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## **The Role of Intellectual Property Rights in Growth Aspiring SMEs**

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**Abstract:** Small and medium sized enterprises (SMEs) are significant innovators in the economy. The competitive advantage of the firms depends highly on successful knowledge management. According to earlier studies on growth seeking innovative firms, company performance and measurement should be connected to the management of intellectual capital. However, the open innovation paradigm, lack of resources and rapidly evolving technologies are challenging to both managerial decision making and the conventional protection of intellectual property rights (IPRs). Hence, good management of IPRs, knowledge sharing and future technology anticipation are the decisive driving factors for the international growth and wealth of the firms. In addition, a better integration of innovation processes to business models is required. Previous academic research indicates that this could be achieved by connecting those processes to the performance and measures of the firm by other management functions, such as human resource management.

The aim of this paper was to explore the current trends of human resource management (HRM) in identifying and managing the increasingly complex issue of IPRs. This research attempted to find answers to the question of what perceptions the managers of SMEs have of IPRs and, furthermore, of how they recognise those individuals, teams, projects or processes that they need to engage in order to implement and communicate the pursued strategies.

Six representative executives or HRM managers from technology driven SMEs in Finland were interviewed by using semi-structured interviews. The primary data was analysed by using content analysis. The findings indicate that the IPR knowledge base in firms is often key person centric and that the recognition of IPR is not made explicit in the company. The management of IPR is not aligned with the business practises, and the shortage of resources can lead to the outsourcing of strategically important activities, such as IPR processes or sales. It can be claimed that IPR management should be seen as a core and mission-critical process for growth aspiring SMEs, and well planned human resource processes would be here the natural contributors.

**Keywords:** intellectual property rights; intellectual property management; knowledge management; human resource management;

### **1. Introduction**

In the innovation driven economy, the role of small and medium-size companies is of rising interest in the academic discourse. Growth seeking companies need new knowledge, and this can be acquired by using already existing knowledge from both internal and external sources. Effective communication belongs essentially to this process, and it requires knowledge sharing, in other words, the transfer of the intellectual capital. Furthermore, the shift to open innovations with an increasing number of external collaboration partners that are needed in R&D activities, is increasing not only opportunities for the firms but also increasing the concerns related to the ownership of intellectual property and the intellectual property rights protection (Heiman and Nickerson, 2004). According to Chiera et al (2011, 34) the open innovation process involves typically four major dimensions: networks, organisational structures, evaluation processes and knowledge management systems.

Companies are using various protection tools from formal statutory mechanisms, such as patents and IPRs, to informal non-statutory mechanisms or practices. Because of the increasing need for knowledge sharing, managers are faced with the question of how to do it correctly and what mechanism to choose for the protection.

Sharing of knowledge assets is seen as a necessary part of the innovation development process but also as an effective platform for the promotion of new ideas and problem solutions. Prior research (Olander et al. 2016) addresses the important issue of how the protection of innovations should be seen more as protection of future innovation prerequisites. Additionally, according to the above study, there is an emerging need for change in management practises: knowledge protection should be seen more as a precondition for future innovativeness. Despite of the chosen mechanism forms, those prerequisites always involve the organisation's human resources (HR). In their study, Baughn et al. (1997,112) claim "how control over HR is a primary means for protecting intellectual property." The interface where the firms collaborate should be carefully designed by the managers because it is the actual key to successful cooperation or in the case of competition the key to winning the race.

While the economic success of innovation depends strongly on the complex issue of IPRs, this seems to become the key question for international growth seeking companies. The competitive advantage of firms depends highly on successful knowledge management (KM) practises. KM enhances the efficiency of business processes and increases productivity and customer satisfaction in many ways (Wiig 1997). Intellectual capital, in all its intangible forms, namely, skills, knowledge and creativity, have become crucial success factors for firms. Kitching and Blackburn (1998, 327) state that "the intellectual capital is often embedded in either organisational products and/or routines" and that "knowledge can exist in codified or tacit forms, as unwritten understandings and norms regarding appropriate workplace conduct". Additionally, an earlier Finnish study indicates that there is a correlation between higher levels of knowledge management maturity and long-term sustainable growth (Salojärvi et. al, 2005).

