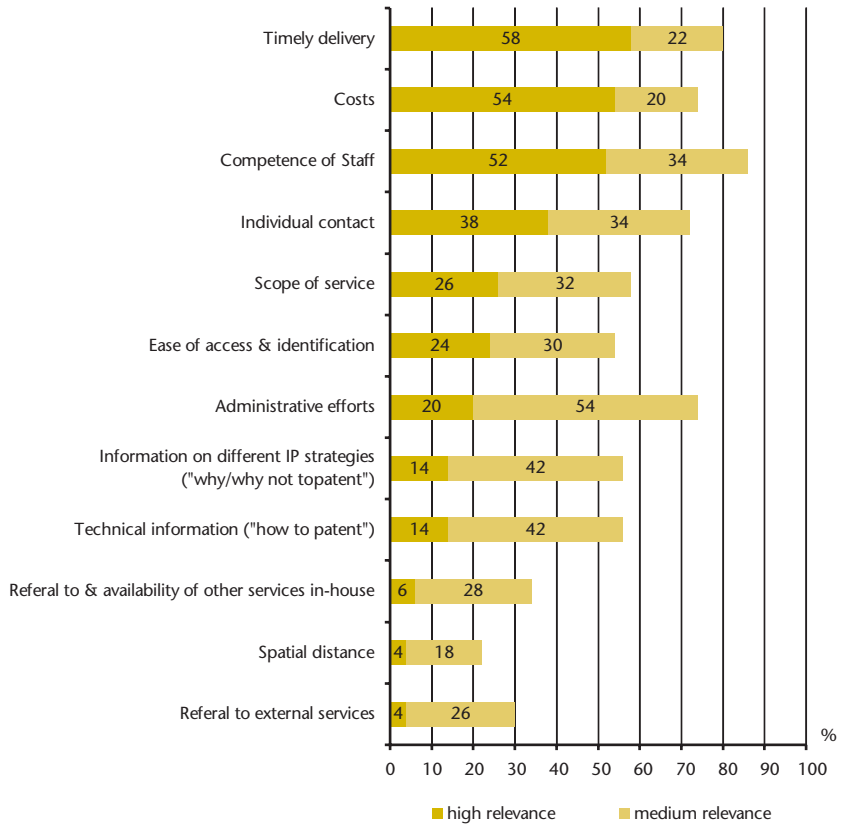
Source: User Survey, n = 50

Graph 117 Behavioural additionality of the VIVACE Programme, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 118 Key quality factors for a service such as the VIVACE Programme, percentage of respondents



*) multiple answers allowed. Source: User Survey, n = 50

32 % would have carried out their patenting project, without any change in the project settings.

Keeping in mind the major aim of the programme, to create general awareness for the importance of IPR, one may say that VIVACE did quite well to achieve this aim. The most striking changes in the attitudes towards the protection of IPR concern general awareness issues (increased for 46 %) and knowledge management (increased for 36 %). In addition, a review of the formal IPR responsibilities within a company has been carried out by 34 % of the surveyed users (see Graph 117).

Users of the VIVACE programme underline the importance of the competence of staff (for 52 % of high, for 34 % of medium relevance), timely delivery (high relevance for 58 %, medium for 22 %) and costs (for 54 % of high, and for 20 % of medium relevance) for a service similar to VIVACE (see Graph 118). Individual contact to service experts and (low) administrative efforts also play an important role for such a service. Low relevance rates are given, surprisingly for a networked programme such as VIVACE, to internal and external referral possibilities and spatial distance.

10.3 Elements of good practice

The VIVACE programme acts as an umbrella scheme and offers a variety of services and activities towards different IPR issues. The programme's objective is to increase the competitiveness of Hungarian SMEs on a national and international level. The VIVACE programme shows the following elements of good practice:

- Integrated package covering IP awareness raising activities, economic incentives, educational measures and economic incentives;
- Expert staff;
- Geographic distribution: Regional nodes provide basis information and refer for more complicated services to the central institution (the HPO) which has pooled its programme expertise nationally at a headquarter location;
- Strong networking and partnering activities with other actors active in innovation support;
- Careful planning, business orientation and high level of standardisation of the programme;
- Complementary, non-IPR service packages are provided by the HPO's partnering institutions, i.e. the Chamber of Commerce;
- Strong reputation of the service offerings in Hungary;
- Comparatively little historic burdens to cope with. This implies that there are plenty of opportunities to do things right from the start, without having to worry too much about old structures.

Challenges remain with regard to

- the sustainable endowment with resources;
- the integration into the overall national innovation system;
- The varying degree of commitment of the involved contracted partners for delivering the service.

The future development of the programme is uncertain. As the programme is due to end in December 2007, successor programmes are needed to take over where VIVACE has started. According to expert opinions, follow-up programmes may face an unpredictable future because of open questions concerning adequate funding. Furthermore, some experts noted that VIVACE is probably not integrated enough into the national innovation system and overall innovation strategy. Interesting in this context is the observation made by experts that there can be a threat of establishing parallel networks due to the lack of an overall integrated governmental innovation policy.

11. IPR Services of the Technology Watch Center CVT

Country:		Luxembourg
Original title:		Centre de Veille Technologique (CVT) – Centre de Recherche Public Henri Tudor
Target group:		All companies
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	x	Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

11.1 The Technology Watch Centre CVT in a nutshell

Background and Resources

The case study on the Technology Watch Centre (Centre de Veille Technologique; CVT) of the Research Centre for Public Research (Centre de Recherche Publique; CRP) Henri Tudor has been selected in the scope of the underlying benchmarking study to illustrate what can work in very small countries in terms of IPR support for SMEs. CVT has a number of so-called "projects" which adress the issue of IPR usage by SMEs, including the creation of a dedicated publication (LIIP – Linking Innovation and Industrial Property), the establishment of an e-learning course or the provision of counselling services on IPR matters. The CVT IPR services are embedded in a portfolio of other services which govern the subjects of "standards and regulations" and "technology roadmapping/forecasting". It is aimed to create synergy effects between these three fields which can be considered to be closely related to each other. International cooperation is the key issue for service providers such as the CVT in very small countries – both for the design and creation of support measures as well as for the reach-out to an adequate number of SMEs.

As one of the departments of CRP Henri Tudor, the objectives of the Technology Watch Center (CVT) are to increase the awareness of companies to the growing importance of intellectual property information and to assist them in setting up their information management processes. The CVT assists companies in searching, gathering, treating, analysing and managing scientific, technical and technically-orientied business information.

The initial goal of the CVT was to support the activities of the intellectual property department of the Ministry of Economics and Foreign Trade by assuring the diffusion of patent information. Then, new competencies in management of technology watch and competitive / business / technical intelligence processes were created and its mission grew up to:

- the assistance in setting up of technology watch and competitive intelligence practices in companies;
- the development and marketing of technology watch and competitive intelligence services;

- the increase of awareness for the growing importance of competitive intelligence;
- the creation of new competencies in the fields of information management.

The phases of IPR usage targeted are research on innovative projects with a relation to IPR issues and the process of development/registration; the utilisation phase or the subject of IPR acquisition are not targeted. In terms of the degree of legal formality, ample of space is given to various forms of IP protection – patents and formal IPR are treated only as a part of a spectrum on how to appropriate the IP of a company. This can certainly be considered an element of good practice.

The service is generally open to companies of all sizes and to public institutions such as, for example, the Luxembourg patent office. Notwithstanding this, specific "projects" are carried out to support explicitly SMEs in the field of IPR. The CVT subsumes under the term "projects" a range of activities dedicated to SMEs, such as the creation of case studies, pro-active contacting of companies, the creation of the LIIP publication or the design of the e-learning IPR course DIPS (*Distance learning applied to enhance the introduction of IP into management Strategies of SMEs*; see below). No provisions are in place for certain technology fields or industries.

Modes of operation

The history of the service dates back to the mid 1990s. A feasibility study was conducted in 1994/1995 where user needs were assessed. The CVT started its activities in 1994 as a pilot project under the initiative of the Intellectual Property Division of the Ministry of Economics and in close collaboration with the European Patent Office. Before 1994, no such service was provided in Luxembourg. The pilot phase (and thus the preparation time) amounted to approximately two years – eventually, in 1996, the Public Research Centre Henri Tudor established the CVT as one of its departments.

The CVT acts as a service unit within the CRP – other units of the CRP may draw on the services provided by the CVT and have, to this end, developed work packages that describe the involvement of the CVT. It is important to note, though, that each department forms its own, to an extent, self-sufficient business unit; for any of the CRP departments, the CVT looks very much like an external services provider – services of the CVT can be used, but there is no obligation to revert to CVT.

The CVT is operated by a staff of 8 FTEs. Most of them have a technical background, primarily in the fields of chemistry and in electronics/IT-related fields, and possess relevant work experience in the field of IPR.

The CVT offers its services on a non-profit, but cost-covering basis (i.e. expenses incurred must be covered by revenue received).

The following services are offered by the CVT:

- Patent documentation and information services: This service comprises database searches on patents and trademarks (i.e. novelty searches, legal status searches);
- Customized in-depth consulting on strategic IPR issues: Consulting services cover counselling in technonlogical intelligence, competitive intelligence, business intelligence and information analysis (the latter refering mainly to bibliometric analyses);
- IP assistance for business start-ups: This type of services addresses specifically the needs of start-up enterprises (e.g., consulting in IP-strategies, general support for business planning);
- Technology Watch services: Technology watch services are a type of service where so-called "competitive intelligence" is gathered; such information includes data derived from ex-ante analyses of future trends in technological fields or in the domain of technical regulations and standards;

- Creation of publications: The LIIP guide (LIIP – Linking Innovation and Industrial Property) was published with the aim to give SMEs "10 pragmatic recommendations for a better integration of IP in your business". The 54 page guide offers sections on the definition of IP, brief descriptions of the different forms of IPR, guidelines on which IP protection instrument to chose under certain circumstances, tips on how to enforce IP rights and a variety of annexes with contact details of international IPR-related institutions. Its main target group are IPR beginners. A number of real-life case studies on how IPR and IP management is used by SMEs and a checklist/questionnaire with multiple choice questions intended to measure the level of IPR awareness round off the content of the printed brochure. A CD has been developed to accompany the LIIP guide (called "IP Multimedia Toolbox CD") – it presents the information of the LIIP guide in a more interactice manner. The CD also offers additional information on IPR protection and helps with using the IPR system in several European countries. The LIIP guide is an outcome of a joint cooperative project (involving partners, mostly patent offices, from Ireland, Spain, Luxembourg, Italy and Greece, with the CVT being the project leader) co-funded in the course of the 5th European Framework Programme of the European Community as part of the Innovation and SMEs programme;
- Trainings – the CVT is active in the field of IPR-related training and has offerings covering the following subject areas:
    - Workshops on searching and analysing patent-information on the internet and IT-patent searching strategies;
    - IP-awareness workshops for secondary schools (the target group being 15 to 18 year old students);
    - Sporadic awareness raising events for the general public (e.g., in the course of the Tour de France – which also passed through Luxembourg – it was decided to organise an exhibition on the technology and history of bicycles, out- and underlining also IPR aspects applicable to this product group);
    - DIPS (*Distance learning applied to enhance the introduction of IP into management Strategies of SMEs*): an e-learning course in IP management with the aim to provide SME managers with basics on how to introduce IP into a business strategy. The course lasts for 40 hours and is developed in the framework of a European Leonardo project; as of the writing of the report, the DIPS project was still in the test phase and thus not fully operational.[32]

The CVT offers its services on a stand-by basis as well as pro-actively. Especially in order to increase awareness, CVT staff regularly looks for new potential customers and makes visits to companies on-site. Search services are an example of a service offered on a stand by basis. Regular search requests are paid on a "per request" basis, applying a standardised price. More customer-tailored services (i.e. the consulting services) are cost by using hourly rates.

Against the background of the small country size, cooperative work (especially internationally) is seen, according to experts, as essential for the success of service such as the CVT. To this end, the most important strategic partners of the CVT is foremost the Ministry of Economics and Foreign Trade with their Intellectual Property Department (the Luxembourg Patent Office): The CVT has taken, under contractual obligations, over several tasks of the Luxembourg Patent Office (namely, patent information search services and business servicing). Other cooperation partners are the Office Luxembourgeois d'Accréditation et de Surveillance (OLAS), the European Patent Office (EPO), and – sporadically – also the World Intellectual Property Organisation (WIPO) (the databases of which are used by the CVT).

[32] http://www.dips-project.org

Evaluation and Performance

Regular interim and ex-post evaluations are carried out to manage and secure the quality of the programme. Annual financial audits are carried out by external experts. In addition, as part of the measurements of the internal process performance, user surveys are executed to evaluate the satisfaction of the customers. an internal intranet/CRM system is set up to track CVT activities and collect monitoring data (e.g. the number of written search reports etc.). The CVT is an ISO 9001 certified institution.

The user group consists of enterprises of all sizes, sectors and industries, research centers, patent attorneys, private inventors as well as public and private organizations representing the interests of different enterprises. The following data was provided concerning customer reach out (reference period: 2005):

- CVT has produced 180 search reports, covering enquiries of organisations concerning patenting/technology information (105 reports) and issues concerning regulations and standards (74 reports).
- The CVT has, furthermore, contacted 50 companies proactively with the aim to increase their awareness on IPR issues; the aim is to have a fifth of the contacted companies as regular customers of the CVT.

Workshops which dealt with how to use patent database information have been very popular around 2000/2001. The demand has since then dropped considerably; the CVT assumes that the majority of the companies in Luxembourg which might be interested in such "how to use" patent information offerings has been reached. This illustrates that finding an adequate number of customers to cover the costs for IPR services of a larger scope within a very small country constitutes a challenge. On the other hand, however, the CVT also believes – with respect to their other offerings e.g. in the field of IPR consulting – that it has a rather low profile among SMEs which need to be adressed by respective marketing activities. International cooperation is seen as the key solution to this problem by the experts interviewed.

11.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

20 users were identified and asked about their experience with IPR services offered by the CVT. Furthermore, as the CVT offers various support services targeting different interests, different user groups were included in the sample. For the analysis in this section, the focus is put on a group of 12 users out of the 20[33], who took advantage of special in-depth consulting services regarding IPR issues. Considering the small sample size, great care has to be taken when interpreting the results.

Out of the 12 IPR consulting users, half employed not more than 49 employees between 2003 and 2005. During the same time period, 8 service users introduced new or significantly improved products onto the market, 6 came up with process innovations. Regarding innovation activities, 7 conducted intramural R&D, and 50 % were engaged in the acquisition of machinery and equipment as well as training activities.

Between 2003 and 2005, 6 out of 12 IPR consulting users made occasional use of national agencies, 5 took at most occasional advantage of the chamber of commerce, and 4 of external consultants (see Graph 119). Patent attorneys were

[33] Due to reasons of statistical significance, survey results from the remaining 8 CVT sub-service users are not analysed further.

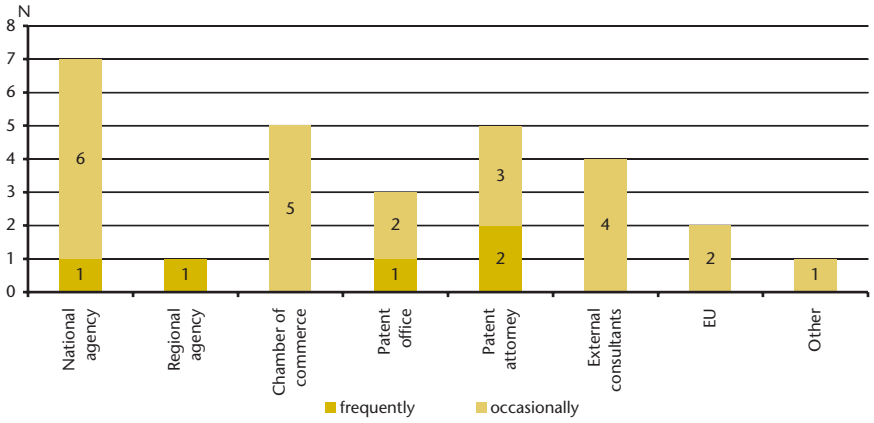
considered to be important too: 2 service users took frequent advantage of the service offerings of patent attorneys, 3 did so on an occasional basis.

Some companies experienced hampering factors for innovation during 2003 to 2005 (see Graph 120): the IPR consulting users complained mostly about economic risks, high innovation costs and lack of financial sources as well as qualified personnel (for 4 users of high relevance, respectively).

Regarding the methods of IPR protection, 6 out of the 12 IPR consulting users stated that they used trade secrets and/or secrecy agreements as well as registered trademarks as the most important IP protection method (see Graph 121). In addition, 5 of the service users filed for a patent or had a patent granted or valid between 2003 and 2005.

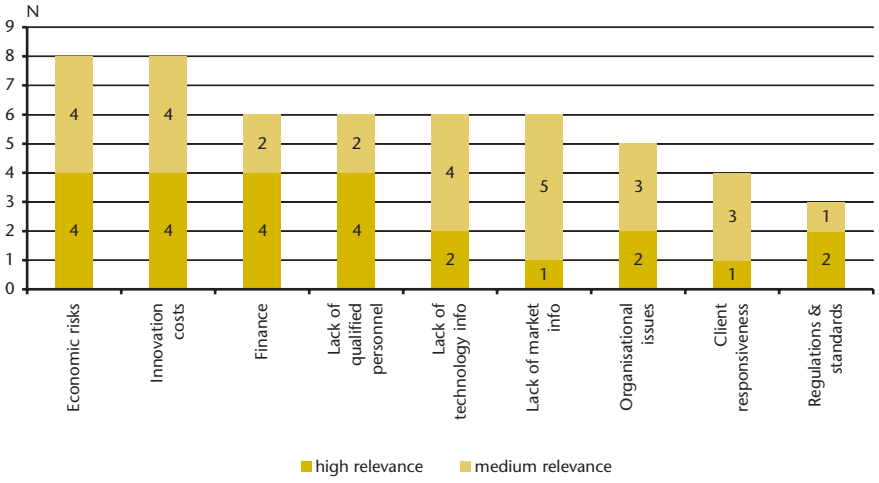
For the 12 IPR consulting users, the cost of implementing IP protection strategies represents the main internal barrier for using IPR methods (see Graph 122). In addition, some service users considered the lack of qualified personnel and the time to make IP protection work as relevant external barriers. These findings are very much inline with those from other services analysed. External barriers are perceived to be obstacles of, by comparison, low relevance: 4 out of 12 service users considered the lack of information on available services relevant as an external barrier.

Graph 119 Usage of different service providers by SMEs, number of respondents *), IPR consulting service



*) multiple answers allowed. Source: User Survey, n = 12

Graph 120 Hampering factors for innovations, 2003 to 2005, number of respondents *), IPR consulting Service



*) multiple answers allowed. Source: User Survey, n = 12

User reach-out and satisfaction levels

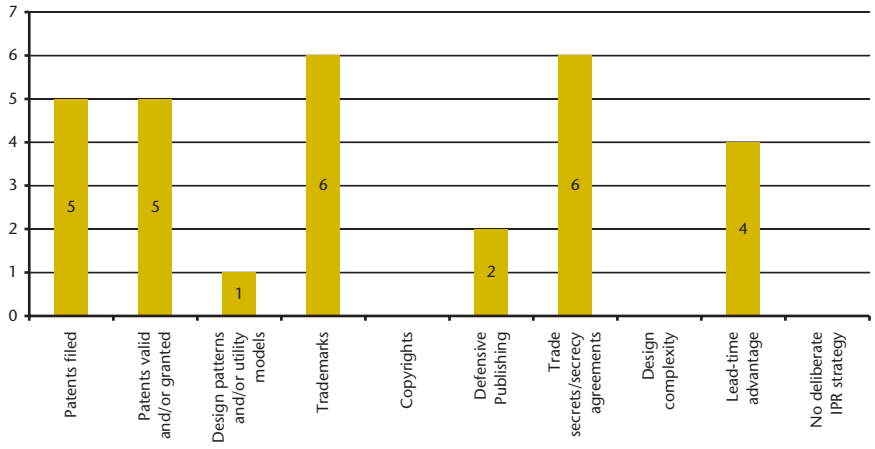
The 12 IPR consulting users received information about the service mostly through personal recommendations, the internet and information days (i.e. conferences etc.). Agencies were mentioned as information sources by 4 service users. 3 out 12 users heard about the service by the CVT itself. This share is surprisingly low and is possibly due to the before-mentioned improvement area in the domain of marketing activities.

Overall, 8 out of 12 IPR consulting users considered the extent of the service offerings to be adequate. In addition, 6 stated that the benefits are also adequate to the efforts; 5 think that the benefits clearly outweigh the efforts. As can be seen from Graph 123, all service users were, on average, quite satisfied with the service.

Additionality of the service

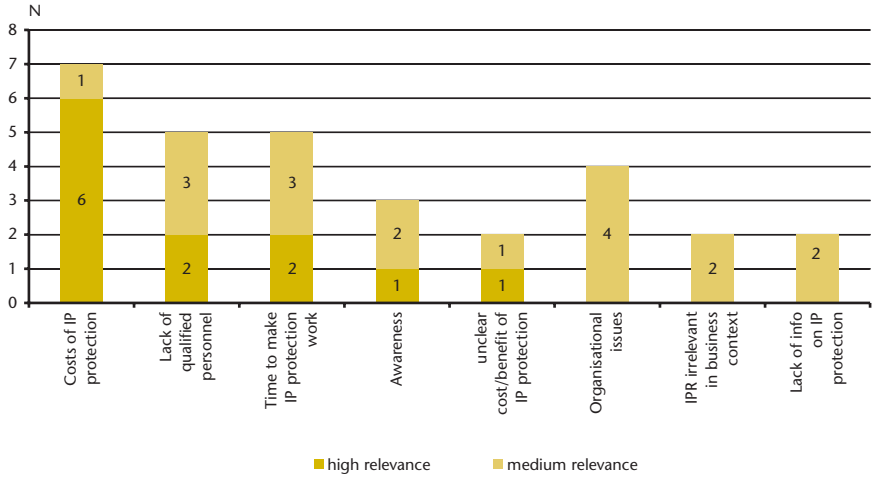
Due to the overall focus on awareness raising of the CVT, it seems not surprising that the most significant changes for the 12 IPR consulting service users took place in general IPR awareness, knowledge management know-how and patent knowledge in business environment, which increased for 7 and 6 of the service users, respectively (see Graph 124). The high number of behavioural aspects which changed due to using this service can also be attributed to the overall open approach towards all means to protect resp. appropriate IP.

Graph 121 CVT Henri Tudor–IP protection methods employed by service users, 2003 to 2005, number of respondents *), IPR Consulting Service



*) multiple answers allowed. Source: User Survey, n = 12

Graph 122 (Internal) barriers to using IP protection mechanisms, number of respondents*), IPR Consulting Service



*) multiple answers allowed. Source: User Survey, n = 12

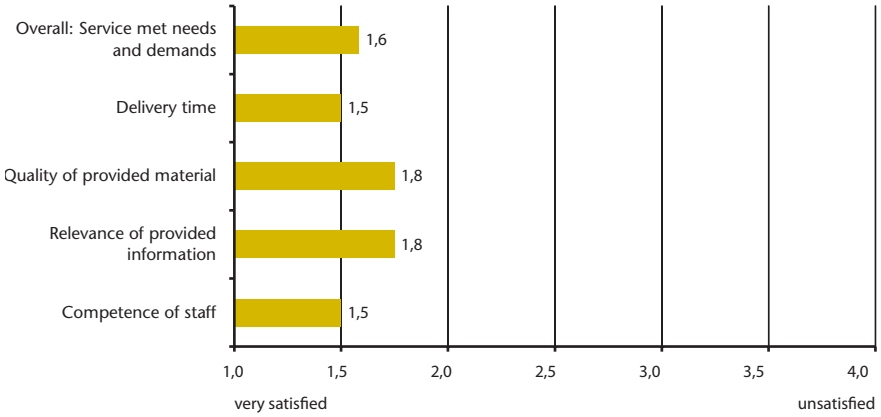
All IPR consulting service users considered the competence of the staff involved in a service similar to the ones offered by CVT as very important (see Graph 125). In addition, timely delivery and the ease of access and identification were also felt to be key factors. Spatial distance and the referral to external services turned out not to be important for such a service, in the view of the users.