West and Gallagher (2006) argue that in growth seeking innovative firms, company performance and measurement should be connected to the management of intellectual capital. Another perspective is given by Moore (2002) who argues in his book how investors always expect the best use of their capital from the management of the firm. He elaborates on how from the investor's point of view, any activity that could have even a chance to increase the stock price, should be seen as a *core* activity and everything else should be seen as *context* (Moore 2002,25). According to him, managers should separate two types of activities: the mission criticals and supporting ones. He claims that managers should maintain control over the mission criticals inside the firm and that the supporting ones, which are less risky, can be *entrusted* to, for example, the strategic partners. Furthermore, he states that if an activity or process is seen as core and mission critical, losing control over it forms an immediate and high risk for the future.

On the global market, innovations that have commercial value are more likely to attract competitors' attention. This can lead to imitations, infringements of intellectual property rights, counterfeits and passing off. Companies are becoming more vulnerable through the rapidly evolving technology. Thus, the management of an innovation driven SME is complex by nature because the pace of technological development and the innovation cycles are not only financial risks for the firms but also forcing managers to balance between knowledge management and protection practises (Bader 2008). By combining observations on managerial challenges with the identified research gaps in earlier studies (Candelin-Palmqvist 2012) related to the management of IPRs, the authors were able to formulate the following research questions:

RQ1 *What are the current protection practises in IPR issues in Finnish SMEs?*

RQ2 *What kinds of challenges do managers have on the firm level?*

## **2. Literature review**

A systematic review (Candelin-Palmqvist et al. 2012) elaborates not only on the development of international IPR related research from the last four decades, but more importantly, the growing need for research from the innovation management perspective. Research interest in intangible assets began to rise in 1979 following the publication of the first journal article on IPRs in the *R&D Journal*. The terminology is rather confusing (Candelin-Palmqvist, 2012) regarding especially the two concepts of IP and IPR. They are often used as synonyms despite the fact that they have legally different connotations: IPR refers to protected intellectual property and IP to knowledge assets. This has led to further problems in innovation management research at least partly due to the inconsistent use of terminology. Another significant aspect is that "the level of the IPR studies in the innovation management literature is rarely on the firm level" (Candelin-Palmqvist et al. 2012,

506) and that in order to enhance the innovativeness of firms, IPRs should be connected to other management functions. The study indicates how this could improve the performance of the company. The natural connection between the IPR and human resources is acknowledged by suggesting that the IPR should be connected to such management functions as HRM and marketing.

While good management of IPRs, knowledge and future technology anticipation are decisive driving factors for the international growth and wealth of firms, the development of more profitable business models requires increasingly better integration of innovation processes to business models (Vasamo et al. 2016, Chesbrough, 2007). Innovations are essential sources for growth, and they must do more than only bring new technology or improved ideas to the market. They must include a profitable business model that would enhance the competitive advantage of the company, and according to Chesbrough (2007, 12), it has two important functions, namely, value creation and value capture. By contrast and interestingly, international companies are increasingly conducting their R&D activities in countries where both knowledge and the protection of IPR issues are rather limited (Zhao, 2006).

The increasing role of human resources and human capital as a source for both innovation and competitive advantage must be taken into account (Massingham and Tal, 2015). In the knowledge intensive industries, human resources form the fundamental basis of a firm's performance and indicate both the strengths and weaknesses in the firm's knowledge protection (Olander et al. 2015). However, the formal conventional legal means of intellectual property rights protection, such as patents, copyrights or other contractual agreements are still used as common forms and methods in companies (Kitching and Blackburn 1998). When a competitive advantage can be achieved with careful strategic planning, the strategy for knowledge management should be aligned. Previous research (Laihonen et al. 2015) addresses how the focus of academic discussion is more on strategic knowledge management but less on intellectual capital management.