11.3 Elements of good practice

The CVT offers an integrated package of IPR services which exhibit as a whole the following success factors (resp. elements of good practice):

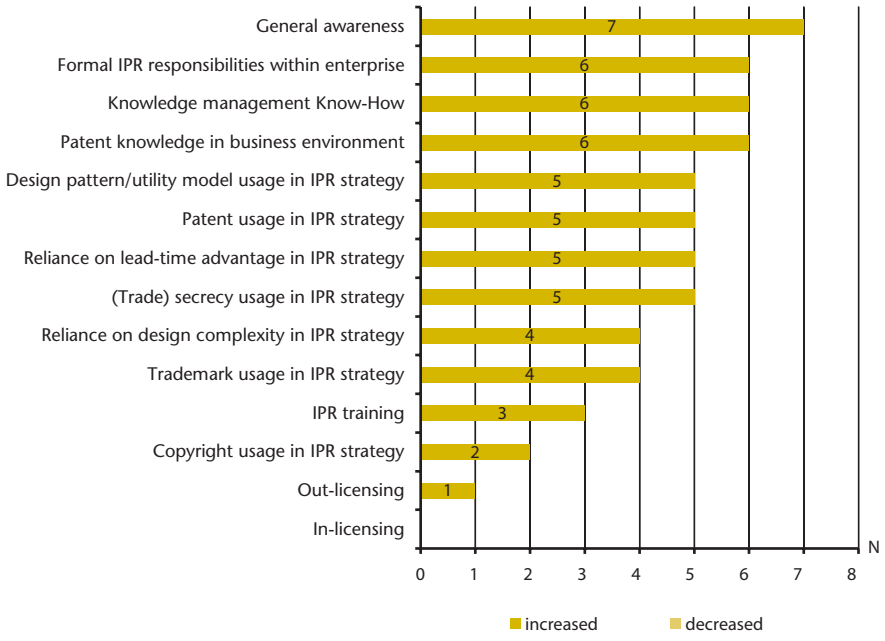
- Integrative approach;
- Competence of staff with detailed knowledge on a rather large range of aspects regarding IPR;

Graph 123 Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents, IPR Consulting Service



*) multiple answers allowed. Source: User Survey, n = 12

Graph 124 Behavioural additionality of the IPR Consulting Service, number of respondents*)



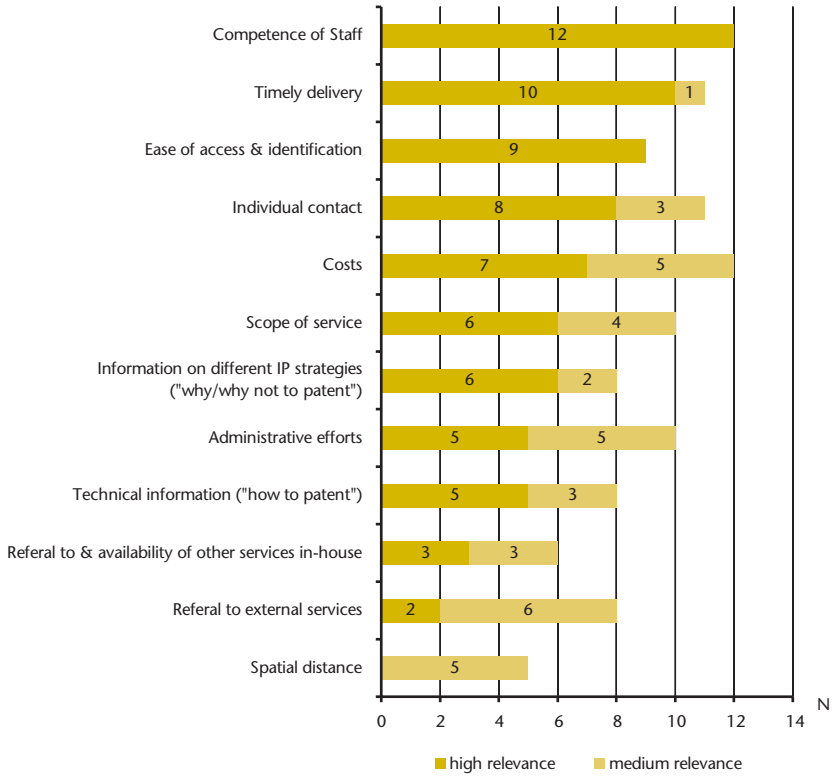
*) multiple answers allowed. Source: User Survey, n = 12

- not actually focussed on patents, but rather broad approach towards IP protection;
- International cooperation which is essential for a service of a rather large scope and operating in a small country, and which has led in some parts to the successful projects (e.g. the LIIP guide).

Challenges remain within the following areas:

- Reach out to a large enough number of customers to cover operational costs;
- International cooperation – This subject will stay on the agenda for a number of projects other than LIIP and also with respect to increasing user reach out, notably within the so-called Greater Region (covering the neighbouring areas in Germany, France and Belgium).

Graph 125 Key quality factors for a service such as the IPR Consulting Service, number of respondents*)



*) multiple answers allowed. Source: User Survey, n = 12

12. Foundation for Finnish Inventions (FIN)

Country:		Finland
Original title:		Keksintösäätiö
Target group:		SMEs
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
	X	Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

12.1 Foundation for Finnish Inventions in a nutshell

The main objective of the Foundation for Finnish Inventions is to foster Finnish inventions by supporting private individuals and small entrepreneurs residing in Finland to develop and exploit invention proposals and helping them with the utilisation of the created inventions. Secondary goals are set i.e. to increase employment, exports, and overall innovativeness and competitiveness of Finnish companies at home and internationally. The service has been chosen as a case study in the course of the underlying benchmarking exercise as it is an example of an integrated service with well endowed resources resulting in rather high outcomes, with a well established governance structure and with some unique service elements (e.g., the prototype workshop).

The Foundation acts as a "One-Stop-Shop" in IPR matters as it offers a range of IPR-related services: evaluation of new inventions, guidance, support in issues related to protecting ones' inventions, prototype workshops, legal counselling or help with marketing. Almost all services offered by the Foundation are somehow related to IPR. Expertise is pooled at the headquarters in Espoo, but there are regional outlets in important organisations such as universities and economic development centres.

The Foundation services cover a wide range of registrable IPR (patents, trademarks, designs) and non-registrable IPR (e.g., copyrights). Providing information on informal protection methods is not explicitly within the scope of the service portfolio of the Foundation but depending on the expert giving advice to the customer, informal practises such as trade secrets can also be subject of discussion and consultation. According to the service providers, however, customers are usually more interested in receiving information about formal protection methods for their undertakings.

The Foundation activities are not tailored to specific technology fields or industries. The organisation, however, has only SMEs and private inventors as customers. The services are offered nationwide and cover all phases of IPR and IP protection development and usage.

Background and Resources

The Foundation for Finnish Inventions was established in the early 1970s by a private initiative. While the overall goal of the service stayed the same, the scope of the activities has constantly increased since then. A further impetus to growth was given in the 1990s, when the headquarters were moved into a technology centre, namely Innopol (Espoo Technology Centre). The nearby University of

Technology is considered to be an important additional asset to the operational environment.

The Foundation is well endowed with qualified personnel and monetary funds, more so than most of the other services analysed in the course of the benchmarking study. The Foundation draws on a staff of about 24 experts in different business and technology fields at the head office and has a additional workforce of 29 "innovation representatives" operating regionally; 14 representatives are based at almost every Finnish university, 15 are located at the so-called T&E Centres (Employment & Economic development centres) across the country. The innovation representatives are funded by the Foundation, National Board of Patents and Registration of Finland and by other, often regional, organisations (e.g., a university or a T&E Centre).

The T&E Centres operate under the control of the Ministry of Trade and Industry, but two other ministries (the Ministry of Labour, and the Ministry of Agriculture and Forestry) contribute to these centres and can be considered important stakeholders. The Centres act as public, regional organisations providing advisory and development services for businesses and individuals. It has to be noted tough, that some of these representatives are working only part-time for the Foundation.

Around 50 % of the head office staff has been working for more than five years at the Foundation; around 60 % are IPR experts who hold university degrees. The average age in the head office amounts to 43.7 years. Besides, every representative operating locally holds either a university or polytechnic degree.

The service has an annual budget of € 6.1 mio, of which € 2.1 mio are available for direct support and funding activities (e.g. to subsidise R&D costs); the remaining € 4 mio cover indirect support to the inventors (which includes the personnel costs and out of pocket costs for advice, evaluation and marketing of the inventions) and administration including maintenance of database system and IT infrastructure. Though having started out as a private offering, the Foundation can be nowadays considered a public service as it is almost entirely publicly funded by the Ministry of Trade and Industry.

Modes of operation

In order to achieve its goals, the Foundation for Finnish Inventions tries to serve as a link between inventors, innovators, consumers, businesses and industry in Finland or other parts of the world on all matters related to setting up of production facilities, licensing activities or any other means of exploiting an invention. In this context, the following service elements can be distinguished:

- *Advice and evaluation concerning* inventions (an important service pillar especially with respect to inventions of private individuals and micro enterprises)
- *Financial support* (risk financing, grants and loans).
- *Support by pro-actively marketing and commercialising inventions:* The Foundation directly contacts companies by e-mail, by phone or personally and offers inventions they have previously funded to the contacted firms for commercialization. In addition, the Foundation participates in fairs, often in cooperation with the T&E Centres and the National Board of Patents and Registration of Finland. The service staff thus proactively seeks to search for Finnish and/or or foreign partners for their customers ("matchmaking function").
- *Expert advice through cooperation with other IPR support giving institutions:* Patent attorneys are sometimes used as experts and give, for example, lectures in seminars organised by the Foundation. The Foundation also helps inventors to gain funding from other sources, if needed (referral and advisory activities).

- *Dissemination of information on inventions and license opportunities:* Information on inventions and innovations is actively disseminated to the media, in seminars and by participating in relevant trade fairs. The Foundation also has its own "marketplace" in the internet (www.inventionmarket.fi). There, new inventions and business ideas are presented to interested parties for commercialization. All inventions are financed by the Foundation for Finnish Inventions. The ideas are the property of the inventors and inventing companies, still, and are only marketed with the support or funding from the Foundation.
- *Legal and other assistance* in licensing negotiations and preparatory agreements;
- *Organisation of (awareness raising) campaigns* (for example "Keksi ja Tee", which selects one region in Finland in a given period of time where it tries to sell/license inventions specifically to companies in the region);
- The *"Venture Cup"* is a business plan competition that helps students, researchers and others to take their business idea from concept to actual start-up. The Venture Cup motivates participants to develop their ideas by hands-on coaching and feedback as well as through inspirational events and workshops. Foundations representatives act as experts in local evaluation juries;
- The operation of a *prototype workshop*, a combined laboratory facility for supported inventors.

In the following, some of the different elements of the service shall be described in more detail:

The prototype workshop

This very unique service element can be best described as a laboratory facility for inventors. At the foundation's premises at Innopoli, inventors can draw on expert services to produce observation models and develop, build and test prototypes. This works in such a way that the experts build the prototype on behalf of the SMEs – the SMEs themselves do not have direct access to lab facilities. The designs and blueprints of the prototype are jointly developed by Foundation personnel and the inventors in a confidential manner. However, it is also possible to test and commission the prototypes with support from the Foundation elsewhere – for example, at institutes of technology.

In 2005, 14 inventions were developed in the prototype workshop. The costs are, as a rule, added to the support funding (see below) received. Though the Foundation staff and the inventor collaborate closely on the invention, it is guaranteed that the inventor will hold all rights to his/hers invention all the time.

Financial support

Funding in the form of risk finance is provided by the foundation for the development of inventions for private inventors and SMEs. Collaterals are not required for this type of financing activity, and the money does not have to be paid back under certain circumstances (e.g., if the invention fails commercially). In addition, the payback sums are usually only to cover the costs of the Foundation – no additional interest is charged. Per invention, the subsidy generally varies between € 2,000 and € 200,000. The higher subsidies are decided on and paid out in several instalments (however, the whole subsidy has to be paid out within three years after a positive funding decision). The total funding volume for subsidies amounted to € 2.1 mio in 2005.

In order to be eligible for financial support, an invention has to meet several requirements: It should be usable, new and involve an inventive step–in other words, its patentability is being checked for. Furthermore, it should have enough market potential in order to demonstrate a reasonable probability that the Foundation will get its laid out funds back.

In the year 2005, the Foundation accepted 136 new invention proposals for funding and decided to continue funding of another 115 already running projects. Thus, in total 251 undertakings were given one of three possible types of subsidies:

- *Grants:* About 14 % of the funded projects were given so-called grants. This type of subsidy aims at covering the early costs of the development of an invention. Funding decisions are made rather quickly on the basis of the innovativeness, technical functionality and economical evaluation of the invention proposal. The inventor has to supply the Foundation with a written report on the use of the funds but there is no refund obligation.
- *Support funding:* Support funding is generally used for paying the costs related to patenting, later-stage product development and commercialisation. It incorporates a conditional re-payment clause to the Foundation depending on the success of the project and on the revenue received from it by the inventor. The amount to be refunded is limited to the amount of support granted by the Foundation, i.e. the subsidy is interest-free. If the invention fails to achieve commercial success, the inventor is under no obligation to pay the subsidy back. In the year 2005, 116 "support funds" (or 85 % of the total positive funding decisions) were awarded, making this instrument the most important one among the financial subsidy instruments.
- *Loan:* If the inventor starts a business with the central objective of exploiting an invention industrially and commercially, the Foundation can lend the inventor-entrepreneur working capital in the initial stages of commercialisation of the invention project. In the year 2005, only one such loan was awarded. The loan is awarded solely to small companies (not private inventors). Usually the loan is used for the first production runs. Though the terms of payment are individually negotiated, the preferential interest rate applied (loans are the only subsidy instrument where interest rates are applied) is the same for all beneficiaries.

With respect to funding of patenting costs, some points seem noteworthy: Usually, the patenting process starts with domestic patenting (costs in the first year are between € 3,000 and € 6,000). The next step would be a PCT application which costs about € 6,000 to € 7,000. Later in the PCT phase, costs e.g. for translations are incurred which amount to up € 20,000.-, depending on the number of countries protection is sought for. The Foundation may subsidize each of these phases, but funding decisions are made separately and depend on increasing requirements throughout the patenting process regarding the commercialization possibilities. For the 2nd phase, the PCT application, the Foundation will hear the opinion of the Finnish patent authorities about the probable success of the application. In later phases, the Foundation will only forward subsidies if the invention has extremely clear-cut chances of success in foreign markets and/or if the inventor is negotiating licensing agreements. Even then, the Foundation does not necessarily fund the application for every country the client is seeking protection for. "Support funding" is available also for IP rights other than patents (e.g., utility models) but usually other IPR instruments are considered less in funding decisions. The money forwarded is transferred directly to the inventor's/company's account.

Evaluation and Performance

In terms of quality assurance mechanisms, three user surveys were carried out in the past ten years. The results indicate that the image of the Foundation is that of a reliable and customer friendly organisation. The high competence of the staff was underlined, as was also the quality of general advice given with regard to patents. Weaker points seem to be the time till funding decisions are reached (2 months on average), and there also seems to exists some unmet demand for advice on marketing and more general commercialisation needs. Some of the customers think that there should be more viewpoints considered when evaluating the market

potential for an invention (e.g., end user opinions). A formal evaluation of the foundation was commissioned in 2006; results should be available by the end of 2007.

With respect to evaluations it is also worthy to note that an international evaluation group evaluated Finnish invention activities as a whole in 1998. The study also covered the Foundation's performance and stated that the Foundation is an important player in the Finnish innovation policy landscape. It especially highlighted the fact that the Foundation provides some unique services, and made further positive remarks with regard to its significant role for private inventors and small companies and its good networking performance. Last but not least, a user survey was also conducted for the Foundation's own published newspaper in 2005. One important outcome was the desire to read more about success stories.

The following performance figures were provided by the Foundation for Finnish Inventions for the benchmarking study:

- The Foundation handled approximately 20,000 information requests by prospective inventors (SMEs and private individuals) in 2005.
- 802 funding applications were received in the year 2005 and 215 of those received a positive response, i.e. they got funded. This means that only about 27 % actually pass all criteria for funding – an indicator for a selective procedure and a rather high quality of the supported projects.
- 41 projects were commercialised in 2005. Most of these projects applied for financial assistance concerning patents. Assuming that the number of funded projects remains constant over some period of time, this would indicate that for about 19 % of the supported projects patenting becomes an issue.
- Estimates show that about half of the applications, subsidised projects and subsidised patent applicants stem form private individuals/inventors, and the other half from SMEs.
- The average amount of subsidy was € 10,000.
- Most inventions were related to the field of physics (17 %).
- Since 1971, about 2,200 patents have been granted with support from this service.
- In terms of pro-active contacting, 171 organisations (mostly SMEs) were contacted and 32 inventions were offered to them. 104 visits were made for this purpose on site.

Performance indicators measuring the level of diffusion of information to the target group reported are:

- Media Clippings: The foundation has been mentioned 154 times in the media (newspapers, magazines and radio/TV)
- Hit rates: The website of the foundation had a hit rate of 127,000 in 2005.
- Circulation volumes: A foundation newspaper is published one time a year, with a yearly circulation volume of 35,000 (which is rather high)

Though IP protection methods other than patents and IP-related commercialisation activities (especially licensing activities) can be considered important in the service context, figures to this end have not been made available. The Foundation stresses that the important part of the service is not a focus on patents, but to be able to help inventors and small SMEs in the best possible way. This rather broad approach on the usage of different IP instruments can be certainly considered an element of good practice.

12.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

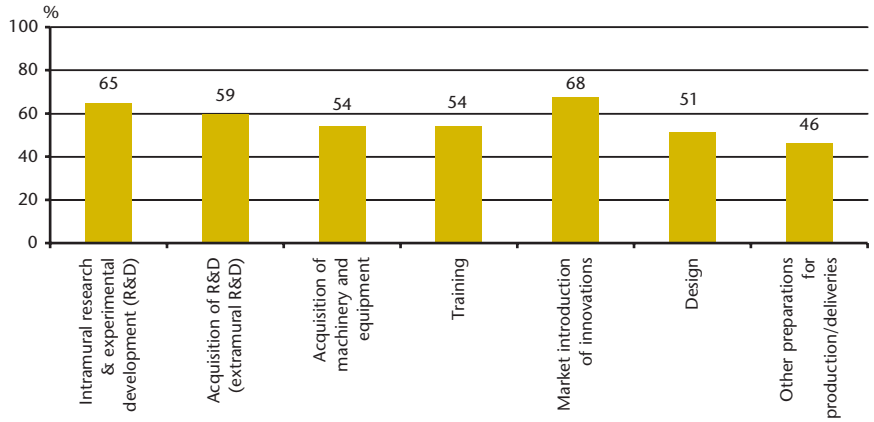
Characteristics of the user group

In the course of the user survey, 12 private inventors and 37 users from SMEs were interviewed. The inclusion of private inventors was done in order to analyse whether it is feasible to include SMEs and private inventors in one target group and treat them both alike or, alternatively, whether both groups have different needs and perceptions of the services which should be accounted for. One hypothesis regarding private inventors in this context could be that they might be future founders of successful start-ups and therefore worthwhile to foster. On the other hand, private inventors are often associated with people working on commercially useless inventions just for the fun of inventing – in such a case extending support would be hard to argue for.

Within the group of the interviewed SMEs around 98 % employ less than 9 employees and are thus micro-enterprises; the remaining companies have at most 10 to 49 employees. A focus of the Foundation on very small organisational sizes (even in the group of SMEs) is thus apparent.

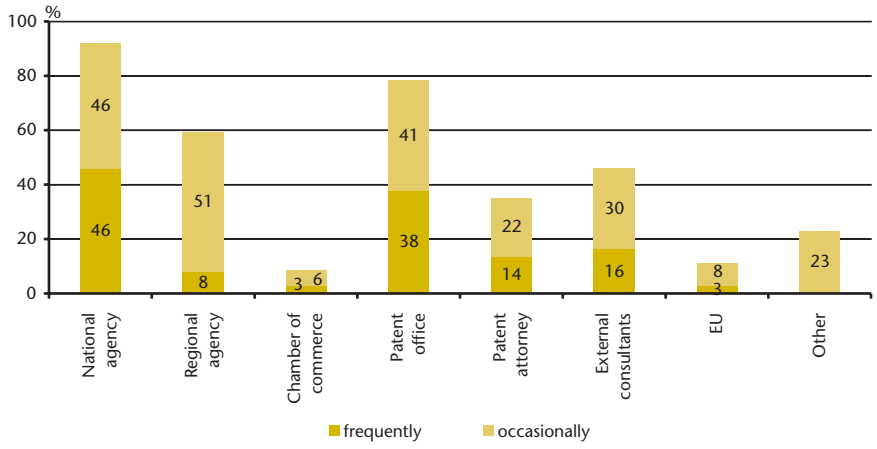
Between 2003 and 2005, 60 % of the SME users introduced product innovations (new or significantly improved products) onto the market; and around 35 % came up with process innovations. As can bee seen from Graph 126, a high number of enterprises were engaged in innovation activities across a number of mentioned categories. Around 65 % of the service users from SMEs conducted intramural R&D. On average, about 84 % of the staff works in R&D. The private inventors

Graph 126 Foundation for Finnish Inventions–Innovation activities in interview sample, 2005, percentage of respondents*), SME users



*) multiple answers allowed. Source: User Survey, n = 37

Graph 127 Foundation for Finnish Inventions–Usage of different service providers by SMEs, percentage of respondents*), SME users



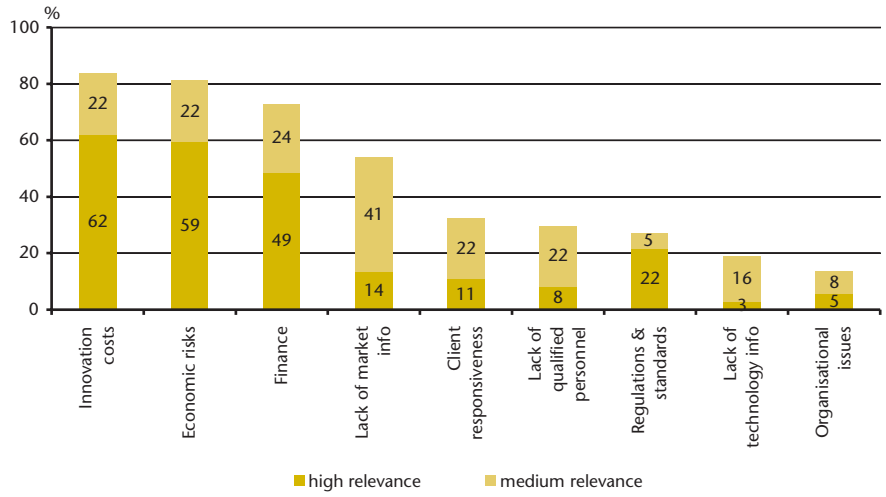
*) multiple answers allowed. Source: User Survey, n = 37

questioned see themselves as highly innovative, too, and stated for the most part (11 out of 12 responses) that they are engaged in R&D.

Users from SMEs take most frequently advantage of the service offerings of national agencies and the patent office (see Graph 127). Interestingly, foundation users utilise more often the services of external consultants than those of patent attorneys – findings with other services would on one hand indicate that external consultants play less of a role in overall innovation support, while patent attorneys are among the service providers which are used the most. At the same time, SME users of the Foundation often take advantage of the services of the patent office.

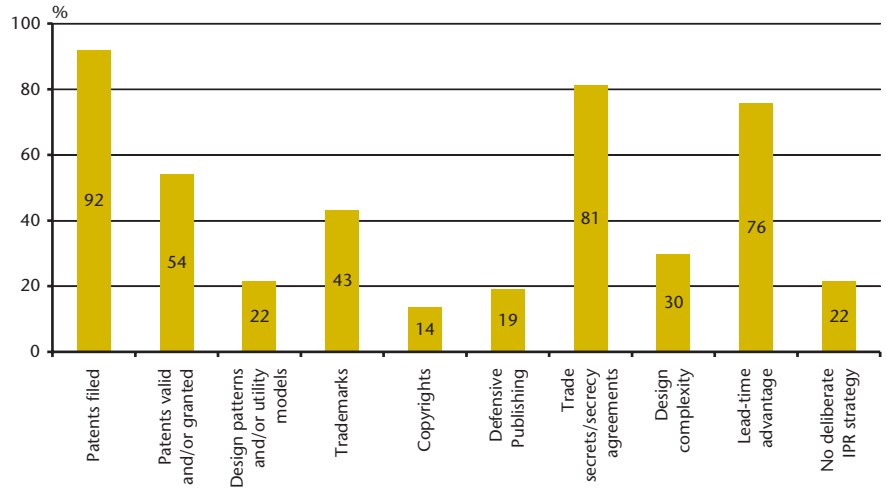
Regarding hampering factors for innovation activities, companies complained mostly about high innovation costs (for 62 % of high and for further 22 % of medium relevance), economic risks (for 59 % of high and 22 % of medium relevance) and the lack of appropriate sources of finance (of high relevance for 49 %, medium for 24 %, see Graph 128). The statements given by the private inventors show a similar picture. These findings are very much in line with other support services offered in the field of IPR.

Graph 128 Foundation for Finnish Inventions–Hampering factors for innovations, 2003 to 2005, percentage of respondents*), SME users



*) multiple answers allowed. Source: User Survey, n = 37

Graph 129 Foundation for Finnish Inventions–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*), SME users



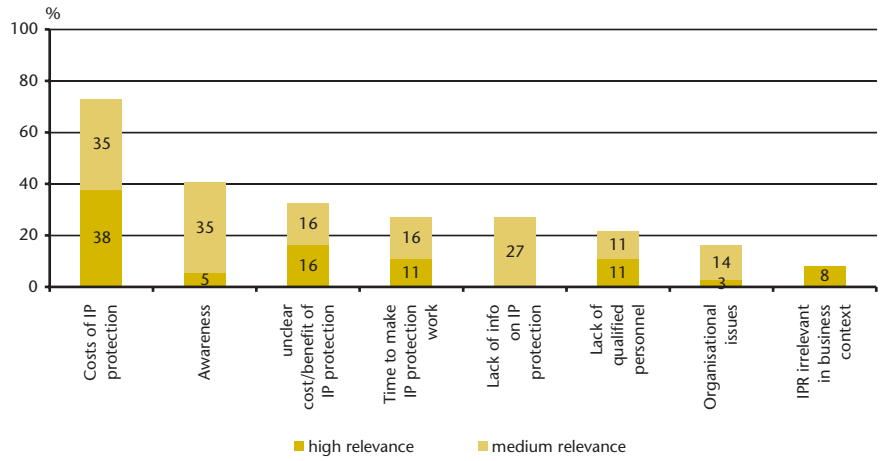
*) multiple answers allowed. Source: User Survey, n = 37

92 % of the SME users stated that they filed for a patent between 2003 and 2005 (see Graph 129). 54 % had patents granted or valid in the same time period. The usage rates of informal protection methods were also rather high – i.e. trade secrets and/or secrecy agreements (81 %) or relying on lead time advantage (76 %). Again, it can be seen that SMEs usually do not rely on one single IP protection method when it comes to securing and using their intellectual property. Furthermore, it can be suspected – given the high share of patents filed – that the Foundation users interviewed were probably all in later commercialisation phases of their projects. Findings with private inventors show a similar picture: All had filed for a patent between 2003 and 2005 and made also use of informal protection methods.

The by far most important internal barrier for using IPR methods is, for the users from SMEs, the costs of IP protection (for 38 % of high, for 35 % of low relevance). Cost/benefit considerations (i.e. the question on why or why not to patent) play an important role, too. Awareness seems to be also an issue, but for most only of medium relevance. The answers of private inventors are again very similar (see Graph 130).

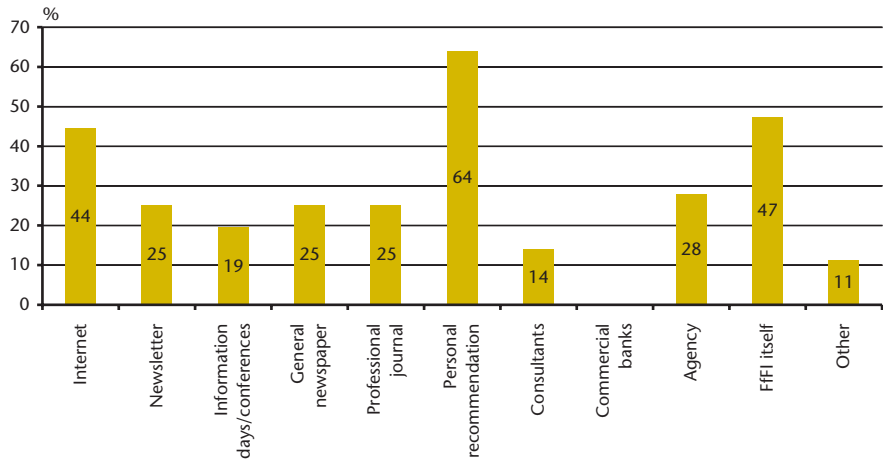
External barriers, such as the lack of accessibility (for 11 % of high and 16 % of medium relevance) and the lack of quality of available external support services (for 11 % of high and 5 % of medium relevance) are not perceived to be too much of a problem by the foundation using SMEs.

Graph 130 Foundation for Finnish Inventions–(Internal) barriers to using IP protection mechanisms, percentage of respondents*), SME users



*) multiple answers allowed. Source: User Survey, n = 37

Graph 131 Foundation for Finnish Inventions–Information channels, by which users got to know about the service, percentage of respondents*), SME users



*) multiple answers allowed. Source: User Survey, n = 37

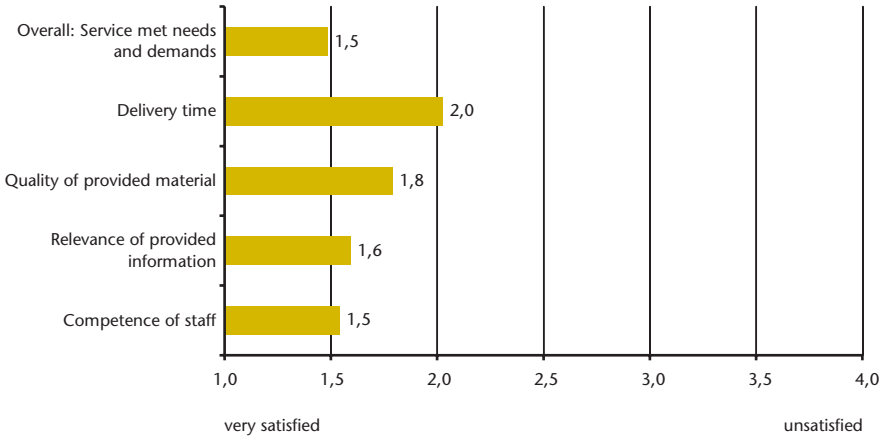
User reach-out and satisfaction levels

Information about the service seems to have been spread widely through many channels. Notwithstanding this, the most important source from which SME users found out about the service were personal recommendations (64 % of the users heard about the foundation through this channel); almost half of the users got knowledge about the service from the foundation itself. No distinctively different picture was found for private inventors (see Graph 131).

Users from SMEs are, on average, rather satisfied with the services offered by the Foundation. As can be seen from Graph 132, all aspects (delivery time, the competence of staff, the relevance of the provided information, etc.) are graded with "2.0" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied). Around 70 % consider the extent of the service offerings to be adequate – on the other side, the share of users (30 %) who think it's too narrow/superficial is also considerable. Furthermore, 53 % consider the administrative burdens as acceptable while 17 % believe they are too high.

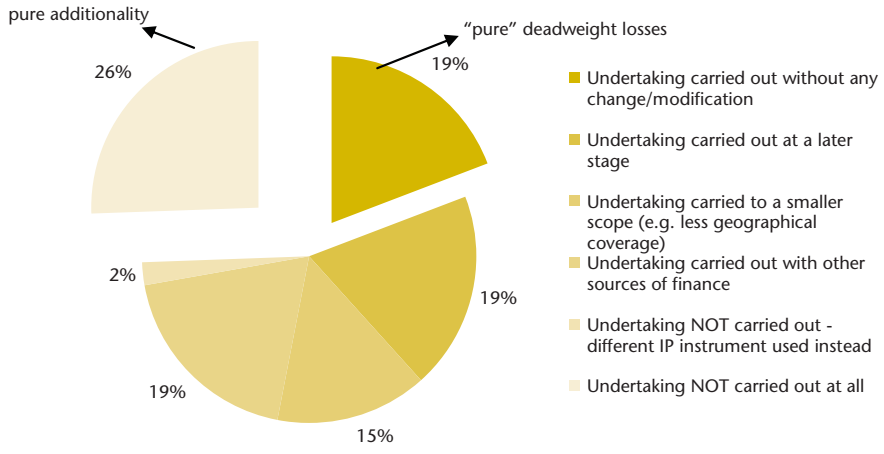
Spatial distance seems not to be a problem for the users from SMEs (for 73 % a very low-level barrier and for another 22 % a factor considered to be acceptable). 78 % think that the benefits of using this service clearly outweigh the efforts; 16 % state that the benefits are adequate to efforts.

Graph 132 Foundation for Finnish Inventions–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents, SME users



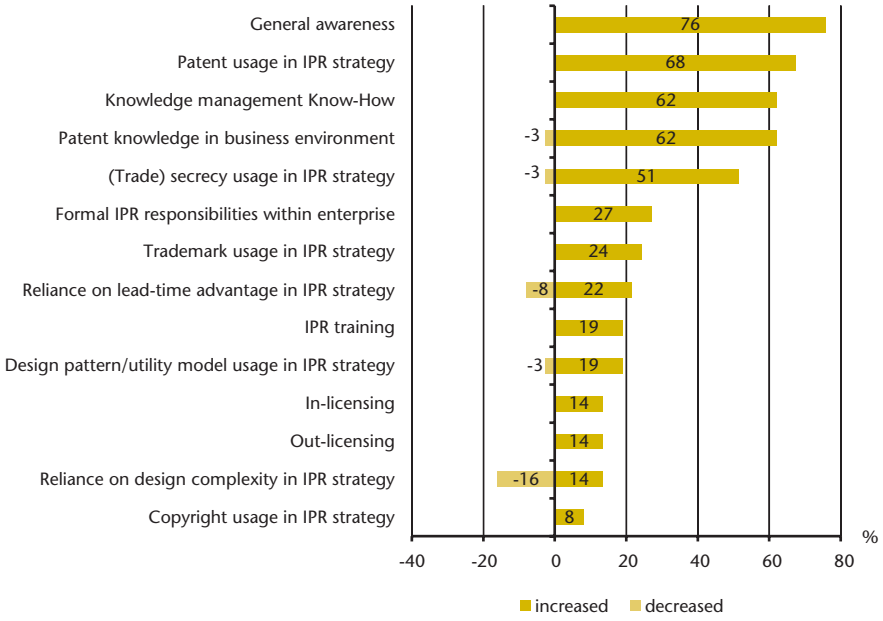
*) multiple answers allowed. Source: User Survey, n = 37

Graph 133 Foundation for Finnish Inventions–Additionality of the financial subsidy, percentage of respondents, SME users



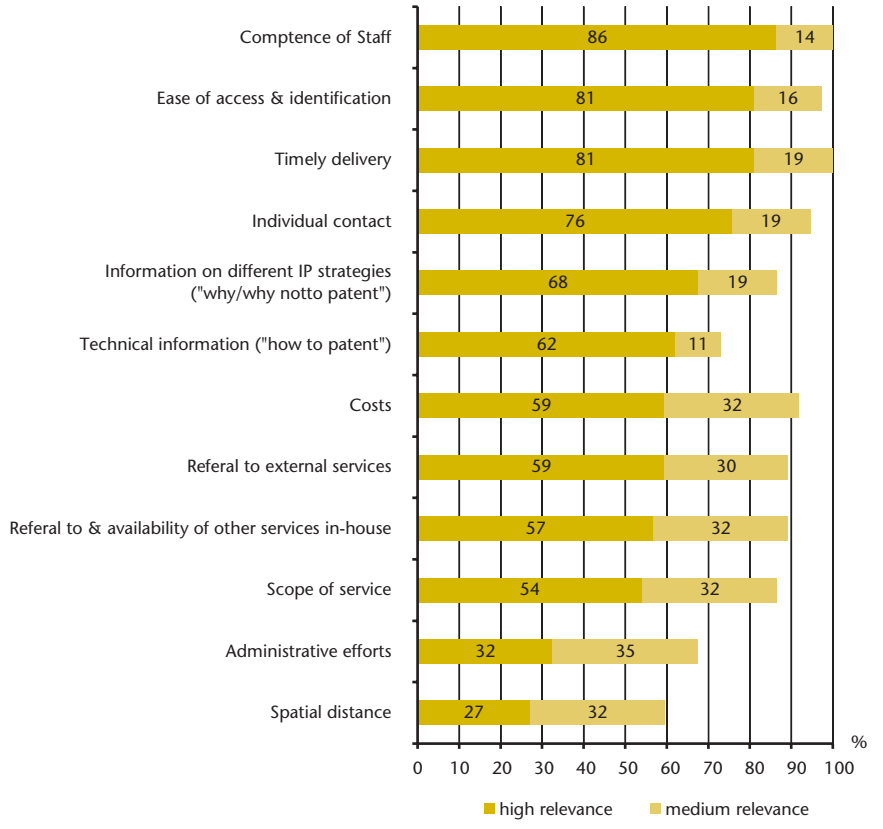
*) multiple answers allowed. Source: User Survey, n = 37

Graph 134 Behavioural additionality of the Foundation for Finnish Inventions, percentage of respondents*), SME users



*) multiple answers allowed. Source: User Survey, n = 37

Graph 135 Key quality factors for a service such as the Foundation for Finnish Inventions, percentage of respondents*), SME users



Source: User Survey, n = 37

Similar to the users from SMEs, a rather large share of private inventors tend to consider the extent of the service offerings as too narrow/superficial, but most are satisfied in this respect. Spatial distance is for private inventors not a problem: 10 out of 12 users consider it a low barrier. All private inventors questioned agree that the benefits offered by the service clearly outweigh efforts.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

Additionality effects for the offered financial assistance schemes seem to be rather high (see Graph 133). According to the survey results, 26 % of the undertakings of users from SMEs would not have been carried out without support from the service. On the other hand, 19 % would have carried out the undertakings without any change or modification.

The usage of the service portfolio offered by the Foundation, from financial support to marketing and support in commercialization of inventions, seems to have changed the treatment of many IPR-related aspects by the service utilising firms. The most notable changes took place with respect to general awareness on IPR issues and patent usage in the corporate IPR strategy (increased for 76 % and 68 % of the users, respectively) (see Graph 134). The Foundation can thus claim that its services significantly change the attitude of its SME customer base towards the creation of patents. Furthermore, patent and knowledge management know-how has increased considerably. Interestingly, trade secrecy usage in the IPR strategy also received a lot more attention – an indication that the Foundation staff does a rather good job in consulting with regard to general IP management which would cover also informal protection methods. Equally interesting against the background of the services high focus on finding licensees for their inventors is, however, also that licensing activities seem to have increased only for a small share of users.

Identified by a high share of users from SMEs, the most important elements of a service portfolio comparable to that of the Foundation are the competence of staff closely followed by the ease of access and identification and timely delivery (see Graph 135). Information on different IP strategies (why or why not to patent) was also considered to be one of the most important key factors. Interestingly, users showed also keen interest in technical information regarding IPR. Administrative efforts and spatial distance received the lowest relevance figures. Private inventors shared the views of the SMEs and seem to place a lot of importance on the existence of individual contacts.

As can be seen from the user survey results, private inventors and users from SMEs show very similar needs and wants regarding assistance with IPR issues. Despite the different characteristics, it seems that targeting both groups with one comprehensive portfolio of support measures would work very well for a service comparable to the Foundation.

12.3 Elements of good practice

The Foundation for Finnish inventions offers an integrated package of IPR services which exhibit as whole the following success factors (resp. elements of good practise):

- Nation-wide offered services with regional outlets (at/with relevant institutions);

- Uniqueness: this refers especially to the service element of the prototype workshop;
- Competence of staff with detailed knowledge on all aspects regarding IPR; not actually focussed on patents, but rather broad approach to IP protection;
- Far reaching and broad support for different stages of inventive activities (development, later commercialisation) which underlines the integrative character of the service;
- Support for very small SMEs AND private inventors (with the intent to push individuals more into commercialising their ideas – an otherwise rather untapped territory);
- Existing evaluation culture, and stemming from this, customer-orientation (the service elements do not seem to be rigid, but can be adapted and tailored easily to the needs of the supported persons);
- Restrictive selection criteria guarantee high-quality projects;
- Strong networking and referral activities;
- Coverage of formal IPR as well as less formal IP protection methods;
- Strong endowment with resources (financial and human).

Some challenges for the service remain:

- There is probably a need to increase further networking, marketing activities and enrich the services concerning the (not so much patent related) marketing/ commercialisation of inventions (i.e. with the National Board of Patents, patent attorneys and TEKES, another Finnish Innovation Agency), according to experts;
- Strict rules when selecting private inventors for funding: A lot of work goes into the filtering process which may be too much given the possible outcome;
- Some evidence exists that timely delivery might constitute an area for improvement.

13. Promotion of Industrial Property (by SEGAPI)

Country:	Spain
Original title:	Fomento de la Propiedad Industrial (by Servicio Galego de Propiedad Industrial (SEGAPI))
Target group:	SMEs
Coverage:	Regional (Autonomous Community of Galicia)
Category*:	(Pro-active) awareness raising measures/Public Relations
	Information Provision Services
	Training
	Customized in-depth consulting and advisory services/ points
	X Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research	

13.1 Promotion of Industrial Property (SEGAPI) in a nutshell

"Promotion of Industrial Property" (Fomento de la Propiedad Industrial) is an IPR support service to promote the usage of IP among SMEs in the autonomous community of Galicia. It can be seen as an example of how an IPR support service can also work in the regional context.

The main objectives of the service are:

- to increase IPR filings from the Galician region (as statistics have revealed that respective IPR filings are below the Spanish average);
- to establish an IP culture among Galician enterprises;
- to further strengthen the role of IPR as a competitive factor (again, statistical data suggests that Galician SMEs are lagging behind companies in other Spanish regions when it comes to IPR usage);

The service is targeted specifically at SMEs from a distinctive region (Galicia), though it does not aim explicitly at any companies from a specific industry or from a specific technology field. The companies actually using the service belong to a variety of industry sectors and technology fields, whereby no technology field or industry stands out in the user group.

All types of registrable IPR (patents, designs, trade marks and utility models) are covered; other IPR instruments (e.g., non registrable IPR, informal protection practices) are not specifically addressed. Furthermore, the service targets the phases of research on innovative projects and related IPRs (pre-registration phase), the process of registration/development of IPRs and also the acquisition of existing IPR rights. It does not, however, tackle the issue of how to utilize IPRs – all in all, the service is primarily an instrument to get SMEs to better use the formal IPR system.

The subsidy programme started in 2005 as a pioneer. No target figures have been set in 2005. For the future, target figures may be introduced but, according to service experts, this is still debated.

Background and resources

The service providing organisation, the Industrial Property Service of Galicia (Servicio Galego de Propiedad Industrial – SEGAPI) was established in April 2004 and is today run by the regional development and funding agency "Galician Board of Innovation, Industry and Commerce" (Conselleria de Innovacion e industria). The service is part of a policy at regional level and financed by the regional governmental body of Galicia.

During the set up of the service, a number of preparation activities were initiated, i.e. foresight exercises, exploration of user needs and the involvement of external consultants (i.e. the Institute of Industrial Law of the University of Santiago – Galicia). Moreover, SEGAPI identified and analysed similar initiatives within its nearer geographical neighbourhood in order to learn from other programmes related to IPR and offering subsidies. SEGAPI also looked into a programme implemented in Portugal for the promotion of R&D as well as at a specific IPR supporting service offered in the Spanish Region of Extremadura. In addition, ex-ante assessments for the period 2005–2006 (in co-operation with a consultancy company) were carried out. Taken together, this points to a rather thorough preparation process.

Besides offering subsidies for the registration of IPR, SEGAPI has also established accompanying measures to provide assistance in issues related to IPRs – activities in this respect include offering information on the procedures of IP registration, technology information services (research on patent and utility models), advice on legal matters and awareness raising actions focussed especially on SMEs. SEGAPI collaborates actively with the Spanish PO by means of collecting IPR applications and supporting users with legal procedures (new applications, renewals, transfers, modifications, etc.), analysing the documents handed in by enterprises, providing legal advice and technological information. As a high number of Spanish IPR institutions in autonomous communities like Galicia receive IPR applications addressed to the Spanish PO, some experts suggest that SEGAPI almost acts like an outlet of the Spanish PO.

However, SEGAPI can also refer its users to other, non-IPR related services within the "Galician Board of Innovation, Industry and Commerce" which emphasizes the integrative nature of this service package. The agency consists of a number of general offices with different objectives such as research, development and innovation (R&D&I), industrial promotion, information society, industry, energy and mines, commerce and tourism. In particular, the general office of R&D&I has developed different subsidy programmes aimed at fostering R&D&I activities (i.e. Fomento de la innovación empresarial (Support to Enterprise Innovation)).

SEGAPI is operated by around 10 persons; two people are solely responsible for the "Promotion of Industrial Property" measure. Most of the staff possesses an advanced knowledge regarding IPR, some experts are experienced engineers and trained in the field of IPR. External consultants are involved to the extent that they are subsidised to execute patent searches, viability studies etc. In 2005, the budget available for funding activities (without personnel overheads) was € 300,000 and was doubled to € 600,000 in 2006. Subsidies can only be awarded as long as the budget is not used up completely.

Regarding promotional activities, SEGAPI used a variety of channels to disseminate information about the programme such as the website of SEGAPI, press advertisements, lectures held at IP conferences, communication with IP agencies operating in the region, informative brochures delivered to Galician enterprises, etc.

Modes of operation

The programme supports SMEs and micro-companies which are registered in Galicia and have at least one production facility in this autonomous community. It consists basically of a subsidy which covers the following areas:

- The application for, maintenance or transfer of title of patents, industrial designs and distinctive signs, nationally or internationally;
- Reports over the technical state done prior to the application for patents and/or utility models (carried out by an external consultancy);
- Realisation of technical and economic viability studies related to the development and commercialisation of an invention or industrial design (carried out by an external consultancy);

- Establishment of contractual relations with business partners for the industrial development of an invention or industrial design (with the support of an external consultancy).

The subsidy covers up to 70 % of the costs (60 % in case of big enterprises) with a ceiling of € 36,000 (2006; 2005: € 30,000). Once the subsidies are granted, the service providing organisation wires the sum directly to accounts of the beneficiaries. Even if external consultants are involved in the process, the subsidy is finally granted to the benefiting SMEs.

Evaluation and performance

Regarding existing quality assurance mechanisms, a monitoring system is implemented which is based on a database of application forms. Monthly, weekly and at times daily checks are being made to see whether there is enough budget left and in order to analyse the types of applications received. As a consequence, slight adaptations have been introduced to improve or extend the service. In the latter context, the budget was for example extended from 2005 to 2006. Furthermore, once the Spanish PO publishes the annual statistics on Industrial Property in Spain, SEGAPI analyses the evolution of IPR registries in Galicia as well as the possible impact of their subsidies on that evolution. In addition to this, an evaluation is currently underway.

The take-up of the service in its first operational year can be considered to be rather good. The following overview summarizes the 2005 results:

- *Number of applications filed:* 353; 351 were solely from SMEs (2 from individuals);
- *Number of applications granted:* 154 out of 353. It should be noted that each application for a subsidy might include different expenses to be covered; therefore, a single application for funding might include two applications for trademark or three design renewals, for instance;
- *Total amount of subsidized IPR activities:* 370, thereof…
  - … 19 new patents were filed and granted with support from this service;
  - … 288 other IP rights (trademarks, designs, etc.) were newly registered with subsidy support from SGEAPI); 67 out of the 288 were international registrations;
  - … 63 other IPR activities were performed (mostly related to maintenance, transfer, technological information or feasibility plans, etc.).

Registration activities emanating from Galicia (measured as the amount of applications registered) increased by 21.34 % in 2005 compared to the previous year, whereas the average growth rate for Spain amounted to +4.61 %. However, no analysis is available to show how much SEGAPI played a role in this context.

In total, 3 advertisement campaigns were executed during 2005. 15 events were partly co-organized (there were lectures held at IP conferences), attended by approximately 20 people per event. Overall, about 2,500 SMEs were approached in 2005 in one way or the other.