For human resource management, the source of innovations can be identified in the employees, in their innovative work behaviour. The capability of acting and behaving innovatively at work depends on the employees (Prieto and Pérez-Santana 2014), and innovative work behaviour involves the employees' intentions to create unique and useful results for the firm (Janssen 2000). Knowledge sharing is part of every employee's daily behaviour, and this often includes dealing with highly confidential information that should not leak outside. The most valuable knowledge lies in the employees, mostly in a tacit form, and it is difficult to measure, codify, transfer or see it (Nonaka and Takeuchi 1995), but when key employees leave the firm, it challenges the innovation managers seriously. This should be prevented and managed with the support of better human resource management practises. "Tacitness of knowledge, therefore, characteristically offers protection for company-critical intellectual capital" (Olander et al. 2015, 744). However, this tacitness might impede or prevent knowledge transfer needed for the innovation activities of the firm. An employee leaving the company does not automatically mean knowledge leak, but it disturbs and damages the existing firm activities when a key employee is leaving with key competences or skills. Earlier research on IPR issues indicates how firms have been focusing on formal mechanisms of protection and appropriation, such as patents and contracts. However, there is already research record of the fact that the formal ways of protection are not sufficient. This has been lately noticed also among scholars both from the perspective of employment contracts and non-disclosure agreements although those are still relatively close to formal forms of protection (Olander et al. 2015).

HR practises are in a key role affecting the way in which employees relate to the firm and their work (Kinnie and Swart 2012). Especially practises used for knowledge protection should be considered carefully together with the HRM to avoid employees' negative perceptions on these issues (Hurmelinna-Laukkanen and Heilmann 2015).

Moreover, it must be taken into account that the intellectual capital of a firm is actually the intellectual capital of the employees, and this forms the foundation for the company's practises in protecting its tacit knowledge. However, this can happen only when the employees understand their role, and they must also be willing to cooperate as gatekeepers.

### **3. Methodology**

As pointed out in previous studies (Olander et al. 2009, 2014), the common means used for knowledge protection in SMEs are often informal. Hence, in order to serve the nature of the phenomenon and our

research aim, a qualitative research strategy was chosen. As Sekaran and Bougie (2010) explain, every research project must always be conducted with systematic design and approach whether being qualitative or quantitative by its design. The first stage should begin by identifying the critical issues in defining the research problem.

Semi-structured theme interviews were used for the primary data collection. A list of themes was designed and then sent together with the consent forms to the interviewees in advance. Six business professionals from technology-driven Finnish SME's were selected for the interviews. The positions of the interviewees varied from HR-managers and technology managers to managing directors. They represented very different businesses, but all of them were technology-based Finnish limited companies. The turnovers of the case companies varied from the smallest start-up level of 13 000 Euros to 41.3 million Euros in 2016.

The size of the personnel in these companies varied from seven persons to 379 in 2016. All of them were already on the international or global markets with their products and services or with their research and development efforts. The companies operated in the following areas: in the production and technology development of physiological analytics for sports and well-being, manufacture of hydraulic motors, manufacture of hearing protection, production of office and paper accessories, manufacture of new fibre technology for the packaging industry and in the development of IT software systems and services.

The terminology used instead of a semi-structured interview is quite varied. It includes terms, such as in-depth interviews, unstructured interviews, non-directive interviews, open-ended interviews, active interviews and semi-structured interviews (Liamputtong and Ezzy 2005). The aim in this should be an informal situation and good rapport with the interviewees, which is at the same time both active and open in order to increase the amount and depth of the collected information and data. The information and data collection are in the key roles, whereas the amount of data is less important. What matters is its relevance.

The interviews were conducted as face-to-face or telephone interviews lasting from 40 to 70 minutes, and notes were taken alongside. The interviews were recorded with a digital recorder and transcribed verbatim by the authors. In order to increase the relevance and clarity of the empirical information gained, trivial material and text from the data was reduced to ease the analysis process. The transcriptions were analysed by both authors, and main themes in each interviewee's answers were recognized and discussed.