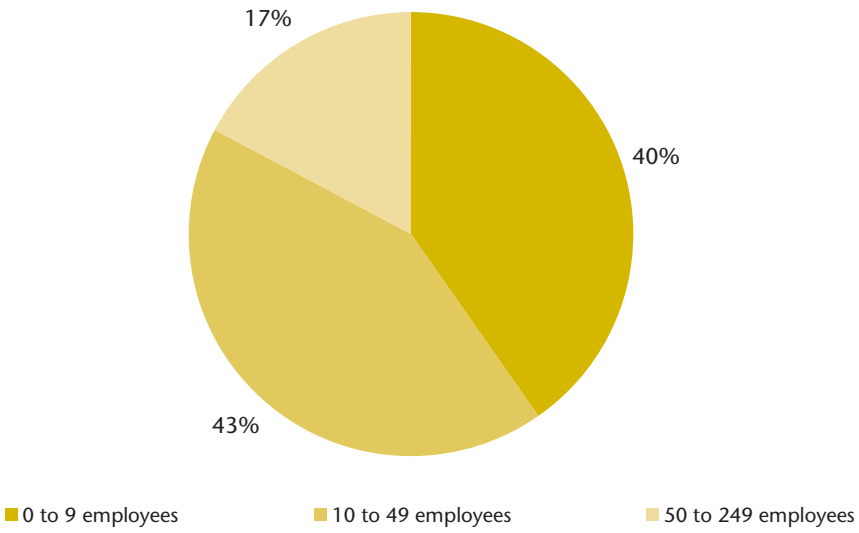
13.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

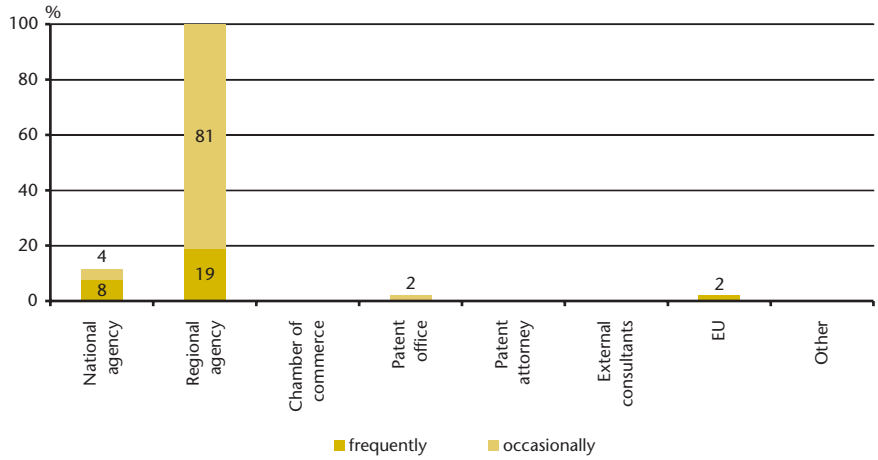
As part of the benchmarking study, 53 SMEs were subjected to a user survey which checked for user satisfaction and the impact the service had on the utilising companies. The distribution of the user sample shows that the service targets mostly small enterprises (83 %) with less than 50 employees (see Graph 136).

Graph 136 SEGAPI Promotion of Industrial Property–Company size distribution in interview sample, 2005, percentage of respondents



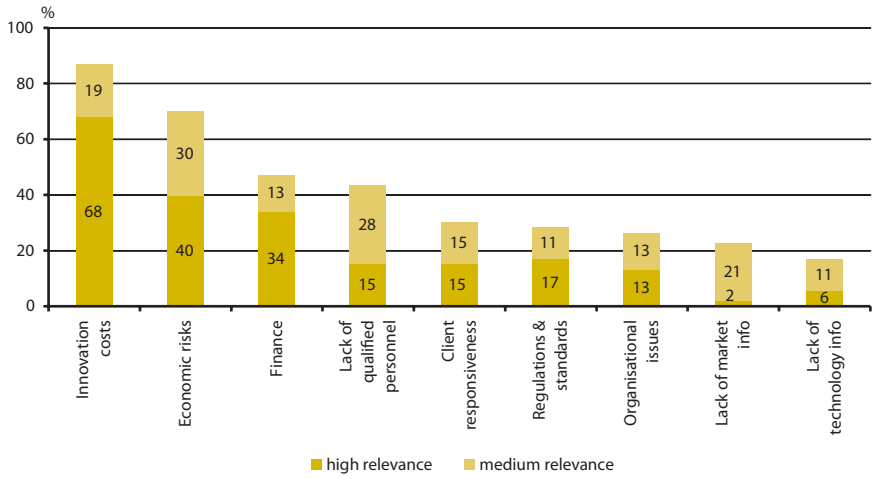
Source: User Survey, n = 53

Graph 137 SEGAPI Promotion of Industrial Property–Usage of different service providers by SMEs, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

Graph 138 SEGAPI Promotion of Industrial Property–Hampering factors for innovations, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

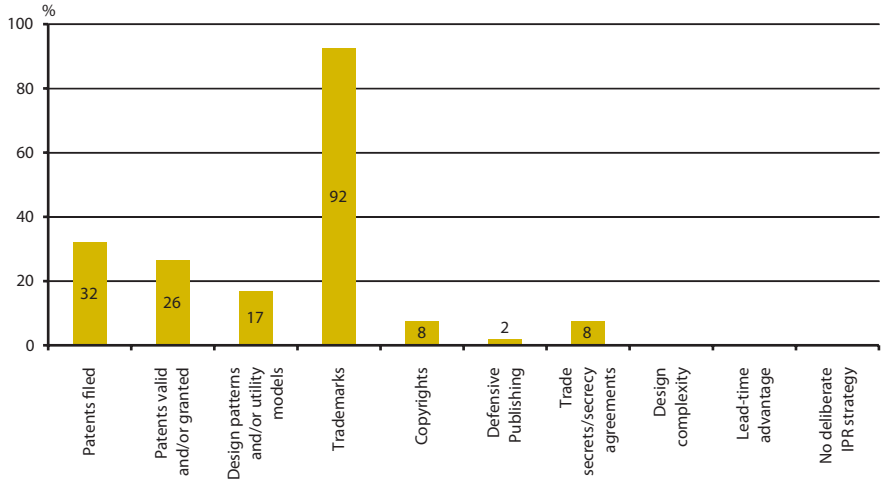
Like with other services analysed in the scope of the underlying study, service users seem to be highly innovative: Around 53 % of the service users introduced new or significantly improved products onto the market between 2003 and 2005, 45 % were able to introduce process innovations in the same time frame. However, only a few service users conducted intramural R&D, compared to other users of IPR support measures. It seems that classical R&D plays a less important role within the surveyed companies which is also emphasised by a relative low percentage of staff engaged in R&D (17 % on average). This may be seen as a first indication that SEGAPI users may stem from Low- and Medium Tech (LMT) industries, and one could ascertain that they would thus focus more on incremental innovation than radical ones; following this reasoning one might suspect that patents play less of a role in the SEGAPI context – a hypothesis which is substantiated further (see below).

SEGAPI patent promotion users utilise most frequently the services offered by regional agencies. As one may guess, the used regional support was most likely SEGAPI itself (see Graph 137). On the other hand and very surprising, no client made use of any support from patent attorneys or external consultants. This seems, at first sight, surprising as external consultants are often largely involved in the programme (e.g., to execute patent searches) and should be thus visible to the enterprises. However, the statements received by the respondents imply that many of the surveyed enterprises view SEGAPI as the service providing institution.

As regards factors hampering innovation activities, the users complained mostly about high innovation costs (for 68 % of high and for further 19 % of medium relevance), economic risks (for 40 % of high and 30 % of medium relevance) and financial sources associated with innovation projects (for 34 % of high and 13 % of medium relevance) (see Graph 138). By contrast, the lack of qualified personnel, regulations and standards, client responsiveness or organisational issues are considered less important. These findings are also in line with those from other services analysed in the scope of the underlying benchmarking study.

Regarding the methods of IPR-protection, most users (92 %) registered trade marks between 2003 and 2005 followed by filings for patents (32 %); around 26 % already had a patent granted or valid in that time period (see Graph 139). Interestingly, informal protection methods are not so much on the agenda of SEGAPI users – at least not consciously. The high share of trade marks indicates, in line with the rather low R&D activities, that the companies may be indeed less technology oriented. According to the service provider, most of the surveyed

Graph 139 SEGAPI Promotion of Industrial Property–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

enterprises were small sized and mainly involved in trade mark registration for marketing purposes.

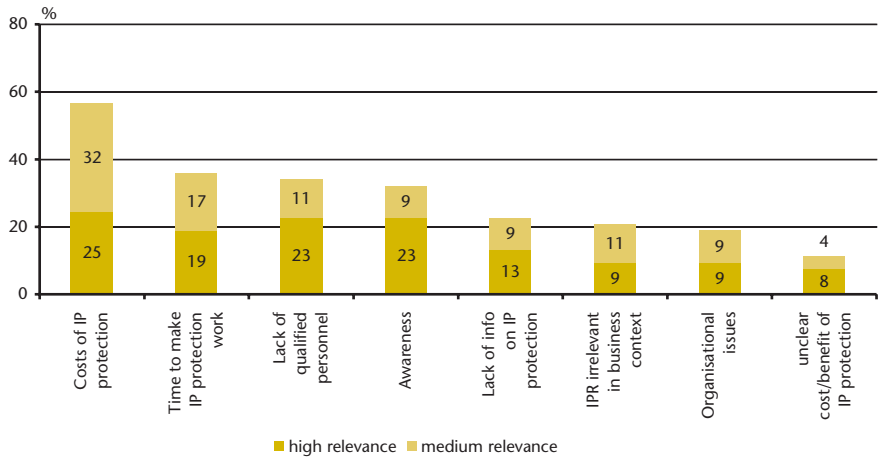
For the SEGAPI patent promotion users, the costs of IP protection (for 25 % of high and for another 32 % of medium relevance) are the main barrier perceived for using IPR. The lack of qualified personnel (for 23 % of high, and for 11 % of medium relevance) and general awareness issues are also considered important (see Graph 140). External barriers are perceived to be rather large obstacles: the lack of information on available support services (high relevance for 38 %, medium for 19 %) and the lack of accessibility (for 30 % of high and 9 % of medium relevance) are considered to be a problem. The quality of the available external support services (for 8 % of high and 11 % of medium relevance) seems to be, in turn, not an issue.

According to the interviewed experts, the lack of public awareness of the service is largely due to its short operation history. Based on anecdotal evidence, most regional SMEs are simply not yet aware of the service's existence.

User reach-out and satisfaction levels

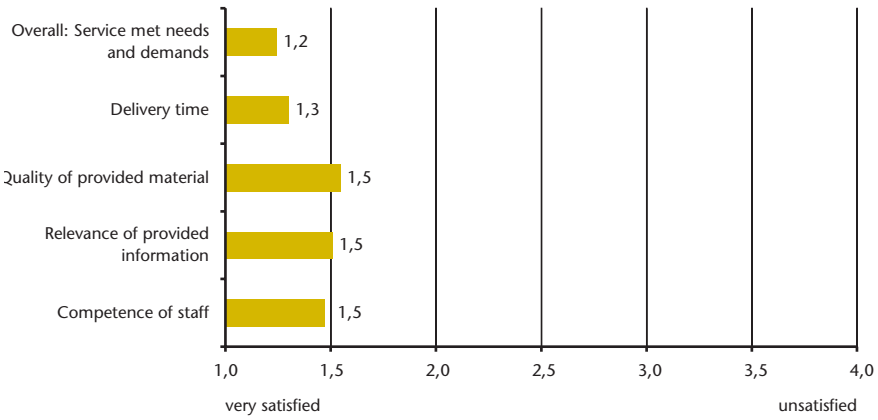
Users got to know about the SEGAPI patent promotion mainly from consultants (80 %) and from information on the internet (23 %). Furthermore, only few companies got to know about the service from the service providing organisation

Graph 140 SEGAPI Promotion of Industrial Property–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

Graph 141 SEGAPI Promotion of Industrial Property–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



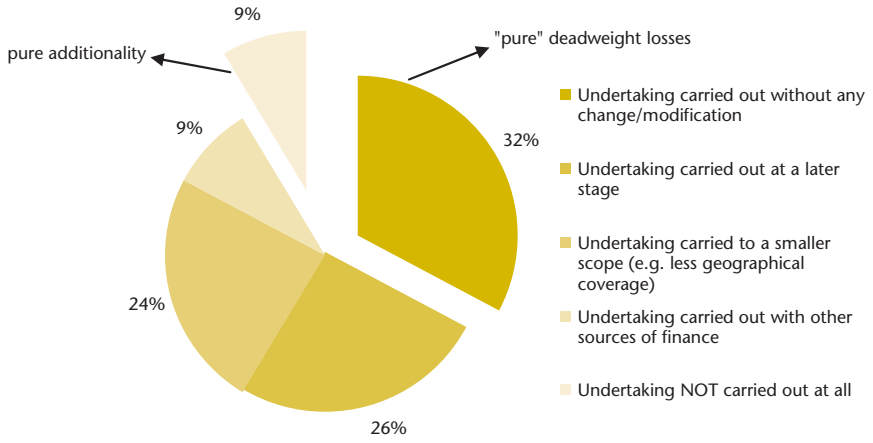
Source: User Survey, n = 53

itself (4 %); no user received information about the service from an agency. These results may point to areas of improvement regarding public relations and shows opportunities for marketing activities.

The service users were, on average, very satisfied with the service: all aspects (the competence of staff, the quality and relevance of the provided information, etc.) are graded with "1.5" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied) (see Graph 141). In addition, around 95 % consider the extent of the service offerings to be adequate; 51 % believe that the administrative effort to use the service is quite low – for 43 % at least acceptable.

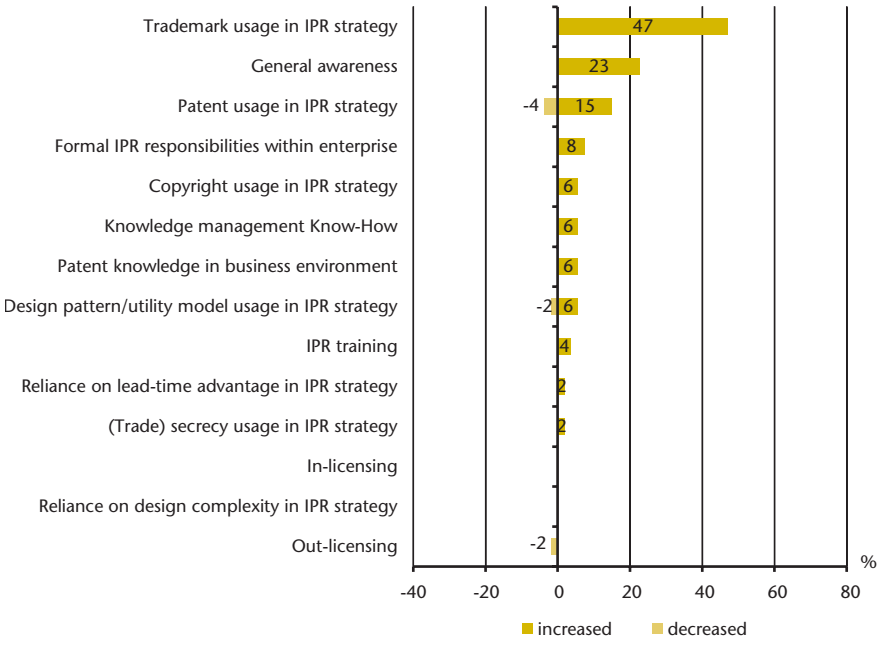
Spatial distance (for 58 % a very low-level barrier and for another 37 % a factor considered to be at least acceptable) does not seem to be a problem, which is not surprising for a service offered on a regional level. For around 70 % of the users, the benefits of using this service clearly outweigh the efforts.

Graph 142 SEGAPI Promotion of Industrial Property–Additionality of the financial subsidy, percentage of respondents



Source: User Survey, n = 53

Graph 143 Behavioural additionality of the SEGAPI Promotion of Industrial Property service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

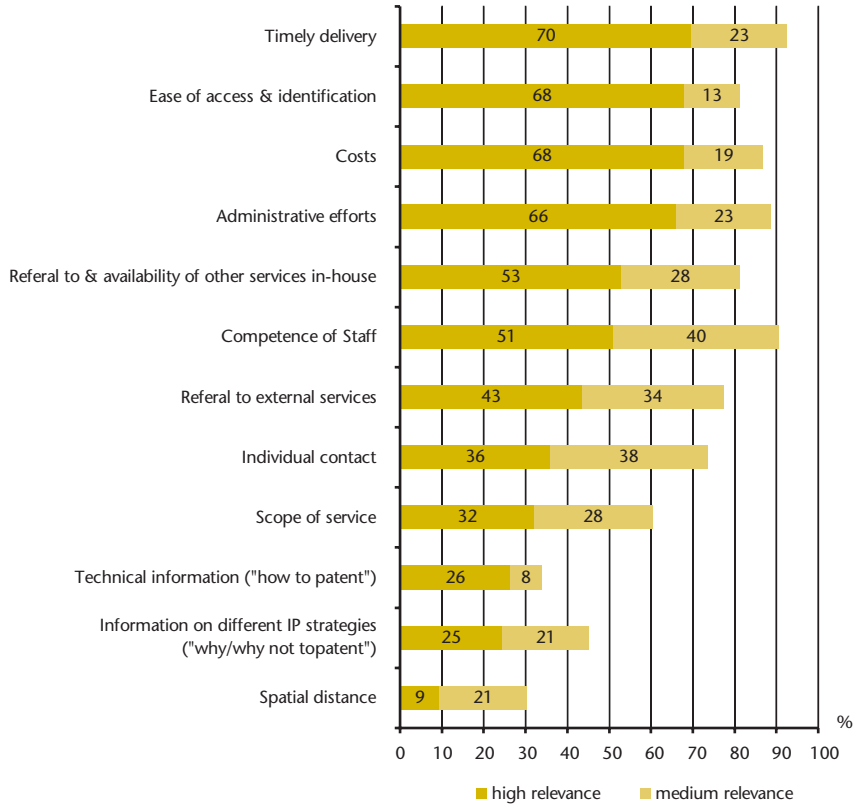
Additionality of the service

In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

The subsidy has achieved rather low additionality effects, which might be explained by the focus on trade marks: Trade mark applications are much less costly than patent applications, and the cost barrier tackled by subsidies is thus not as high as with patents. Around 9 % of the undertakings would not have been carried out at all in the absence of support from the service. In addition, 24 % would have been carried out but to a smaller scope, another 26 % of the enterprises surveyed would have carried out their undertakings at a later stage. Around 32 % would have carried out their IP-related undertaking, regardless of the service (see Graph 142).

Bearing in mind that most of the subsidized IP actions in 2005 were related to the registry of other formal IPR methods than patents (i.e. newly registered trade marks, designs, etc.), it seems not surprising that the most striking changes in the attitudes towards the protection of IPR concern the usage of trade marks and general IPR awareness. Very few behavioural aspects were recorded with respect to other IP protection and usage tools (see Graph 143). This is not per se a bad example for SEGAPI, as the positive effects are still in line with the goals of the service. It shows that a regional initiative can have high effects in particular selected areas but that a larger more open service (covering e.g. also informal protection methods) might be needed as a complementary offering on the national level.

Graph 144 Key quality factors for a service such as SEGAPI Promotion of Industrial Property, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 53

Users were also asked what they felt to be the most important elements of a service similar to the SEGAPI offerings. Ease of access and identification (given the fact that marketing still seems to be an area for improvement), administrative efforts and costs as well as timely delivery were considered as most important factors contributing to the success of a service like SEGAPI. Interestingly, the competence of the staff was also considered important by most of the SMEs surveyed, but the share of users who put "high" relevance to this aspect was less than with other services analysed in the scope of this study (see Graph 144). This can be due to the focus on trade marks which may be considered easier to handle than patents.

13.3 Elements of good practice

The service exhibits the following success factors (resp. good practice elements):

- Clearly stated, very specific goals, offered in a regional context;
- Governance structure: Careful planning process and existing evaluation culture;
- Integration into a wider range of IPR-related services; interaction with general innovation support programmes;
- Referral activities to external consultants (by subsidising them), when solutions are needed that cannot be supplied to SMEs directly;
- Uniqueness: Only service of its type in Galicia;
- Quite large take up.

The service faces the following challenges:

- Low visibility with its target group, supposedly due to its young age
- According to the statements received by programme officials, larger companies are increasingly seen as a viable target group, but also private individuals. Therefore, it seems that the regional government is getting more interested not to address SMEs only. A step in this direction has been taken in 2006, since when subsidies were also offered on an experimental basis to larger companies, but only to cover expenses derived from the geographical extension of already existing IPR titles.

14. Danish Patent and Trademark Office (DKPTO)

Country:		Denmark
Original title:		Patent- og Varemærkestyrelsen
Target group:		All companies
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
		Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

14.1 The Danish Patent Office SME services (DKPTO) in a nutshell

The on-line services of the Danish patent office and their trainings courses have been chosen for illustrating elements of good practice regarding the creation and maintenance of an IPR-related website and the operation of IPR educational measures, both from which SMEs can benefit to a larger proportion. The service package analysed enjoys a high reputation internationally.[34] It should be mentioned, in addition, that the DKPTO offers also other services from which SMERS could benefit – it has, for example, also developed an IP tool ("IP Score") which is used for valuing the IP of an enterprise; furthermore, the DKPTO is also actively cooperating with other patent offices and international institutions with respect to further enhancing and expanding its services. These activities should be also mentioned in more detail, too, as they illustrate the benefits of an integrated approach with high networking activities. Eventually, the DKPTO is also an example of how national patent offices are thriving to become full-scale service providers.

The Danish Patent Office (DKPTO) is the national IPR competence centre for information regarding IPR and the protection of technology and know-how. As a government agency, the DKPTO grants patents and registers trade marks, utility models and designs and offers a wide range of services that assist businesses to expand their innovation capacity. The DKPTO sees itself as a market- and customer-orientated institution aiming to support businesses by offering know-how, guidance and counselling when it comes to IPR.

The main entry point for all parties interested in IPR related issues is DKPTO's website (www. dkpto.dk) which provides an overview of all the services, schemes and activities offered in a very detailed manner (i.e. content of the service, anticipated benefits, costs and delivery time). The most important goal of the DKPTO is to increase awareness and understanding of IPR issues among Danish businesses and others interested in IPR-related issues. Furthermore, the DKPTO aims:

- to foster the development, usage and protection of knowledge and technology,
- to assist businesses in using IPR with a range of different support services to strengthen their innovation capabilities and competitiveness on the national and international market and
- to expand its role as the national IPR competence centre in the future with the aim to encourage the development of knowledge and competencies in the

[34] see, for example, also Moulin & Thue 2005

field of IPRs in co-operation with relevant IP stakeholders and players in the innovation system.

Besides the above mentioned website there are also other information services offered, including library and online services. The DKPTO provides a variety of commercial services related to IPR which include searches in different databases on patents, trade marks and designs and technical surveillances and profile analyses. In addition, various courses with different focal points regarding IPR are offered to external interested parties. According to the service provider, commercial activities are mostly used by larger, foreign enterprises to support them when filing a patent. Smaller indigenous companies, by contrast, use services free of charge more frequently.

The DKPTO does not have an explicit service focus on SMEs but pays special attention to the needs of small enterprises. The services are offered to companies of all sizes and cover all phases of IPR usage. No restrictions are in place for certain industries or technology fields. Experts noted tough that companies from the pharmaceutical sector can generally be considered as the majority of the overall service users. The service is offered on a national level; most of the information activities, however, are carried out on a regional basis

Background and resources

Established in 1894 and based in Taastrup, close to Copenhagen, the DKPTO is a public agency operated under the Ministry of Economic and Business Affairs. In addition to the granting of patents, trade marks and utility models, the DKPTO assists companies by offering know-how and guidance through the different phases of an innovation process, information services, including a library, awareness programmes and online services combined with individual consulting on a company's strategy regarding IPR (IP Management). In order to catch up with the latest developments in the IPR world, all service offerings and concepts are updated on a regular basis to maintain the high quality programme.

The DKPTO is active on an international level but also experienced in national and regional cooperation projects. In this manner, the DKPTO works in close collaboration with other public authorities (e.g. technology information centres (TICs)) and co-operates, mostly project-based, with the private sector. Aiming to foster partnerships with educational bodies, the DKPTO also co-operates e.g. with the Danish Technological Institute promoting the "Entrepreneur-apprentice" and seeks to set up collaboration work with a business school to create an IP research environment to analyse the background behind IP activities in general. Referral activities by the DKPTO to such authorities or institutions are likely to occur.

In this context, a feasibility study on the establishment of a Joint Nordic patent authority under the PCT (Patent Cooperation Treaty) has been carried out in 2004. The study aimed to show how a cooperation model between patent offices and other IPR related stakeholders in individual Nordic countries could serve to promote local frameworks. Based on this feasibility study, another study was carried out to discuss detailed proposals for an enhanced Nordic cooperation in the patent field, including the establishment of a Nordic Patent Institute (NPI). However, negotiations on this matter are still ongoing. The Nordic Patent Institute aims to be operative from January 2008 on. By the end of 2006, the co-operation platform consisted of the patent offices in Denmark, Iceland and Norway.

Around 270 employees operate the DKPTO. The staff consists of highly experienced industry or technology experts trained in IPR and related issues: almost 100 are solely responsible for patent examinations, around 50 possess a legal background and 30 are trade mark specialists. The DKPTO sees itself as a market-oriented service provider and business partner. In this light, it should be emphasised that the DKPTO is not funded or subsidized by the government but self-financed from its revenues and expenditures generated from operating its services and through its own consulting activities. In 2004, the total income of the DKPTO was approximately

€ 22.8 mio (DKK 169 mio); total expenditure was around € 19.8 mio (DKK 147.4 mio). Net profits for 2004 amounted to € 2.4 mio (DKK 18.1 mio).

Considering the large service portfolio offered by the DKPTO, service experts state that there are no crowding out effects visible with respect to private service providers. In this light, some experts argue that the DKPTO offers only support in IPR issues, i.e. searches and analyses, but leaves it up to the companies to make assessments out of it. This assures, as experts note, no conflict of interest between being a service provider and public authority at the same time.

Regarding marketing activities, a national and international information infrastructure was set up to disseminate information on the service offerings. Personal recommendations and word-of-mouth marketing is considered as on of the most important public relations tools. Furthermore, the service is marketed at conferences, industry fairs, through newsletters and via direct mail. As service experts note, the DKPTO is well aware of the importance of meeting people face-to-face to get to know the needs and wants of the various businesses.

Modes of operation

The service portfolio offered by the DKPTO includes: [35]

- Organisation of awareness raising measures and initiatives (i.e. talking at conferences, holding lectures);
- Diagnostic and valuation tools, i.e. searches on patents, trade marks and designs, technical surveillances and profile analyses; using surveillance methods;
- Training sessions and seminars to discuss IPR issues and IP policy;
- Legal and other assistance in licensing negotiations.

During the last years, the DKPTO participated in a number of events, i.e. the HI Fair (Scandinavia's largest trade fair), and initiatives with the regional business service centres to promote innovation, R&D and IPR issues. Together with the information services and training courses, these measures formulate important pillars of the service offerings by the DKPTO. In the following, the online and software based services and training courses are described more in detail and will also be discussed further in the user survey.

Online services and software tools

PVSonline is the internet service provided by the DKPTO. This service allows electronic access by subscription to legal rights databases and offers the possibility to search in patents, utility models, designs and trade marks. The search is free of charge and covers a large number of IPR databases. Moreover, an e-filing system is offered which accepts online filings of trade marks. Registration and payment (by credit card) can be made directly through the website. In this context, some service experts agree that online patent screening requires certain know-how regarding IP. It has been noticed quite often that companies turned to the DKPTO for help because they experienced problems with conducting the online-research process on their own.

In addition, the DKPTO developed a patent watch system, IPsurvey™. Through this surveillance system, the user is allowed to monitor patent information by setting up a search profile covering the technology areas in which he/she is interested. In his personal watch database, the users can track relevant patent applications. The service is updated regularly with new references. The annual cost of IPsurvey™ is about € 2,700 (VAT not included).

Besides the online available information service, the software tool IPscore® (Version 2.0 by the end of 2006) is offered which provides a thorough evaluation of patents and technological development projects. IPscore® focuses on five categories (legal status, technology, market conditions, finance and strategy) and walks the

[35] See also: www.dkpto.dk

participant through around 40 assessment factors to identify the value of different business products and to deliver the basis for professional IP-management. IPscore will be delivered as a software package (CD-Rom) with a user's manual; the costs for the service pack amount to € 2,400.

It has to be mentioned, though, that the DKPTO holds the rights for IPscore® in Denmark but decided to assign international rights to the European Patent Office. As experts state, the DKPTO felt this step was important, since the tools value increases with the amount of companies that use it.

Trainings courses and seminars

The DKPTO also provides a large number of targeted IPR courses. The various departments of the DKPTO send their experienced personnel to hold seminars to the public in a wide range of IPR related areas, also in IP management. However, the average course is a one-day event, typically about patents (what products can be patented and how, general introduction, assistance with patentability evaluations, application formulations etc).

More than 40 courses and seminars are offered every year. As the user group is very heterogeneous, the DKPTO arranges customised courses and seminars. Apart from companies that seek knowledge about IPR in relation to their products, there are also courses targeting IPR agencies and patent agents. Around 95 % of the courses are held at the DKTPO's premises in Taastrup, Copenhagen. At the end, the courses are evaluated by an evaluation tool (called 'customer logic' from Analyse Denmark). Service experts report that the overall feedback from participants is generally very good.

Evaluation and Performance

A number of instruments and quality assurance mechanisms are in place to further increase efficiency and service quality. Customer satisfaction, response time and delivery time are benchmarked and analysed to improve performance. In this context, the service provider underlines especially the high level of customer satisfaction evidenced in annual surveys. The focus of the performance measures seems to be on the core operating field of IPR filing and processing – information regarding the assessment and performance measurement of the other services available was, except for fact that IPR courses are evaluated using the "customer logic" tool, not available.

In 2004, the DKPTO processed around 2,000 Danish patent applications, 5,100 applications were filed in the field of trade marks. By contrast, Danish design applications have seen a steady decline during the last years (2002: 2,100 applications; 2004: 700 applications). As the 2004 Annual Report of the DKPTO outlines, this development is basically due to the fact that companies chose to use new possibilities of applying for a design protection offered at European level instead of filing with the DKPTO only.

As the DKPTO operates under the auspices of the Danish Ministry of Economics and Business Affairs, the DKPTO is required to carry out performance measurements which entail assessments of such targets as processing time for patent applications and trade marks registrations. In 2006, the processing time for patent applications was considered to be "satisfactory" by the users, as around 96 % of the applications were processed within the defined time limit. On the other hand, users rated the processing time for trade mark registration in 2006 as "not satisfactory" as almost 30 % of the applications were not processed within the time limit. Based on official information from the DKPTO, the latter result was due to internal reorganisation processes.

DKPTO's website is considered to be a main entry point for customers with monthly hit rates ranging to 120,000 hits. In addition, it is estimated that the DKPTO handles about 150 telephone inquiries daily.

14.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below. The focus of the survey lied on users that made use of the website or have attended an IPR course.

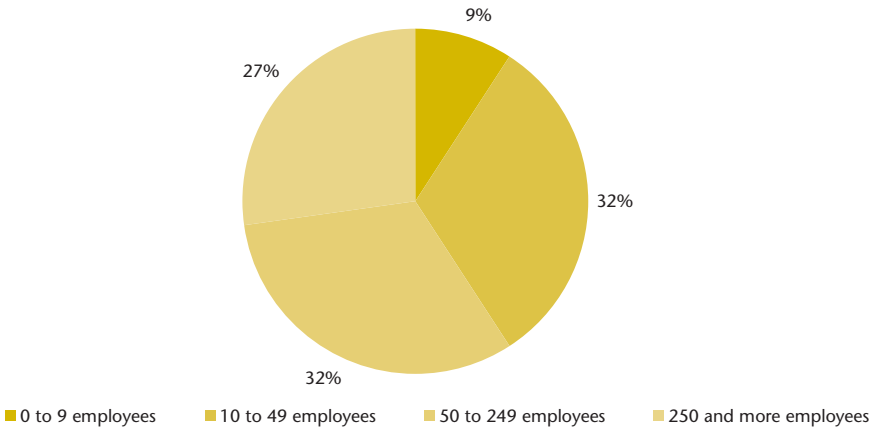
Characteristics of the user group

In total, 35 users were surveyed about their experiences with the DKPTO: 25 made use of the specialized IP courses, 10 took advantage of the PVSonline electronic access service. Thus, for the accuracy and closure of the survey, these service users were split into two groups and analysed separately. However, considering the small user sample size, care has to be taken when interpreting results.

As can been seen from Graph 145, users/attendants of the IP course are spread very evenly across all company sizes; 27 % had also more than 249 employees. By contrast, half of the questioned PVSonline users are micro-enterprises with less than 9 employees. Service experts confirm this user-take up as representative.

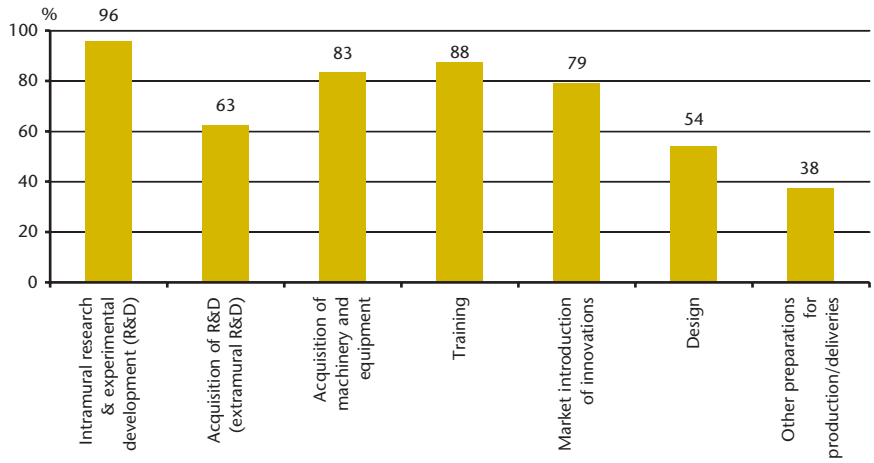
Between 2003 and 2005, IP course users/attendants were very innovative: around 92 % introduced new or significantly improved products onto the market; more than 60 % came up with process innovations. 96 % of the IP course users/ attendants conducted intramural R&D, 88 % were engaged in training activities

Graph 145 DKPTO–Company Size distribution in interview sample, 2005, percentage of respondents*), IP course users



Source: User Survey, n = 25

Graph 146 DKPTO–Innovation activities in interview sample, 2005, percentage of respondents*), IP course users



*) multiple answers allowed. Source: User Survey, n = 25

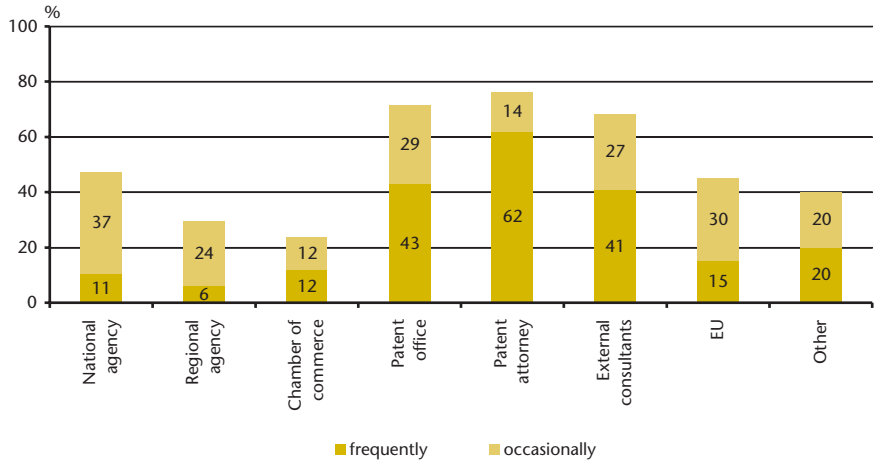
(see Graph 146). In addition, about 45 % of the staff works in R&D. PVSonline users were innovative as well: 8 out of 10 delivered product innovations to customers; 7 users developed process innovations.

IP course users/attendants most frequently take advantage of the service offerings of patent attorneys and, not surprisingly, the patent office itself (see Graph 147). The high usage of patent attorneys seems not surprising if the high share of large companies is taken into consideration. Having said that, the prevalence of patent attorneys as service providers points to the important role they play in the context of IPR service provision.

Interestingly, the services offered by external consultants were used very often between 2003 and 2005. Almost the same results were found for the PVSonline users, where the usage of patent attorneys and the DKPTO stand out.

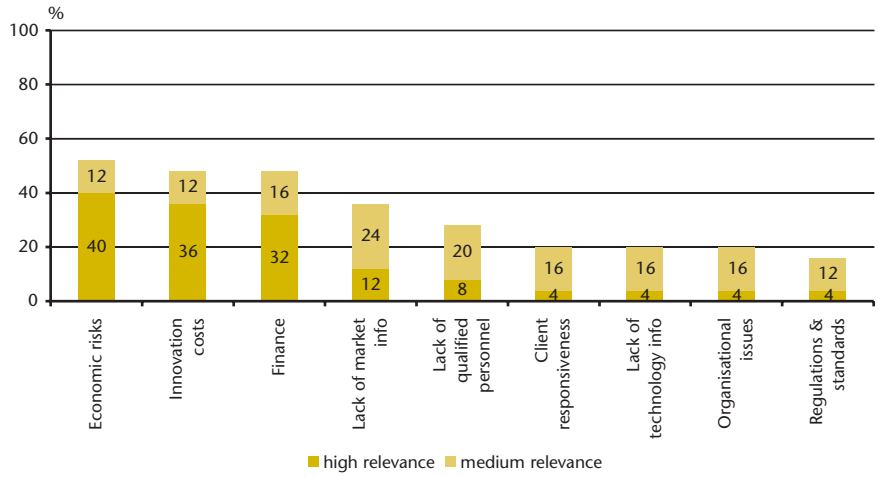
Some IP course users/attendants experienced hampering factors for innovation during 2003 to 2005, mostly complaining about economic risks (for 40 % of high and for further 12 % of medium relevance), high innovation costs (for 36 % of high and 12% of medium relevance) and sources of finance (high relevance for 32, medium for 16 %; see Graph 148). Even though the IP course findings are in line with the results from similar service offerings, the high share of large companies in the user sample should be considered. Almost the same results were found for

Graph 147 DKPTO–Usage of different service providers by SMEs, percentage of respondents*), IP course users



*) multiple answers allowed. Source: User Survey, n = 25

Graph 148 DKPTO–Hampering factors for innovations, 2003 to 2005, percentage of respondents*), IP course users



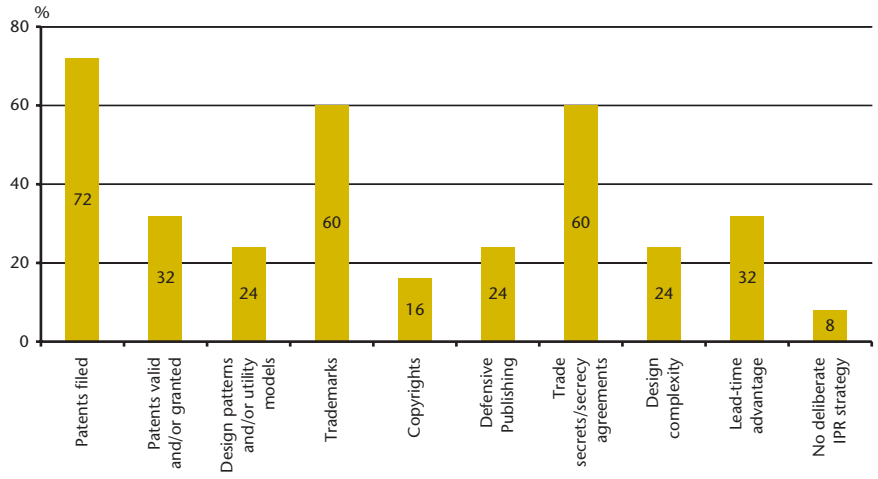
*) multiple answers allowed. Source: User Survey, n = 25

PVSonline users; only regulations and standards were considered to be even more important (for 3 out of 10 users of high, for 2 of medium relevance).

Regarding the methods of IPR-protection, most IP course users/attendants (72 %) filed for a patent between 2003 and 2005; 32 % already had a patent granted or valid (see Graph 149). 60 % of the users stated that they used trade marks to protect their IPR. On the other hand, some enterprises also employed informal IPR protection methods, i.e. trade secrets and/or secrecy agreements (60 %) or relied on lead time advantage (32 %). For the PVSonline users, similar results were found: 6 out of 10 filed for patents; also 6 utilised trade marks as a protection method. Some enterprises who used PVSonline stated that they employ also informal protection mechanisms; 6 out of 10 focused on a competitive lead time advantage.

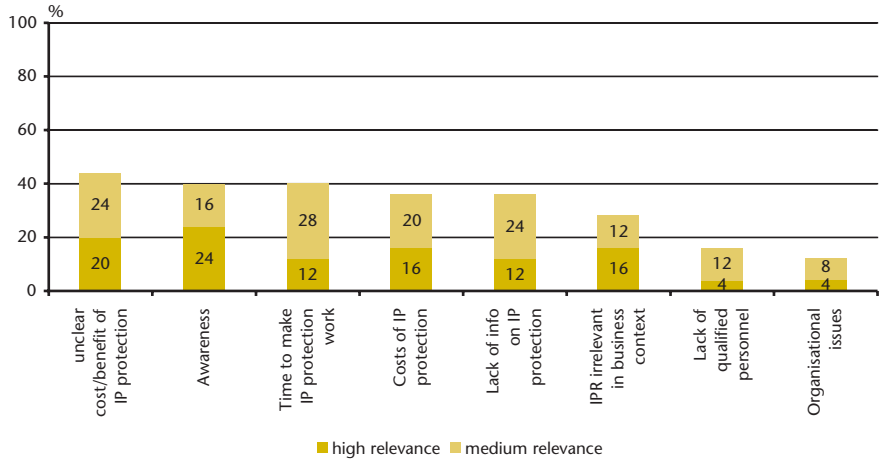
For the IP course users/attendants, general awareness issues (for 24 % of high, and for 16 % of medium relevance) and cost/benefit considerations (high relevance for 20 %, medium for 24 %) are perceived to be the main internal barriers for using IPR (see Graph 150). Except organisational issues and human resources, all categories were considered relevant for a total of 30 % and more. Considering these findings, a broader IPR management counselling could help to lower these barriers. For the PVSonline users, cost issues and the time to make the IP protection work were considered to be relevant.

Graph 149 DKPTO–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*), IP course users



multiple answers allowed. Source: User Survey, n = 25

Graph 150 DKPTO–(Internal) barriers to using IP protection mechanisms, percentage of respondents*), IP course users



*) multiple answers allowed. Source: User Survey, n = 25

External barriers towards the availability of support services were not considered to be significant barriers for IP course users/attendants. Regarding PVSonline users, the lack of information on external support services (for 2 out of 10 enterprises of high, for 5 of medium relevance) were perceived to be obstacles.

User reach-out and satisfaction levels

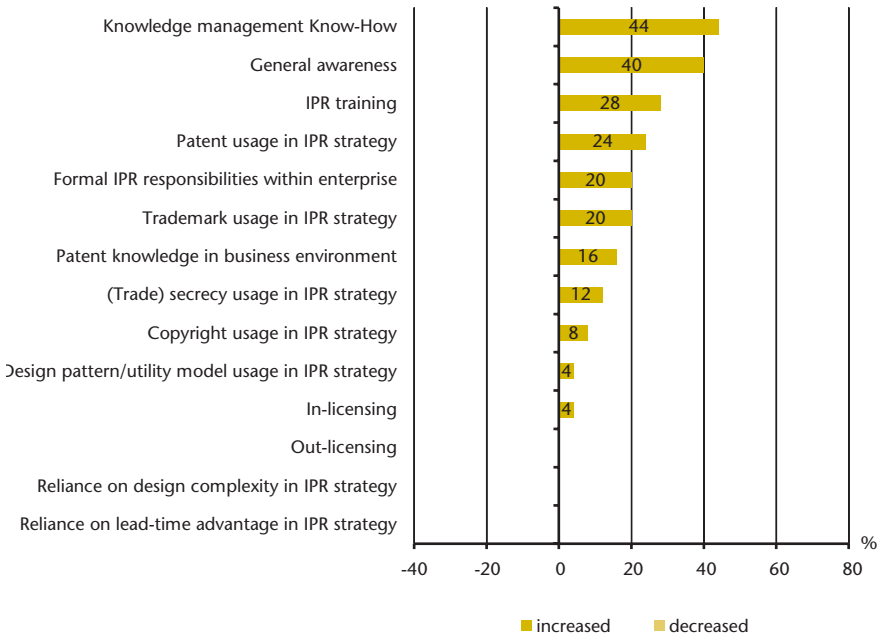
IP course users/attendants stated that they received information about the different services mostly through the DKPTO itself (72 %); 24 % received newsletters, 16 % found information on the internet. Personal recommendations were valued by 20 % of the users. Surprisingly, no user got to know about the service from agencies or heard about it on information days, conferences etc. Regarding PVSonline users, the internet and the DKPTO itself were considered as most important information sources. However, these results cannot be fully confirmed by service experts. Many users receive information about the service offerings via DKPTO's e-mail or newsletter service. It is very likely, as expert's state that companies signed up for such services while visiting DKPTO's information days.

The users/attendants of the IP course were quite satisfied with the service: all aspects (the competence of staff, the quality and relevance of the provided information, etc.) are graded with "1.6" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied). Furthermore, 76 % consider the extent of the service offerings to be adequate; 80 % state that the benefits are adequate to efforts – but only 12 % think that the benefits clearly outweigh the efforts. These findings stand in line with those found for the PVSonline users: all 10 users consider the extent of the service offerings to be adequate and think that the benefits are adequate to efforts.

Additionality of the service

In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

Graph 151 Behavioural additionality of the DKPTO offerings, percentage of respondents*), IP course users



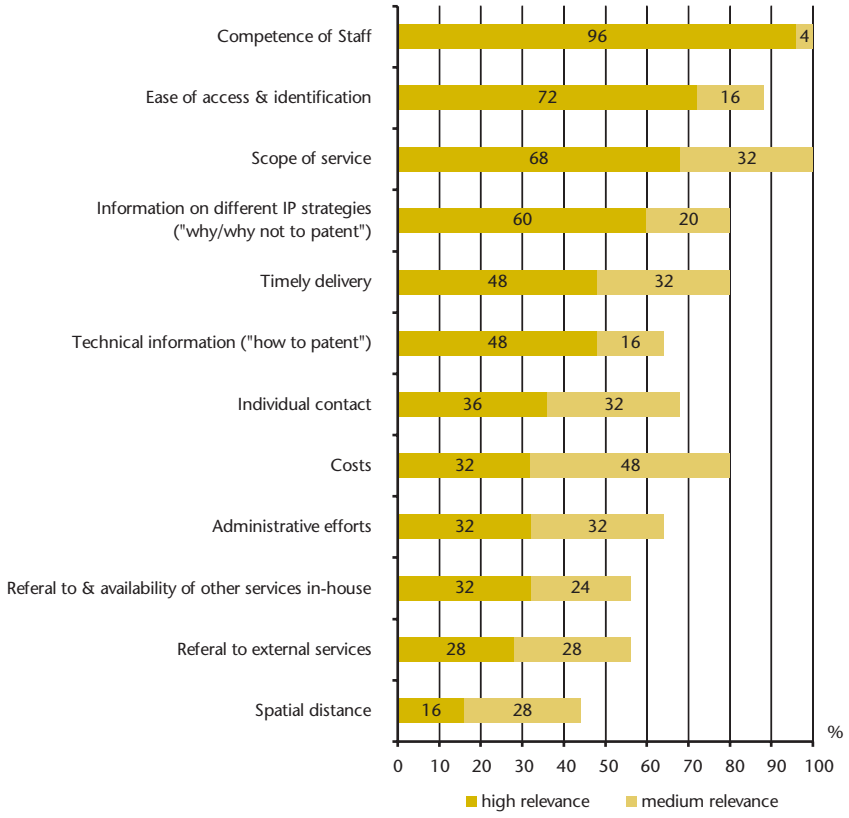
*) multiple answers allowed. Source: User Survey, n = 25

The IP course offered by the DKPTO was seemingly successful to incite changes in attitudes toward IPR protection (see Graph 151). The most significant changes took place in knowledge management know-how (increased for 44 %) and general awareness (increased for 40 %). On the other hand, attitudes towards informal IPR protection measures (i.e. reliance on design complexity and/or lead time advantage) did not change very much. It seems that informal IPR protection is not at the heart of the available service offerings (i.e. IP courses) although service experts claim that the courses do not focus solely on patent issues: difficulty level and content (i.e. information suitable for IPR beginners or for IPR experts) varies widely. Regarding PVSonline users, the most prominent change concerned the trade mark usage in the IPR strategy (increased for 4 out of 10 users).