Sekaran and Bougie (2010, 189) discuss how important it is to ensure objectivity both during the data collection and analysis. According to them, it is crucial to keep the collected data and information free from bias. Inaccuracies should be avoided, not to mention actual errors, in order to increase the internal validity. According to Bryman and Bell (2015) it is not fully to be avoided that the responses of participants to qualitative researchers might be affected by the nature of the interview situation and the characteristics of the researcher interpretation. Following these principles, the recorded interviews and the transcriptions were checked many times.

The respondents were intentionally selected to represent a relatively heterogeneous group of firms with different volumes and different markets. In this way, the validity could meet at least a fair level despite the small number of the informants. The common nominator for the companies was the authors' assumption of the amount of existing IP driven product development and technology in the companies. In addition, they all had the reputation of innovation seeking and international growth aspiring firms. After four interviews, the answers and comments indicated that a relatively high level of saturation had already been achieved. However, two more interviews were still conducted.

#### **4. Findings**

The findings highlight the importance of intellectual property management for SMEs. The value of IPR is recognised as well as the need for protection. However, the relationship to the firm's strategy is not always clearly communicated throughout the organisation. There is a division into informal and formal protection practices, but also a division into two approaches, namely operational and strategic, both of which have internal and external dimensions.

The formal protection mechanisms used are typically IPRs, such as patents, trademarks, industrial design and copyrights and contracts. Internally, the contracts are used for the maintenance of the employees' secrecy

obligations, for the transfer of the IPR rights to employers or for the non-competition clause. Externally, these contractual protection mechanisms are more of the conventional form of patents or trademarks. In the negotiation phase, these mechanisms often include the creation of a memorandum of agreement with non-disclosure and non-competition clauses. These are needed for the preservation of the prerequisites of the innovation and IPRs and for managing the collaboration with the strategic partners.

The informal protection practices are used as operational level measures. Practical level data protection both in terms of physical and digital access to the key data is in use, and IPR management is seen as a mission critical process.

The knowledge sharing and management process include several phases. Internally, the innovation process often begins with the ideation and product development work. This can be done inside the firm or together with the customers or strategic partners. The actual value analysis phase offers then the information needed for the decisions on whether to continue the process to the production phase. At this stage, the question of suitable IPR protection mechanisms is decided. Internal feedback is seen crucial, but there are not necessarily systematic approaches to collecting or analysing it. Human resource management has here a very small role although its potential is acknowledged.

Table 1. Typology of IPR management role divisions

<p>Individual centric - IPR is driven by</p> <ul style="list-style-type: none"> <li>• key persons</li> <li>• innovators</li> <li>• through organisational position or</li> <li>• legacy based professionalism</li> </ul>	<p>Shared responsibility - IPR is driven by</p> <ul style="list-style-type: none"> <li>• everyone</li> <li>• teams and individuals supporting each other</li> <li>• strategic partners</li> <li>• subcontractors</li> </ul>	<p>Outsourced activities - IPRs are assigned to external service providers and additionally to</p> <ul style="list-style-type: none"> <li>• sales and customer service</li> <li>• training for personnel</li> <li>• R&amp;D</li> <li>• testing</li> </ul>
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The different modes of operations can be categorised into three different role divisions (see Table 1). At the other end, there are firms where the IPR management leans strongly on the key persons who are working as innovators or who, based on their organisational position, have both the authority in and responsibility for IPR management related issues. The practises undertaken in this kind of company often seem to be based on the professional experience of these individuals or on the company's legacy in them. The benefits in this mode are seen as positive due to the positive role model effect and good coordination of actions. On the other hand, if this kind of a key person were to leave the company, it could cause extensive or even irreparable damage. In addition to this, there is a tendency of dissatisfaction among the other employees due to the unequal level of participation opportunities in the innovation or development processes.