All IP course users/attendants considered the competence of the staff involved in a service similar to the one offered the DKPTO as most important (for 96% of high, for 4 % of medium relevance) followed by the ease of identification (high relevance for 72 %, medium for 16 %) and the scope of the service (for 68 % of high and 32 % of medium relevance) (see Graph 152). A significant high relevance was also noted for information on different IP strategies ("why/why not to patent"). On the other hand, spatial distance seems not to be an important part of such a measure.

Competence of staff and timely delivery were identified by almost all PVSonline users (both for 80 % of high and 20 % of medium relevance) as key quality elements for a service comparable to the electronic access through PVSonline. Unsurprisingly for a service which is available on the internet, spatial distance is not a problem.

Graph 152 Key quality factors for a service comparable to the ones offered by the DKPTO, percentage of respondents, IP course users



*) multiple answers allowed. Source: User Survey, n = 25

14.3 Elements of good practice

The DKPTO can be considered as a very service oriented organisation with experienced staff who provide information, as expert's note, *"in a language that ordinary people understand"*. In particular, the service exhibits the following success factors (resp. good practice elements):

- Besides possessing a long experience as a government IPR agency (granting patents, registering trade marks, utility models and designs) the DKPTO offers a wide range of services and activities supporting enterprises, especially SMEs, to protect their technology and knowledge;
- Availability of complementary services;
- Easy user interface of the web site, together with the possibility to conduct remote patent searches;
- Experienced, highly skilled staff with an extensive technical and legal competence;
- Co-operation activities with relevant stakeholders and others engaged in IPR issues;
- Timely delivery, reasonable rates (fees);
- Quality evaluations are carried out to assess the effectiveness of the service offerings.

However, some shortcomings regarding the international orientation of the DKPTO were identified. Some experts argue that the DKTPO is probably too focused on Danish IPR issues and less internationally oriented. According to experts, companies will demand more and more IPR protection on a European-wide or international level in the future. The decreasing Danish design applications in favour of applications on a European level corroborate this trend.

15. Technology Network Service – Intellectual Property (TNS IP)

Country:		France
Original title:		Prestation technologique réseau propriété industrielle (RDT IP)
Target group:		SMEs
Coverage:		National
Category*:		(Pro-active) awareness raising measures/Public Relations
		Information Provision Services
		Training
	X	Customized in-depth consulting and advisory services/ points
	X	Finance & Legal Framework
*classification system defined by the Austrian Institute for SME Research		

15.1 The Technology Network Service – Intellectual Property (TNS IP) in a nutshell

The Technology Network Service (TNS) serves as a nation-wide technological and innovation support system aiming to provide assistance in innovation projects, familiarise SMEs with intellectual property rights and, in case of the TNS Intellectual Property (TNS IP), offer incentives for companies to pursue IPR protection ("First Patent" TNS). Provided by the French innovation agency "Oséo innovation" (formerly known as ANVAR), the TNS acts as part of the French RDT-Network (Technology Development Network/Réseaux de développement technologique), which consists of other dedicated technology and innovation support agencies: DRIRE (Industry, research and environment regional direction), ARIST (regional strategic and technology information agencies) and CRIT (innovation and technology transfer regional centres).

The RDT-Network aims to identify the innovation potential of companies and to provide accurate guidance regarding innovation management and/or IPR protection. The network is used mostly to get into contact with (local) SMEs and inform them about the latest development in innovation (protection), to offer an overview on IPR and to promote available support services in this field. In case of the TNS, the network offers advice and assistance in innovation management and protection, particularly measures to identify technological needs (i.e. helping with scientific feasibility studies, implementing technology intelligence, etc.).

Moreover, as a specialised extension of TNS, the Technology Network Service – Intellectual Property (TNS IP) offers an IPR support measure focusing on the patent application process, the so-called "First Patent" TNS. This service subsidises an audit of the enterprise's strategy with regard to intellectual property issues which covers around 75 % of the total costs with a ceiling of € 5,000. The subsidy is paid directly to the consultant in charge of the audit.

TNS operates nationwide through regional centres and is not limited in duration. Dedicated to all types of SMEs, the main user group are micro-enterprises: In 2005, 92 % of all participating enterprises had less than 50 employees, 50 % of them had less than 10. The most explaining factor is that SMEs are only eligible if they have not applied to a national technology service in the two previous years. Furthermore, the TNS tries to reach rather traditional industry's SMEs (textile, wood, etc.) than SMEs from the Hi-Tech sector. No restrictions are in place for certain industries or technology fields.

Background and resources

In 1989, the RDT-Network was established with the aim to raise awareness towards innovation and technology development issues in France. The TNS was set up as part of a policy at national level and was one of the first services offered within the RDT-Network. The rather long preparation time of around 30 months was also due to a series of studies carried out, the results of which were relevant for the design of the network (i.e. François Bouvier, 1988). Regarding target figures, no specific indicators were set for this service.

Today, TNS is offered and financed by Oséo Innovation, an innovation agency in charge of innovation promotion among SMEs at national level. Oséo Innovation employs around 400 people and operates within the umbrella group Oséo (2.000 people) which provides also other business support measures and services. The service is partly implemented by in house staff at Oséo which coordinates the network tasks and 1 to 2 persons in each regional antenna. In 2006, Oséo's total budget dedicated to overall business support amounted to € 270 mio, around € 7,5 mio were accounted for the TNS; € 1,5 mio were allocated for "First patent" TNS.

The RDT-Network is available in 22 regions; these regional antennae manage a network of around 1,300 experts recruited from various institutions, such as DRIRE (industry, research and environment regional direction), ARIST (regional strategic and technology information agencies), CRIT (innovation and technology transfer regional centres) and universities. Regional experts promoting TNS services are recruited on a voluntary basis. They support the regional antennae by identifying the needs and wants of SMEs. Once identified, a series of TNS services is offered ("1st patent, etc.). In addition, an expert is chosen for the implementation of the measure (i.e. patent applications). In other words, the regional antennae serve as broker between SMEs and the IPR experts. From the enterprises' point of view, regional antennae reduce searching costs. Likewise, experts have the advantage of reducing marketing und public relation costs.

Experts promoting the service possess diverse backgrounds and training in relevant technological and innovation protection issues. The fact that these experts are actually employed at well-known innovation support institutions is supposed to be sufficient to prove their professional qualities.

There are no specific marketing activities set for TNS: promotion is mainly performed by personal/pro-active contacting and using the existing RDT-Network for marketing and public relation purposes. Each regional network is in charge of the promotion of the available measure(s). According to service specialists, the 1,300 experts working for TNS visit around 20,000 enterprises every year.

Modes of operation

Members of the RDT-network visit local enterprises, especially SMEs to get to know the current business situation and to offer advice on innovation management and protection and promote available support services. If an enterprise gets interested and wants to go deeper into the subject of IPR protection or already knows (i.e. through the analysis of IP Prédiagnosis; please refer to the case study "IP Prédiagnosis", p. 51) that IP protection has to be implemented, the adviser offers to benefit from the "First patent" TNS.

The service offered by the TNS consists of subsidising an (technical/legal) audit of the enterprise's strategy with regard to intellectual property issues. First, an application form has to be filed out by the SMEs owner which is sent to the network's regional antenna. The application is normally accompanied by a letter from the adviser. An answer should be received within 8 days. It has to be noted hat the "First patent" service can be used only by SMEs that never filed a patent application before.

If the application is successful, 3–4 IPR experts, usually specialized in the enterprise's sector of activity are invited to present cost estimates for an audit. For "First patent"

TNS, the cost estimation may depend on the complexity of the patent, the degree of legal and technical advice etc. plus fees the experts usually charge.

TNS services' audit can concern a variety of topics: technology intelligence organisation, IPR exploitation strategy, etc. and normally lasts between 4 and 5 days.

The enterprises can choose their preferred experts (depending on the price, the notoriety of the expert, his knowledge of the sector of activity etc.) from a list of registered members. Only qualified IPR experts can be in charge of the implementation of "First patent" TNS; one criterion is that they have to be registered on a national list governed by the National Industrial Property Institute (INPI). The organisation that actually provides the service is paid both by the SME and by the technology development network. The enterprise pays 25 % at the beginning and the remaining 75 % is directly paid by Oséo Innovation to the expert in charge of the actual implementation of the service. The maximum amount covered is € 5,000, but as experts state, the cost of a first patent is on average around € 4,000 to € 4,500.

The complementary approach of the RDT-network to offer a set of dedicated innovation support services enables SMEs to benefit from these professional services that cumulatively build on each other to meet their needs. The "First patent" TNS can be seen as such a complementary service. After an industrial property pre-diagnosis, provided by the National Industrial Property Institute (INPI) where IPR experts discuss the company's situation with its manager and raise awareness towards IPR protection possibilities (for detailed information, please refer to the case study "IP Prédiagnosis", p. 51), enterprises may decide that they need to register a patent. In this light, the "First patent" TNS complements the analysis of IP Prédiagnosis to help enterprises with their patent registration by offering technical and financial support.

Evaluation and Performance

Quality assurance is mainly carried out through regional interim evaluations every second year. In addition, to ensure that the service offerings are provided and presented adequately to the target group, Oséo strongly focuses on the quality of the expert recruiting process. Within the network, the personnel giving IPR advice have to have a certain profession. Regarding formal IPR protection, assistance for i.e. patent applications can only be given by qualified IPR professionals.

No dedicated indicators are set to measure the performance of the service. However, some indication can be derived from a study published in 2005 which stated that a large number of SMEs benefited from the support of Oséo-ANVAR & RDT for their patent application. It should be noted that in the course of this study, no specific IPR support service was mentioned by the surveyed SMEs. However, this finding underlines the global importance of the innovation support from Oséo. In addition, the satisfaction rate is considered as performance indicator for the service. As experts note, the service is very much appreciated among SMEs and shows a high satisfaction rate.

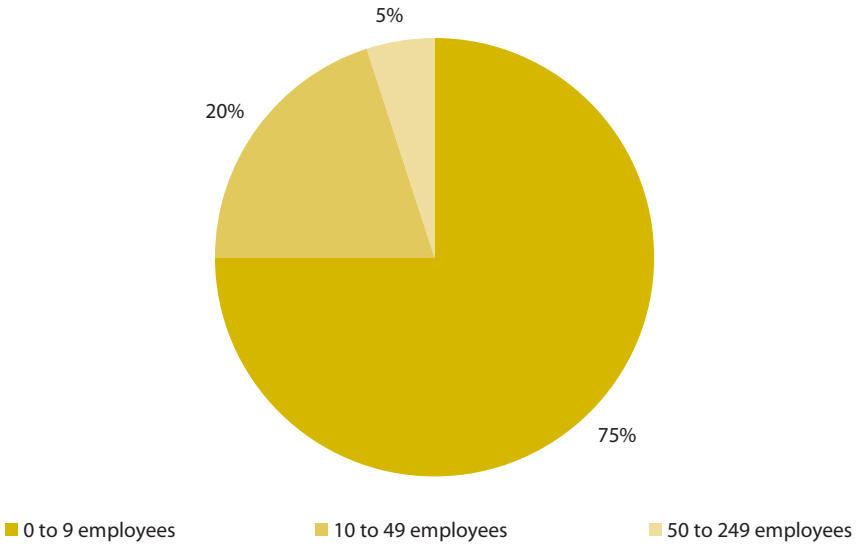
15.2 The user's view

In order to get an idea on how the service is perceived by its users and customers, a user survey was carried out in the scope of the underlying benchmarking study, the results of which are presented below.

Characteristics of the user group

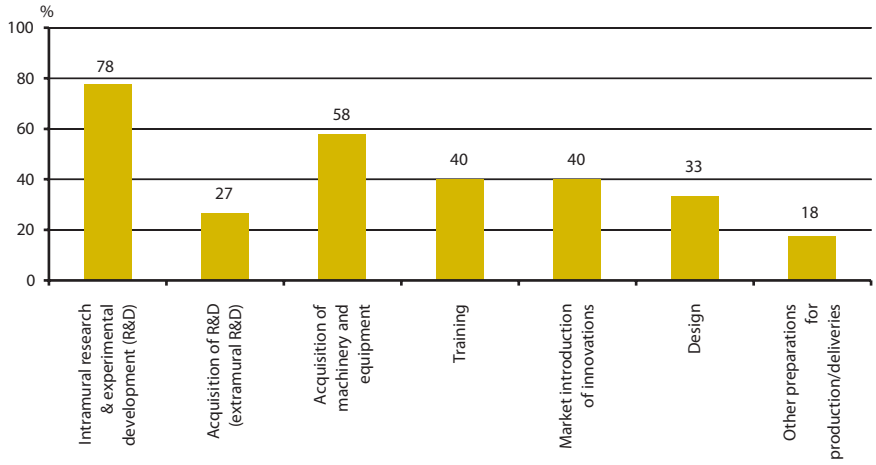
50 companies were surveyed about their experiences with TNS. All companies interviewed used the "1ere brevet/ First patent". Due to the close relationship with "IP Prédiagnosis" (see the corresponding case study) and the complementary structure and function of these two support services, the results of both user surveys are quite similar.

Graph 153 TNS IP–Company Size distribution in interview sample, 2005, percentage of respondents



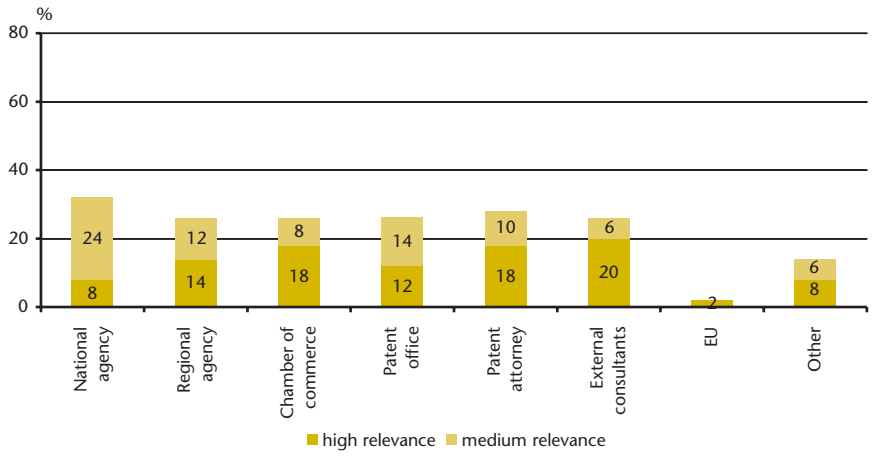
Source: User Survey, n = 50

Graph 154 TNS IP–Innovation activities in interview sample, 2005, percentage of respondents



*) multiple answers allowed. Source: User Survey, n = 50

Graph 155 TNS IP–Usage of different service providers by SMEs, percentage of respondents*)



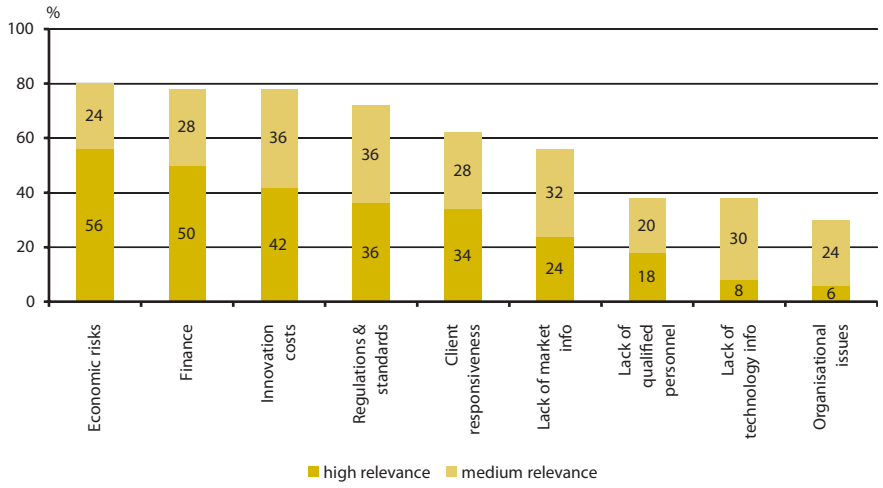
*) multiple answers allowed. Source: User Survey, n = 50

The distribution of the TNS user sample confirms that the service targets mostly micro-enterprises: 75 % of the SMEs in the sample have at most 9 employees; 20 % have 10 to 49 employees; only 5 % are larger companies with up to 249 employees (see Graph 153).

Looking at the development activities, the study reveals that TNS users were very innovative during the last years (see Graph 154). Between 2003 and 2005, 68 % of the service users introduced new or significantly improved products onto the market. During the same time, more than 36 % delivered product innovations to customers. As concerns R&D, 78 % of the service users conducted intramural R&D. In addition, 58 % of the surveyed users were engaged in the acquisition of machinery and equipment.

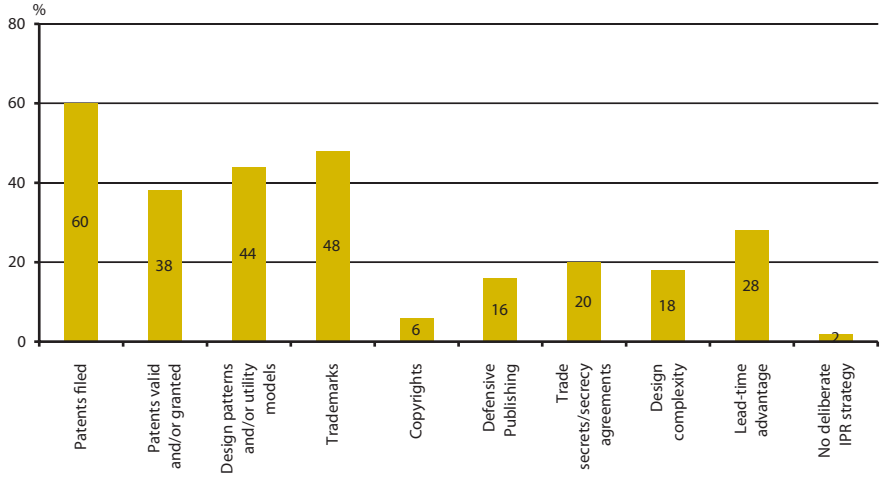
Between 2003 and 2005, TNS users made frequent use of external consultants (20 %), patent attorneys (18 %) and the chamber of commerce (18 %; see Graph 155). The high usage of patent attorneys underlines – as with other services throughout Europe – the importance of this profession for IPR service provision. By contrast, the rather high share of external consultants used seems to relate to the fact that the service supports the usage of external experts by offering financial help for an (technical/legal) IP audit.

Graph 156 TNS IP–Hampering factors for innovations, 2003 to 2005, by SMEs, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 157 TNS IP–IP protection methods employed by service users, 2003 to 2005, percentage of respondents*)



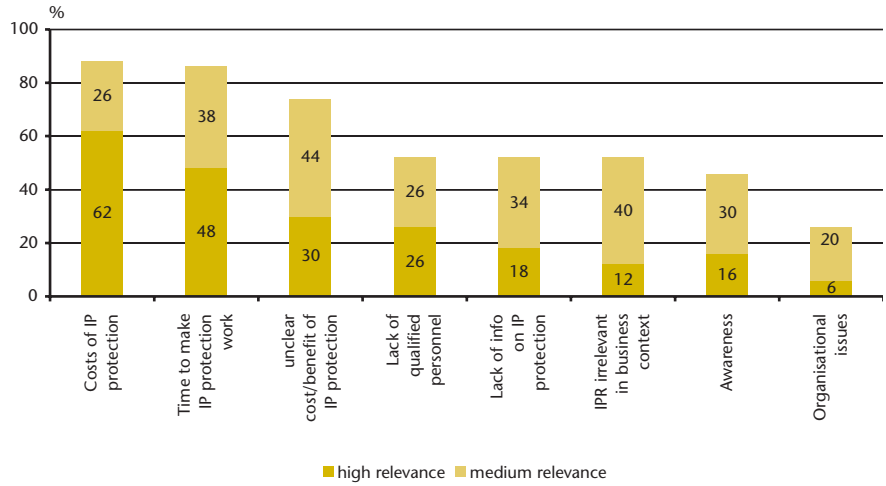
*) multiple answers allowed. Source: User Survey, n = 50

A high number of companies experienced hampering factors for innovation during the past years (see Graph 156). The rankings towards the single aspects is very comparable to similar IPR support services: TNS users complain mostly about economic risks (for 56 % of high and 24 % of medium relevance), lack of financial resources (for 50 % of high and 28 % of medium relevance) and high innovation costs (for 45 % of high and for further 36 % of medium relevance). Other factors, i.e. regulations and standards or client responsiveness are also considered to be important.

TNS users employed a high number of formal IPR protection methods during 2003 and 2005 (see Graph 157). 60 % state that they filed for a patent in that time period; 38 % had a patent granted or valid. Moreover, 48 % used trade marks to protect their IP, 44 % design patterns/ utility models. Regarding informal IPR protection, 28 % tried to maintain a lead time advantage over competitors, 20 % used trade secrets and/or secrecy agreements; 18 % relied on the complexity of design.

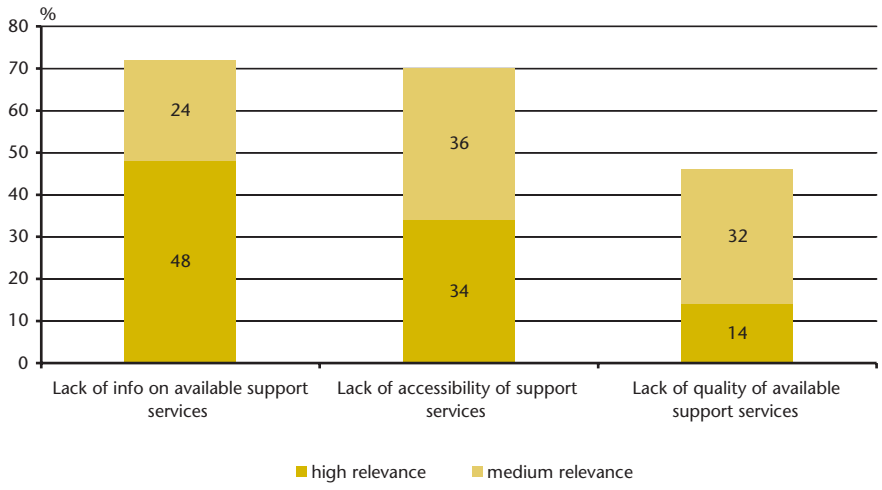
For TNS users, costs, time issues and unclear cost/benefits of IP protection represent the main internal barriers for using IPR methods (see Graph 158). It can be assumed that the reason why general awareness is considered less relevant is simply that TNS offers complementary services to those companies which are already aware of their IPR.

Graph 158 TNS IP–(Internal) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 159 TNS IP–(External) barriers to using IP protection mechanisms, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

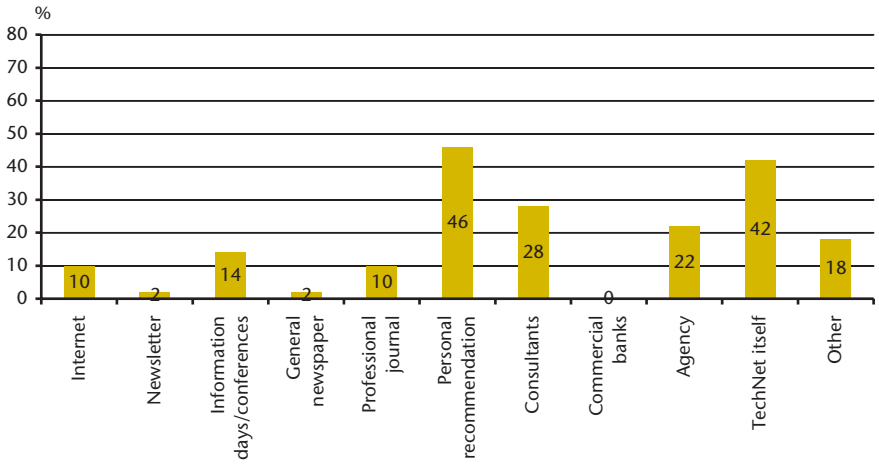
The overall understanding of IPR issues is provided by services like "IP Prédiagnosis"; if companies after such an analysis feel that the best way to protect their IP is filing for a patent, the next logical step would be the usage of "First Patent" TNS.

External barriers are perceived to be significant obstacles among TNS users. The lack of information on available support services (high relevance for 48 %, medium for 24 %), the lack of accessibility (for 34 % of high and 36 % of medium relevance) and the lack of quality of available external support services (for 14 % of high and 32 % of medium relevance) show, compared to other IPR support services, high relevance rates and point to little visibility of the service with the user group (see Graph 159). But then again, TNS (and also IP Prédiagnosis) seem to belong to a class of services which try to reach out to companies (i.e., look for them) which have otherwise little knowledge about support services in the field of IPR – and for those companies, which are not actively looking for support themselves, external barriers are perceived to be of higher relevance.

User reach-out and satisfaction levels

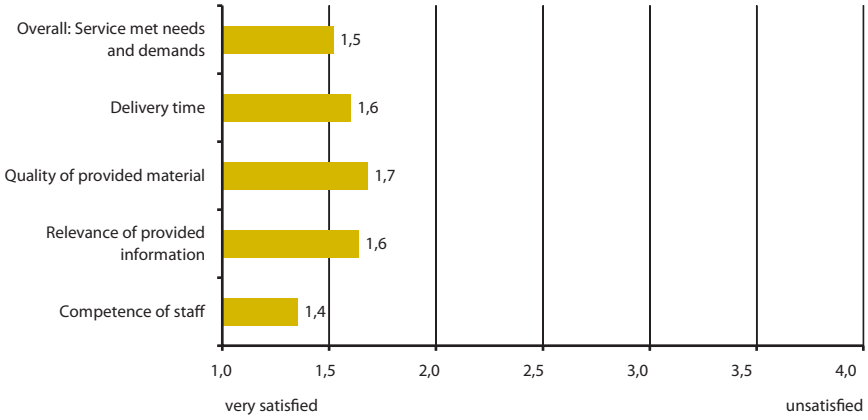
Unsurprisingly, almost half of the TNS users got to know about the service through personal recommendations, 42 % heard about TNS through the service providing organisation itself (the latter again indicating the pro-active role of the TNS service) (see Graph 160). In addition, 28 % also gathered information through consultants and 20 % from agencies. The internet and classical media were ranked rather low

Graph 160 TNS IP–Information channels, by which users got to know about the service, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Graph 161 TNS IP–Satisfaction levels with different aspects of service provision, arithmetic means of grades given by respondents



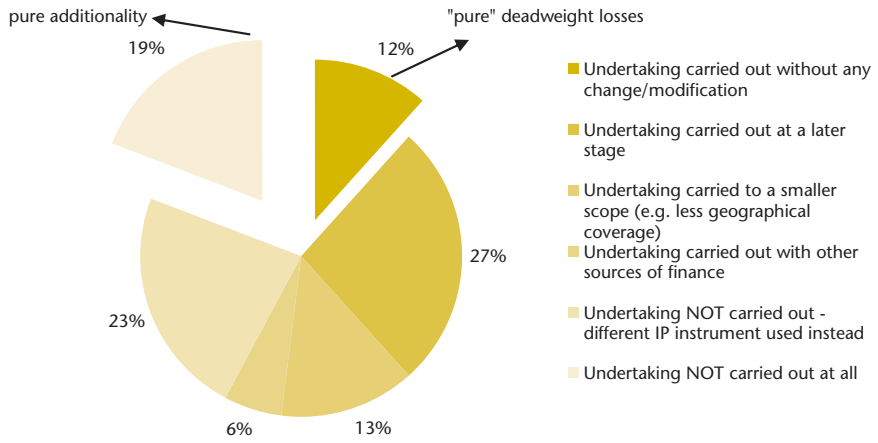
*) multiple answers allowed. Source: User Survey, n = 50

among the available information channels. These findings fit the overall picture of the promotional activities of TNS.

TNS users were, on average, satisfied with the service: all aspects (the competence of staff, the quality and relevance of the provided information, etc.) are graded with "1.7" or better, on a scale from 1 (very satisfied) to 4 (unsatisfied). Furthermore, the service offerings are considered to be adequate for around 84 % of the users surveyed (see Graph 161).

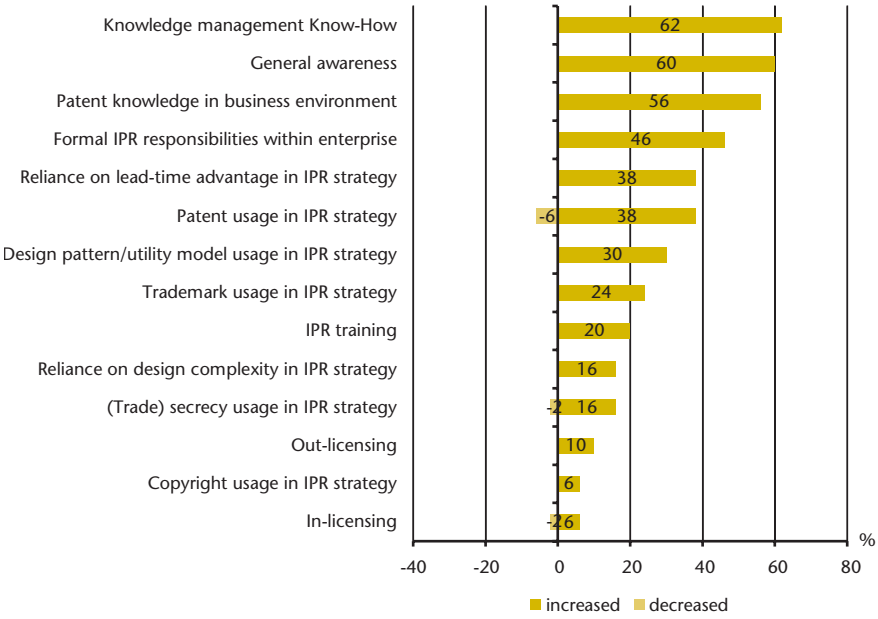
Spatial distance does not seem to be a problem; 63 % claim administrative burdens to be acceptable when using the service – 29 % think they are actually quite low. Overall, 49 % of the enterprises state that the benefits of using the service clearly outweigh the efforts; 43 % think that the benefits are adequate to the efforts.

Graph 162 TNS IP–Additionality of the financial subsidy, percentage of respondents



*) multiple answers allowed. Source: User Survey, n = 50

Graph 163 Behavioural additionality of the TNS offerings, percentage of respondents*)



*) multiple answers allowed. Source: User Survey, n = 50

Additionality of the service

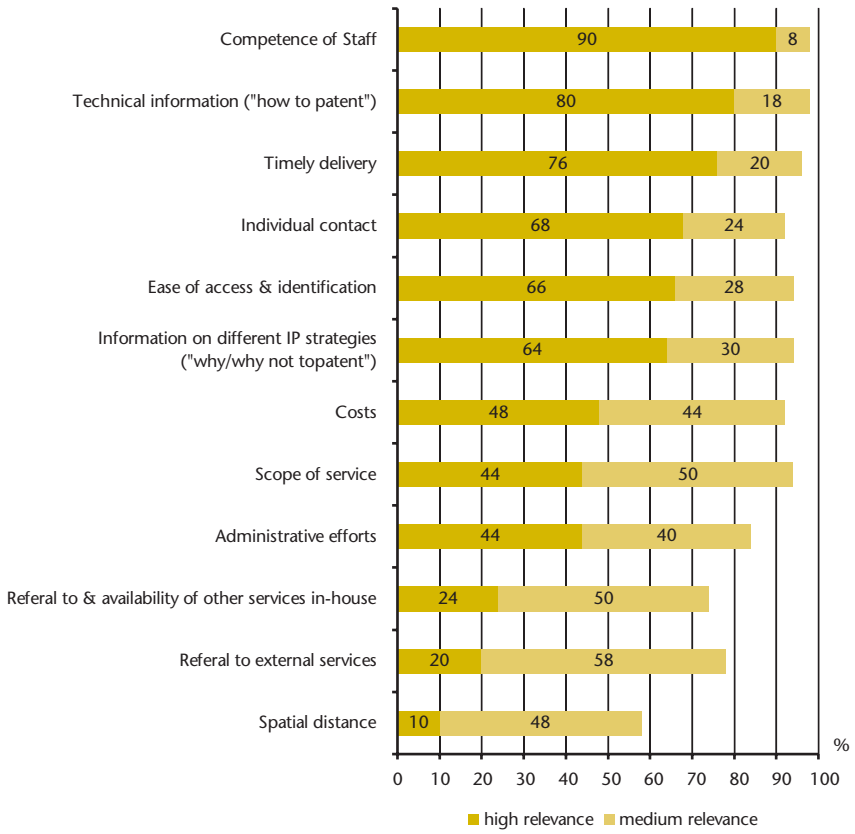
In order to answer the question whether a support service works or does not work, one should inquire into the added value of the service – i. e., what would have happened in case the service were absent. This is done in order to isolate a "net positive effect" as opposed to things which would have happened anyway, despite of the service. Similarly, also other types of changes incurred within the enterprise, as a result of using the service, are to be recorded (these types of changes are referred to as "behavioural additionality").

As can been seen from Graph 162, considerable additionality effects have been achieved using support provided by TNS: 19 % of the undertakings would not have been carried out at all in the absence of support from the service; 27 % of the users stated that they would have carried out the project but at a later stage. On the other hand, around 12 % would have carried out their patenting project, regardless of the service.

The most prominent changes in attitudes toward IPR protection among TNS users concern general knowledge management know-how followed by IPR awareness and patent knowledge in the business environment, which increased for 62 %, 60 % and 56 %, respectively (see Graph 163). The attitude towards formal and informal IPR protection methods has changed rather evenly. In this light, it seems that TNS has not just delivered information about the various forms of IPR usage but also about the usage of non-patent IP protection methods and its potential benefits.

The users surveyed underline the importance of the competence of staff (for 90 % of high, for 8 % of medium relevance) and, not surprising for a service providing technical consulting, information on technical issues (for 80 % of high, and for 18 % of medium relevance) when offering services similar to the one of TNS (see Graph 164). Timely delivery (high relevance for 76 %, medium for 20 %) and

Graph 164 Key quality factors for a service such as TNS IP, percentage of respondents



*) multiple answers allowed. Source: User Survey, n = 50. *15.3 Elements of good practice*

individual contact were also felt to be important for a service comparable to the one offered by TNS. Spatial distance and the referral to external services were considered of less significance for such a service.

15.3 Elements of good practice

TNS and the service portfolio provided by the RDT-network use complementary approaches towards the same overall objective: to offer advice and assistance in innovation support and also IPR protection. TNS aims to identify technological needs of SMEs and tries to raise overall awareness on the necessity to implement an IPR strategy. It is supposed to be a first step, a way for small enterprises to be able to protect their innovations.

The service exhibits the following success factors (resp. good practice elements):

- Working triangle of national coordination, regional operation and distributed networking;
- Promoted and implemented by qualified local experts (who have to go through a qualification scheme); the service benefits highly from the existing RDT Network;
- Integration into a dedicated business support organisation;
- Ease of use: fast and unbureaucratic handling of the measure;
- Link to other complementary IPR services (IP Prédiagnosis);
- Availability of financial grants, which cover a rather large number of days for consulting.

Very important for the success of the service was the already existing and well-established network which provides access to each region. Today, the service is well known and very much appreciated among SMEs at regional levels. On the other hand, the TNS can only exist because experts accept to promote and support the technology network service. Experts knowing the TNS system are worried that the lack of qualified personnel and limited budget resources could slow down promotional activities for TNS in the future.

Again, experts underline the fact that it is getting more and more difficult to find qualified consultants willing to work with SMEs, who are able to understand their sector of activity and their specific problems. Qualified experts are also needed to handle growing future topics, i.e. IPR counterfeiting. Other IPR services offered or promoted by the RDT-network, i.e. “IP Prédiagnosis” face similar issues.

In addition, it seems that follow up measures and long-term guidance to SMEs might be areas of improvement within the service package of TNS and/or the RDT-Network. Experts knowing TNS witness no accompaniment of the enterprise initiatives towards the implementation of a long-term IPR strategy. Overall speaking, these are further reasons for establishing a performance evaluation system, which could include actual missing sustainability indicators and may deliver the basis for assessing additionality effects.

ANNEX II – SUPPORT SERVICES ANALYSED

Benchmarking National and Regional Support Services for SMEs in the Field of Intellectual and Industrial Property

Table 10 Overview of public available IPR support services in Europe and Overseas

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
1		Australia	teQstart Investment Fund		Queensland Department of State Development, Trade and Innovation
2		Australia	BioStart		Queensland Department of State Development, Trade and Innovation
3		Australia	Innovation Start-Up Scheme (ISUS)		Queensland Department of State Development, Trade and Innovation
4		Australia	Ideas2Market		Australian Institute for Commercialisation Ltd
5		Australia	Knowledge Fund	Commercial. Grants	BusinessACT
6		Australia	Knowledge Fund	Proof of Concept Grants	BusinessACT
7		Australia	Knowledge Fund	Collaboration Grants	BusinessACT
8		Australia	BioBusiness Programmes	Non-Research Establishment Costs	NSW Department of State & Regional Development
9		Australia	BioBusiness Programmes	High Growth Bio Business	NSW Department of State & Regional Development
10		Australia	BioBusiness Programmes	Proof of Concept	NSW Department of State & Regional Development
11		Australia	Commercial Ready		AusIndustry
12		Australia	Pharmaceuticals Partnerships Programme (P3)		AusIndustry
13		Australia	R&D Tax Concession		Industry Research and Development (IR&D) Board (through AusIndustry) and the Australian Taxation Office (ATO)
14		Australia	Renewable Energy Development Initiative (REDI)		AusIndustry
15		Australia	Building Entrepreneurship in Small Business (BESB)	The Small Business Entrepreneurship Programme (SBEP)	AusIndustry
16		Australia	Building Entrepreneurship in Small Business (BESB)	Small Business Field Officers Programme (SBFO)	AusIndustry
17		Australia	Commercialising Emerging Technologies (COMET)		AusIndustry
18		Australia	Innovation Investment Fund		AusIndustry
19		Australia	Pooled Development Funds (PDF) Programme		AusIndustry
20	X	Australia	Smart Start		IP Australia
21		Australia	Bio Innovation SA	Biocatalyst Programme	State Government of South Australia
22		Australia	Market Ready Commercialisation Programme		State Government of Tasmania
23		Australia	Small Business Programme		State Government of Tasmania
24		Australia	Science, Technology, Innovation Initiative (STI Initiative)		State Government of Victoria
25		Australia	Information City	Mentor Capability Building Programme	Information City
26		Australia	Redcentre	Innovation Partnering Programme	Redcentre Australia
27		Australia	Australian Distributed Incubator (ADI)		Australian Distributed Incubator

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
28		Australia	Services offered by the Centre for Innovation and Technology Commercialisation		State Government of Victoria
29		Australia	Panel of Professional Advisors		Department of Innovation, Industry and Regional Development–Small Business Victoria
30	X	Australia	Government Intellectual Property Support Unit		State Government of Western Australia
31		Australia	VIP@iNNOVIC		VIP@iNNOVIC
32		Austria	Small trade loan	Patent loan action	aws–Austria Wirtschaftsservice GesmbH
33		Austria	Patent promotion		TIP Technologie- und Innovationspartner, Lower Austria Wirtschafts- und Tourismusfonds
34	X	Austria	Tecma–Technology Marketing Austria		aws–Austria Wirtschaftsservice GmbH
35		Austria	Seminar: Overview of Industrial Property Rights		Österreichisches Patentamt (Austrian Patent Office)
36	X	Austria	Serv.ip patent searches		Österreichisches Patentamt–serv.ip
37		Austria	"ideas.well.protected" Roadshow		Österreichisches Patentamt (Austrian Patent Office)
38	X	Austria	Technology Commercialisation Offensive		CATT Innovation Management GmbH
39		Austria	Technology and patent search		WISTO–Wirtschafts-Standort Vorarlberg Betriebsansiedlungs GmbH
40	X	Austria	Patent Service for SMEs		CAST–Center for Academic Spin-offs Tyrol
41		Austria	GEN-AU Genome Research in Austria		aws (Austria Wirtschaftsservice) / Federal Ministry for Education, Science and Culture (for new projects after 2005: GEN-AU internal IPR services)
42		Austria	AplusB Impulse Programme		FFG–Austrian Research Promotion Agency
43	X	Austria	Patent Consulting Day		Wirtschaftskammer (Austrian federal economic chamber)
44		Austria	"Innovative Companies"		Wirtschaftskammer (Austrian federal economic chamber)in cooperation with the Institute of Business Promotion (WIFI)
45		Austria	Innovation protection programme (IPP)		aws–Austria Wirtschaftsservice GmbH
46	X	Belgium	SME services of the Belgian office for intellectual property		Federal Public Service for Economy, SMEs, Self-employed and Energy
47		Belgium	SME services of the Institute for the promotion of Innovation by Science and Technology in Flanders		Instituut voor de aanmoediging van innovatie door Wetenschap & Technologie in Vlaanderen
48	X	Belgium	SME services of the the Brussels Enterprise Agency		The Brussels Enterprise Agency
49		Bulgaria	Center of Intellectual Property–BIA		Bulgarian Industrial Association (BIA)
50		Bulgaria	National Innovation Fund with the Ministry of Economy and Energy		Bulgarian Small and Medium Enterprises Promotion Agency

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
51		Bulgaria	SME services of the Patent Office of the Republic of Bulgaria		Patent Office of the Republic of Bulgaria
52		Bulgaria	Technology market		Joint effort between the Bulgarian Industrial Association (BIA), GIS Transfer Centre of the Bulgarian Academy of Sciences and the European Innovation Centre
53	X	Canada	Bank of Speakers		Canadian Intellectual Property Office
54		Canada	Business Development Officers		Canadian Intellectual Property Office
55		Canada	CIPO Web site		Canadian Intellectual Property Office
56		Canada	Databases	i.e. Canadian Patents Database, etc	Canadian Intellectual Property Office
57	X	Canada	IP Toolkit		Canadian Intellectual Property Office
58		Canada	"Stand out from your competitors" (Publication)		Canadian Intellectual Property Office
59	X	Canada	"Success Stories" (Publication)		Canadian Intellectual Property Office
60		Canada	Trade marks Database Tutorial		Canadian Intellectual Property Office
61		Canada	Trade show participation		Canadian Intellectual Property Office
62		Canada	Brochure: "What's in a name?"		Canadian Intellectual Property Office
63		Canada	Federal Partners in Technology Transfer (FPTT)	Flint Box	Federal Partners in Technology Transfer
64		Cyprus	SME services of the department of Registrar of Companies and official Receiver	The Intellectual and Industrial Property Section	Ministry of Commerce, Industry and Tourism
65		Czech Republic	Support of Innovation of Products, Technologies and Services–INNOVATION	no title specified, but costs related to certain IPR activities are also fundable	CzechInvest
66		Czech Republic	Support programme for dynamically developing small and medium entrepreneurs–DEVELOPMENT	no title specified, but costs related to certain IPR activities are also fundable	CzechInvest
67		Czech Republic	Multipurpose Support Programme for Small and Medium-size Entrepreneurs–MARKET	no title specified, but costs related to certain IPR activities are also fundable	Czech-Moravian Guarantee and Development Bank
68		Czech Republic	Support programme for dynamically developing small and medium entrepreneurs–PROGRESS	no title specified, but costs related to certain IPR activities are also fundable	Czech-Moravian Guarantee and Development Bank
69		Czech Republic	Programme of support of Businesses in the Initial Development Phase–CREDIT	no title specified, but costs related to certain IPR activities are also fundable	Czech-Moravian Guarantee and Development Bank
70		Czech Republic	Programme of support of Persons Starting a Businesses–START	no title specified, but costs related to certain IPR activities are also fundable	Czech-Moravian Guarantee and Development Bank
71	X	Czech Republic	The web-site of the Industrial Property Office of the Czech Republic		The Industrial Property Office of the Czech Republic (IPO CR)

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
72	X	Czech Republic	"Technical solutions and their legal protection" (Publication)		The Industrial Property Office of the Czech Republic (IPO CR)
73		Czech Republic	"Trademarks and their legal protection" (Publication)		The Industrial Property Office of the Czech Republic (IPO CR)
74		Czech Republic	"Designs and their legal protection" (Publication)		The Industrial Property Office of the Czech Republic (IPO CR)
75		Denmark	Guidance of SME enterprises and entrepreneur	Business Centres	Business centre, i.e. Bornholms, Nordsjælland, Fyn, etc
76		Denmark	Guidance of SME enterprises and entrepreneur	EVU Centre	EVU Business centre; Copenhagen and Frederiksberg
77	X	Denmark	Information Services of the DKPTO (Help for registration and legal advice services)		Danish Patent and Trademark office
78		Denmark	Internet portal (www.techtrans.dk)		The National Network for Technology Transfer
79	X	Denmark	Public Service for Inventors		Center for Idé og Vækst (Centre for Ideas and Growth/The Invention Centre)
80		Estonia	R&D Financing Programme		Foundation Enterprise Estonia (business support organisation operating under the governance of the Ministry of Economic Affairs and Communications).
81		Estonia	Consulting Programme (EAS)		Foundation Enterprise Estonia (business support organisation operating under the governance of the Ministry of Economic Affairs and Communications).
82		Estonia	SME services of the Estonian Patent Office		Estonian Patent Office
83	X	Estonia	Patent Library		Estonian Patent Library
84		Estonia	Support for industrial property item patent protection		Tallinn City Government, Tallinn City Enterprise Board
85		Finland	The Finnish National Fund for Research and Development (Sitra)	Innovation programme 2004-2008	The Finnish National Fund for Research and Development (Sitra)
86		Finland	IPR University Center		IPR University Center
87	X	Finland	SME services of the Foundation for Finnish inventions		Keksintösäätiö (Foundation for Finnish inventions)
88		Finland	National Board of Patents and Registration of Finland		National Board of Patents and Registration of Finland
89		Finland	TEKES–Finnish Funding Agency for Technology and Innovation	TULI–From Research to Business	Finnish Science Park Association TEKEL
90		Finland	Employment & Economic Development Centre/ Enterprise Services	Invention representative	Employment & Economic Development Centre
91		Finland	Gramex-copyright society		Gramex ry
92		Finland	Employment & Economic Development Centre/ Enterprise Services	ProductStart	Employment & Economic Development Centre
93		Finland	TEKES- Finnish Funding Agency for Technology and Innovation	R&D Capital loan	TEKES

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94	X	Finland	Ideapilot		National Board of Patents and Registration of Finland
95	X	France	IP Prédiagnosis		INPI–Institut national de la propriété industrielle in co-operation with OSEO Anvar
96	X	France	Technology service network intellectual property		OSEO Anvar and RDT (Réseaux de diffusion technologique)
97		France	Intellectual property strategic audit		INPI–Institut national de la propriété industrielle in co-operation with OSEO Anvar and RDT (Réseaux de diffusion techno-logique)
98	X	France	Technology network service–First patent application		INPI–Institut national de la propriété industrielle in co-operation with OSEO Anvar and RDT (Réseaux de diffusion technologique).
99		France	Research Tax Credit		Ministère délégué à l'enseignement supérieur et à la recherche / Direction de la technologie
100	X	France	Regional strategic and technology information agencies		Chambres régionales de commerce et d'industrie (CRCI) with the support of the Ministry in charge of industry
101		Germany	SME services of the INSTI-Innovation Action		INSTI e.V.
102	X	Germany	INSTI-SME-Patent Action		INST Network Members
103		Germany	InnovationMarket		INSTI-Project Management: Institut der deutschen Wirtschaft (IW) Köln
104		Germany	INSTI-Commercialisation Action		Network of INSTI partners
105		Germany	"With the Patent to Success" (Publication)	Lessons Learned and Results of the Project SME Patent Action	Editor: Institut der Deutschen Wirtschaft (IW) Köln, INSTI Projektmanagement
106		Germany	SME services of the INST-Innovation e.V.		INST-Innovation e.V.
107		Germany	Fraunhofer Patent Centre for German Research		Fraunhofer Patent Centre for German Research
108	X	Germany	Fraunhofer Service for Inventors		Fraunhofer Patentstelle für die deutsche Forschung (Fraunhofer Patent Centre for German Research)
109	X	Germany	Patent and Commercialisation Agencies		Germany-wide network; Example: TransMIT Gesellschaft für Technologietransfer mbH
110	X	Germany	Patent information centres	PIZ Stuttgart	Germany-wide network of 28 patent information centres
111		Germany	BMBF-Patentserver		Federal Ministry of Education and Research (BMBF, Bundesministerium für Bildung und Forschung, Referat 516)
112		Germany	Patent-/Markenplaner Online		Federal Ministry of Economic Affairs and Technology (Bundesministerium für Wirtschaft und Technologie, BMWi) in co-operation with A2C Software AG
113		Germany	RALF-License Information		Deutsches Patent- und Markenamt (German Patent and Trademark Office)
114		Germany	PaTrAS (Patent and Trademark Application System)		Deutsches Patent- und Markenamt (German Patent and Trademark Office)
115		Germany	Financial support for costs of proceedings (legal aid)		Deutsches Patent- und Markenamt (German Patent and Trademark Office)
116	X	Germany	Initial Consultancy for Inventors		varying–Example: AGIL GmbH Leipzig

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117		Germany	Patent Attorney Search		PAVIS e.G. (co-operative of patent attorneys)
118		Greece	SME services of the Hellenic Industrial Property Organisation		Hellenic Industrial Property Organisation
119	X	Greece	"Competitiveness Operational Programme", Measure 4.4	4.4.6: Patent Dissemination Programme	Hellenic Industrial Property Organisation
120		Greece	"Competitiveness Operational Programme", Measure 4.3	"Techno-brokerage" Programme	General Secretariat for Research and Technology (GSRT) of the Ministry of Development
121		Greece	"Competitiveness Operational Programme", Measure 4.6.	Support of Hellenic Technology Clusters in Microelectronics	Hellenic Technology Clusters Initiative (HTCI) of the Athena Research and Innovation Center in Information, Communication and Knowledge Technologies
122		Greece	"Competitiveness Operational Programme", Measure 2.2., Action 2.2.3	2.2.3.1.: "Promotion of Cluster of Tourism SMEs"	Greek National Tourism Organisation, Ministry of Tourism
123	X	Hungary	Intellectual Property Information services	VIVACE (Action Plan Promoting Industrial Property Competitiveness of Entrepreneurs) Programme	Hungarian Patent Office–Centre for Industrial Property Information and Education
124	X	Hungary	Innovation Directorate of University of Szeged, Biopolisz		University of Szeged
125		Hungary	SME services of the Technology Transfer Office		Semmelweis University
126	X	Hungary	National intellectual property protection information network		Magyar Szabadalmi Hivatal–Hungarian Patent Office
127		Hungary	Central Trans-Danubian Regional Development Agency Non-profit Company	Gabor Baross Regional Innovation Programme	National Office for Research and Technology
128		Hungary	SME services of the Advopatent Office of Patent and Trademark Attorneys		Advopatent Office of Patent and Trademark Attorneys and Hungarian Chamber of Patent Attorneys
129		Hungary	Securing Patents and Inventors / Association of Hungarian Inventors	Genius Europe, International Exhibition of Inventions	Association of Hungarian Inventors (MAFE) / Magyar Feltalálók Egyesülete
130		Hungary	SME services of the Agency for Research Found Management and Research Exploitation	Ányos Jedlik Programme	National Office for Research and Technology
131		Hungary	SME services of the Hungarian Investment and Trade Development Agency		Hungarian Investment and Trade Development Agency
132		Hungary	DETECT-it		Innostart Alapítvány
133		Hungary	SEED-REG (INTERREG IIIC) Project		Innostart Nemzeti Üzleti és Innovációs Központ (Innostart National Business and Innovation Center
134		Hungary	TRANSMES		Innostart Nemzeti Üzleti és Innovációs Központ (Innostart National Business and Innovation Center)
135		Hungary	SME services of the Hungarian Chamber of Patent Attorneys	Board of Supervision	Hungarian Chamber of Patent Attorneys

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136		Hungary	SME services of the Corvinus Risk Fund Manager Ltd.		Gazdasági és Közlekedési Minisztérium
137		Hungary	SME services of the Hungarian Innovation Union/Hungarian Association for Innovation		Magyar Innovációs Szövetség/Hungarian Association for Innovation
138	X	Hungary	Support for international registration of Hungarian inventions		Ministry of Economy and Transport
139		Hungary	Politics of Science and Technology		National Office of Research and Technology
140		Hungary	IP Consultancy		Danubia Patent Office / Solvo Biotechnology Plc.
141		Hungary	SME services of the S.B.G. & K Patent and Law Offices		S.B.G. & K Patent and Law Offices
142		Hungary	Product development, innovation management	Screening, novelty search related to patents	Central Hungarian Innovation Centre NpC
143	X	Ireland	Intellectual Property Assistance Scheme		Enterprise Ireland
144		Ireland	Higher Education Sector Patent Protection Scheme		Enterprise Ireland
145	X	Ireland	SME services of the Irish Patents Office	Web site of Irish Patents Office	Irish Patents Office
146		Ireland	Tech Search		Enterprise Ireland
147		Italy	Renewable Innovation Fund–DECREE 16/01/2001	Article 5	Ministry for Economic Development
148		Italy	Unified Support Package		Ministry for Economic Development
149		Italy	SME services of the Institute for Industrial Promotion (IPI)	Support Programme for IP	Istituto per la Promozione Industriale (IPI)
150	X	Italy	Italian Network for Innovation Diffusion and Technology Transfer	IP Web Portal	RIDITT
151		Italy	AIPPI (International Association for IP Protection)		AIPPI
152	X	Italy	INGENIO		Finlombarda S.p.A.
153		Italy	NETVAL- Italian University Network for the Valorisation of Research		NETVAL is a network to which most Italian university partecipate through their Technology Transfer Offices. So far it has been working in the form of an informal network, but it will soon be transformed into an association.
154	X	Italy	INFOBREVETTI (INFOPATENTS) Network of the centres of information for the diffusion of the patent culture		INFOBREVETTI is the network, managed by Unioncamere, the Association of Italian Chambers of Commerce
155	X	Japan	MEXT 34 special University IPR Divisions		MEXT (Ministry of Education, Culture, Sports, Science and Technology
156		Japan	Fusion of research activity to bring to Patent, Design, Trademark		AIST National Institute of Industrial Science and Technology
157	X	Japan	Loans for protection of IPR and using IPR as collateral		Development Bank of Japan

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158		Japan	Loans to SMEs and micro local businesses in Okinawa		The Okinawa Development Finance Corp.
159		Japan	Business loans to Micro and SMEs who have difficulty obtaining loans from private financial institutions.		National Life Insurance Corporation
160		Japan	Entrusted loans to Agriculture, Forestry and Fisheries. Financial Corporation transferred to local government for public forest maintenance and pasture improvement		JFM Japan Finance Corporation for Municipal Enterprises
161	X	Japan	Shoko: Chukin Bank Network	Start-up, Innovation and Revitalisation	The Central Cooperative Bank for Commerce and Industry: Shoko-Chukin Bank
162		Japan	SME services of the Japan Patent Office	Support Schemes for SMEs	Japan Patent Office
163		Latvia	Legal protection of registrable intellectual property		Patent office of the Republic of Latvia
164	X	Liechtenstein	Information services regarding Intellectual Property		Amt für Volkswirtschaft der Liechtensteinischen Landesverwaltung (Office of Economics of the Liechtenstein public administration)
165	X	Liechtenstein	Patent Library		Liechtensteinische Landesbibliothek
166		Lithuania	Information on protection and registration of patents, trademarks, service marks and industrial design		Lietuvos smulkaus ir vidutinio verslo plėtros agentūra (Lithuanian Development Agency for Small and Medium Sized Enterprises–SMEDA)
167		Lithuania	SME services of the National Industrial Property Protection Office		Lietuvos Respublikos valstybinis patentų biuras (The State Patent Bureau of the Republic of Lithuania)
168	X	Lithuania	Enhancement of Innovation and Competitiveness Programme	Financial Support for Compensating the Expenses Related to Obtaining a Patent	Lietuvos verslo paramos agentūra (Lithuanian Business Support Agency)
169		Lithuania	SME services of the Patent Information Centre		Lietuvos technikos biblioteka (The Technical Library of Lithuania)
170		Lithuania	SME services of the Innovation Relay Centre (IRC)	Information about intellectual property protection	Lietuvos inovacijų centras (Lithuanian Innovation Centre)
171		Lithuania	Services offered by the InfoBalt Copyright Agency		Asociacija 'InfoBalt' ('InfoBalt' Association)
172		Lithuania	Services offered by the Agency of Lithuanian Copyright Protection Association		Lithuanian Copyright Protection Association
173		Lithuania	Services offered by the Intellectual Property Commission of the International Chamber of Commerce (ICC) Lithuania		Tarptautiniai prekybos rūmai ICC Lietuva (ICC Lithuania)
174		Lithuania	Information about EU country compulsory product requirements	Information about intellectual property protection	Lietuvos ekonominės plėtros agentūra (Lithuanian Development Agency)

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175	X	Lithuania	The Programme for Creating Public Awareness about IPR		Ministry of Culture of the Republic of Lithuania
176	X	Luxembourg	Technology Watch Center–Center for Public Research Henri Tudor		Center for Public Research Henri Tudor
177	X	Luxembourg	SME services of the Department for IPR–Ministry for Economy and Foreign Trade		Ministry for Economy and Foreign Trade
178		Luxembourg	SME services of Luxinnovation–National Agency for innovation and research		Luxinnovation GIE
179		Luxembourg	LIIP-Project (Linking Innovation and Industrial Property)		Center for Public Research Henri Tudor
180		Malta	Information Support Service		Industrial Property Registration Directorate
181	X	Norway	SME services of the Norwegian Patent Office		The Norwegian Patent Office organised under the Ministry of Trade and Industry
182		Norway	Bedin Company Information		VINN on behalf the Ministry of Trade and Industry
183		Norway	SME services of the Oslo Patentkontor AS (Oslo patent office AS)		Oslo Patentkontor
184		Poland	SME services of the Regional Patent Information Center		Politechnika Gdańska
185		Poland	Association–University/College council of patentmen		NO responsible organisation, it is an association of patentmen in polish high schools
186		Poland	Regional Patent Information Center		Uniwersytet Zielonogórski
187	X	Poland	SME services of the Office for protection of intellectual property and patent information		Politechnika Wrocławska
188		Poland	Patent Information Center by Scientist and Patent Center of Main Library of Military High School in Wroclaw		Wyższa Szkoła Oficerska Wojsk Lądowych we Wrocławiu
189		Poland	Regional Patent Information Center		University of Lodz
190		Poland	Patent Information Centre		Politechnika Łódzka
191		Poland	Regional Centre of Patent Information in WKTiR Lublin		Wojewódzki Klub Techniki i Racjonalizacji
192		Poland	Patent Information Center		Wrocławska Rada Federacji i Stowarzyszeń Naukowo–Technicznych
193		Poland	Services offered by the Association of Polish Photo Artists		Association of Polish Photo Artists
194		Poland	Services offered by the Union of Associations for Artists and Performers		Union of Associations for Artists and Performers

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
195		Poland	Services offered by the Association of Collective Management of Copy Rights Belonging to Authors of Scientific and Technical Work		Association of Collective Management of Copy Rights Belonging to Authors of Scientific and Technical Work
196		Poland	Services offered by the Union of Audio Video Producers		Union of Audio Video Producers
197		Poland	Services offered by the Association of Polish Filmmakers		Association of Polish Filmmakers
198		Poland	Services offered by the Polish Musical Performing Artists Society		POLISH MUSICAL PERFORMING ARTISTS' SOCIETY
199		Poland	Services offered by the Association of folk artist		Association of folk artist
200		Poland	Services offered by the Association of Writers and Publishers–Polish Book		Association of Writers and Publishers–Polish Book
201		Poland	Services offered by the the Polish Association of Branded Goods Manufacturers–ProMarka		The Polish Association of Branded Goods Manufacturers–ProMarka
202		Poland	Services offered by the Polish Association of Authors–Zaiks		Polish Association of Authors–Zaiks
203		Poland	Services offered by the Polish Chamber of Information Technology and Telecommunications		Polska Izba Informatyki I Telekomunikacji–PIIT
204		Poland	Services offered by the Association of Polish Journalists	Press Freedom Monitoring Center	Stowarzyszenie Dziennikarzy Polskich
205		Poland	Services offered by the Internet society	Center for free Software	Internet Society–Polska
206		Poland	Services offered by the Association Polish Software Market		Association Polish Software Market
207	X	Portugal	Incentive Scheme for the Use of Industrial Property		PRIME Management Office
208	X	Portugal	Services offered by the offices for the Promotion of Industrial Property (PATLIB Regional Offices)		INPI–Instituto Nacional da Propriedade Industrial (the National Patent Office)
209		Romania	RoPatenTSearch–Patent data base		Romanian State Office for Inventions and Trade Marks
210		Romania	Financial support for patent registration abroad by Romanians		Romanian State Office for Inventions and Trade Marks
211		Romania	Programme to increase the competitiveness of food products		Ministry of Agriculture, Forests and Rural Development
212		Romania	Assistance services in IPR–Public Relations		Romanian State Office for Inventions and Trade Marks
213		Romania	Programme to increase the competitiveness of industrial products		Ministry of Economy and Commerce

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214		Romania	National Programme for sustaining the innovation and technology transfer infrastructure		Ministry of Education and Research–National Authority for Scientific Research
215		Romania	Financial support for patent application–INVENT		NATIONAL INSTITUTE OF RESEARCH DEVELOPMENT FOR MACHINES AND INSTALLATIONS DESIGNED TO AGRICULTURE AND FOOD INDUSTRY–INMA
216		Romania	Tariff reduction for documentary researches services		Romanian State Office for Inventions and Trade Marks
217		Romania	IP events		Romanian State Office for Inventions and Trade Marks
218		Romania	General information services, offered by Public Relation Office		Romanian State Office for Inventions and Trade Marks
219		Romania	Printing and publishing services		Romanian State Office for Inventions and Trade Marks
220		Romania	Copyright and related rights assistance		Romanian Copyright Office
221		Romania	Register for Computer Programs		Romanian Copyright Office
222		Slovakia	Support for R&D, implementing quality management, protection of industrial rights and using technical standards in manufacturing and services	Support for protection of industrial rights	Slovak Energy Agency
223	X	Slovakia	The Open Day		The Industrial Property Office of the Slovak Republic (IPO SR)
224	X	Slovakia	Ján Bahý–Award		The Industrial Property Office of the Slovak Republic (IPO SR)
225		Slovakia	UmInEx Exhibition		The Industrial Property Office of the Slovak Republic (IPO SR)
226		Slovakia	Possibilities to exhibit original Slovak technical and designer solutions at exhibitions abroad		The Industrial Property Office of the Slovak Republic (IPO SR)
227		Slovakia	Specialised seminars and workshops		The Industrial Property Office of the Slovak Republic (IPO SR)
228	X	Slovakia	"Let's create trademark" (Publication)		The Industrial Property Office of the Slovak Republic (IPO SR)
229		Slovakia	"Attractive design–Introduction to the issue of designs for small and medium enterprises" (Publication)		The Industrial Property Office of the Slovak Republic (IPO SR)
230		Slovakia	Courses–Intellectual Property Rights		The Industrial Property Office of the Slovak Republic (IPO SR)
231		Slovakia	The website of the Industrial Property Office of the Slovak Republic		The Industrial Property Office of the Slovak Republic (IPO SR)
232		Slovakia	Support for developing new and existing enterprises and services		National Agency for Development of Small and Medium Enterprises
233		Slovenia	Voucher Programme of Counselling		JAPTI–Javna agencija RS za podjetnistvo in tuje investicije/JAPTI–Public Agency for Entrepreneurship and Foreign Direct Investment

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
234	X	Slovenia	Seminars and workshops on intellectual property rights		Urad Republike Slovenije za intelektualno lastnino (Slovenian Intellectual Property Office)
235		Slovenia	International conference on Development of innovation capability and the role of intellectual property		Urad Republike Slovenije za intelektualno lastnino (Slovenian Intellectual Property Office) and JAPTI–Javna agencija RS za podjetništvo in tuje investicije (JAPTI–Public Agency for Entrepreneurship and Foreign Direct Investment)
236		Spain	ORDER of November, 11th, 2005 of the Department of Industry, Commerce and Tourism for the support of regional industrial companies in 2006 to reinforce their competitiveness and improve their productivity	Programme of industrial technological innovation, obtaining of patents	Servicio de Fomento Industrial, Departamento of Industria, Comercio y Desarrollo, Gobierno de la Comunidad Autónoma de Aragón (Service of Industrial Promotion, Department of Industry, Commerce and Development, Regional Government of the Autonomous Community of Aragón
237		Spain	Assistance to the Industrial Sector of the Balearic Islands	Technological research and development and product innovation	Direcció General de Promoció Industrial, Conselleria d'Economia, Comerc i Indústria, Gobierno de la Comunidad Autónoma de las Islas Baleares (Directorate-general Of Industrial Development, Cabinet of Economy, Commerce and Industry, Regional Government of the Balearic Islands.
238	X	Spain	Promotion of research, development and industrial innovation	Promotion of industrial research projects	Centro de Innovación y Desarrollo Empresarial (CIDEM), (Centre of Innovation and Business Development (CIDEM)
239		Spain	Decree 106/2002 of July, 23rd for the Promotion of Industrial Property in Extremadura		Dirección General de Promoción Empresarial e Industrial, Consejería de Economía, Industria y Comercio.
240	X	Spain	Promotion of Industrial Property		Servicio Galego de Propiedad Industrial (SEGAPI), Consellería de Innovación, Industrial y Comercio (Service of Industrial Property of Galicia (SEGAPI), Board of Innovation, Industry and Commerce)
241		Spain	Decree 360/2000 of 20 November, which approved support for research, development and innovation	Measures intended to promote registration and maintenance of patents by SMEs	Departamento de Industria y Tecnología, Comercio y Trabajo; Dirección General de Industria y Comercio; Gobierno de Navarra (Department of Industry and Technology, Commerce and Employment; Direction General of Industry and Commerce of the Regional Government of the Autonomous Community of Navarra)
242		Spain	Support for companies: research and development programme		(Comunidad Valencia) Instituto de la Mediana y Pequeña Industrial Valenciana (IMPIVA) (Autonomous Community of Valencia) (Institute of the Small and Medium-sized Industrial Valenciana Company)
243	X	Spain	INNOTEK Programme	Accompanying actions to Research, Development and Innovation activities (Complementary actions)	Dirección Innovation y la Sociedad de Información, Departamento de Industria, Comercio y Turismo, Gobierno Vasco. (Direction for Innovation and the Information Society, Department of Industry, Commerce and Tourism, Regional Government of the Autonomous Co)
244		Spain	Law 55/1999 of December, 29th, Tax, Administrative and Social Order Measures	Article 33. Tax Deductions for scientific research and technological innovation activities	Agencia Estatal de la Administración Tributaria, Ministerio de Economia y Hacienda (State Agency for Tax Control Administration, Ministry of Economy and Tax)

Nr.	B*	Country	Title of the Service	Sub-Service	Responsible Organisation
245		Spain	Programme for the Promotion of Technical Research (PROFIT), included in the National Plan of Scientific Research, Development and Technological Innovation 2000-2003 and 2004-2007.	Support for patents within the framework of the National Plan for Research, Development and Innovation 2004-2007	Ministerio de Ciencia y Tecnología (Ministry of Science and Technology)
246		Spain	Plan for the promotion of international activity		Instituto de Comercio Exterior (Institute for International Commerce)
247	X	Spain	Subsidies to foster patent applications abroad		Oficina Española de Patentes y Marcas (Spanish Patent and Trademarks Office)
248		Sweden	The working group for IPR		The Swedish Ministry of Justice
249		Sweden	Business Incubator		Chalmers Innovation
250	X	Sweden	IK2 Innovation Skåne, the Bridge of Knowledge		Almi Business Partner Skåne
251		Sweden	Contribution to the commercialization of research-based and knowledge-intensive business ideas		Innovationsbron
252	X	Sweden	The Entrepreneur's Guide		Nutek, Swedish Agency for Economic and Regional Growth
253		Sweden	Registration of IPR		The Swedish Patent and Registration Office
254	X	Sweden	Win Now		Vinnova, the Swedish Governmental Agency for Innovation Systems
255		The Netherlands	TechnoPartner Knowledge Exploitation funding programme		TechnoPartner
256		The Netherlands	Programme First exports on Foreign Markets (PSB)		EVD International Business and Information (an agency of the Ministry of Economic Affairs), in cooperation with the regional Chambers of Commerce, Syntens (innovation consultancy, also an agency of the Ministry of Economic Affairs), and a number of trade
257	X	The Netherlands	Innovation by patents information (IOI)		Octrooicentrum Nederland (Netherlands Patent Office) and Syntens (innovation consultancy, an agency of the Ministry of Economic Affairs, as well as the Patent Office)
258	X	The Netherlands	Workshop: Searching in digital patent databases		Octrooicentrum Nederland (Netherlands Patent Office), commissioned by the Ministry of Economic Affairs.
259	X	Turkey	Industrial Property Rights Support		"KOSGEB": Küçük ve Orta Ölçekli Sanayi Geliştirme ve Destekleme İdaresi Başkanlığı (Small and Medium Industry Development Organisation)
260		Turkey	Trademark Guidance Support		"KOSGEB": Küçük ve Orta Ölçekli Sanayi Geliştirme ve Destekleme İdaresi Başkanlığı (Small and Medium Industry Development Organisation)
261		Turkey	Technology Research and Development Support		"KOSGEB": Küçük ve Orta Ölçekli Sanayi Geliştirme ve Destekleme İdaresi Başkanlığı (Small and Medium Industry Development Organisation)
262		UK	Services offered by the Business and Intellectual Property Centre		British Library
263		UK	Innovation Hubs	Innovation Hubs	National Health Service (NHS)

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264	X	UK	What is the key?		The UK Patent Office
265	X	UK	HM Customs & Excise-led Business Advice Open Days		The UK Patent Office
266		UK	SMARTCymru	SMARTCymru Exploitation Award	Welsh Development Agency (WDA)
267		UK	WDA Innovation & Technology Counsellors	WDA Innovation & Technology Counsellors	Welsh Development Agency (WDA)
268	X	UK	Intellectual Assets Centre	Business Service	Scottish Intellectual Assets Centre
269		UK	Innovation Advisory Service South East	Innovation Advisory Service South East	South East of England Development Agency (SEEDA)
270		UK	Technical Information Service		Invest Northern Ireland
271	X	UK	Intellectual Assets Centre	Events and Tools	Scottish Intellectual Assets Centre
272		UK	Small Business Services	Personal Business Advisors / Innovation Technology Counsellors	Business Link
273	X	UK	Intellectual Property Portal		The Patent Office
274	X	USA	Small Business Education Campaign		US Patent and Trademark Office (USPTO)
275	X	USA	Service Corps of Retired Executives (SCORE)		SCORE Association
276		USA	Small Business Innovation Research (SBIR) Programme	Commercial. Assistance and related Workshops	For SBIR: all federal science agencies (NSF, DOD, NASA, DOE, etc.) individually. The US Small Business Administration has oversight, but not operational responsibility
277		USA	U.S. Business Advisor		U.S. Small Business Administration (SBA)
278		USA	Small Business Development Centers (SBDCs)		U.S. Small Business Administration (SBA), in cooperation with state and local governments
279		USA	Services offered by the federal Laboratory Consortium (FLC)		The Federal Laboratory Consortium for Technology Transfer and the federal laboratory members

B* = Benchmarked during Phase 2

Source: Identification process (phase 1)

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