Contrary to this mode, there is the approach where most of the IPR tasks are assigned to external service providers. Their services range from scanning other companies' existing IPRs and managing the infringements of the company's own IRPs to insurances or even external claims. Filing patent applications as well as the maintenance of the existing patents and trademarks are usually the outsourced activities. In this mode, the personnel training, research and process development activities are also likely to be outsourced. In some cases, customer service and sales are also on the list of the outsourced activities. Even the research and development processes can be outsourced or sometimes they are conducted in joint operations with the strategic partners.

Using strategic partners can be seen as a challenge but also as an opportunity that adds to the brand value of the firm by bringing more resources, knowledge and credibility to the cooperation especially when the size of the company's own personnel is small. The companies also recognise other benefits in this mode of operation. For example, they believe that it offers greater objectivity in the evaluation of ideas, that there is no need to hire a full-time employee for this position and that it decreases the risk of knowledge leaks in the case of a staff member leaving the firm. However, there is an existing concern that the evaluation of an innovation focuses more on the technical or legal aspects of intellectual property related actions and less on the evaluation of the business opportunities of the product or service when the firm's own representative is not

involved in the process. This can be the case especially using subcontractors. What is here worth noticing is that this can also limit the growth and learning opportunities of the firm's own personnel.

A mode in the middle of these two modes is the model where the management of the firm wants to involve everyone in the company, and where they use a shared responsibility model and higher level of engagement of every employee. Individual employees support each other on the operational level, or teams support other teams in strategic questions. According to the respondents, the advantages of this model are not only in how it contributes to a higher level of experienced job satisfaction and organisational trust, but in how it helps to optimise the use of resources and facilitates effective processes by forcing a proactive set-up and approach. On the other hand, notable challenges are recognised in communication because it should meet individual expectations and the organisational objectives at the same time in a relevant manner. Moreover, it must also be noted that the knowledge and understanding of intellectual property rights protection mechanisms seem to vary considerably among companies and individuals.

Mission critical processes are activities that are of such importance that failures in these can be seen as immediate and serious risks for the company's competitive advantage in future. These include, according to the informants, the actual core knowledge of the company that should be preserved, nourished and protected. They also include the entire ideation and product development process, the IPR management, value analysis, customer knowledge, management and human resource management functions. Non-mission critical processes are then all those that can be executed with strategic partners, such as testing and integrating solutions, education and training for boosting knowledge management inside the organisation and competition analysis. All these can be seen as supporting activities.

Complementary activities are related more to the entire business context of the firm. From the management perspective these include often more technical IPR protection procedures, such as filing applications, submission of licences and the maintenance of protected rights including patents to name a few. According to the findings, these are perceived to be less critical activities for the company's performance and should preferably require less attention and resources.

## **5. Discussion and conclusions**

The aim of the study was to examine what the current protection practises were and what kinds of challenges Finnish SMEs' had in IPR issues on the firm level. In order to answer these questions, a literature review was first created in order to seek a common ground for understanding of the complex phenomenon of innovation management and the sometimes rather confusing use of terminology in IP and IPR management. Additionally, this was needed to enhance the empirical data collection and analysis.

Previous research has identified several challenges that can limit the growth seeking firms' innovation ability. Our empirical examination indicates similar implications. According to our research, it can be stated that the value of knowledge and intellectual capital is recognised relatively well in the firms, but there are many practical challenges that the managers are facing. Firstly, too often the value of IPR is evaluated only from the conventional (patenting) perspective, and secondly, the optimal value creation level and value capture is not achieved mostly due to the scarce resources available. The findings indicate how firms in practise divide the roles in this process in three different ways. The division of the roles is often connected to the lack of resources, lack of knowledge and poor communication inside the organisation. According to our opinion, this could be explained by the lack of an IPR or knowledge management strategy.

Based on the empirical evidence, it can be stated that IPR management should be seen as a core and mission critical process for growth aspiring SMEs. However, the constant scarcity of resources makes them outsource activities that should be part of the core processes of the company. Moreover, business strategies lean still much on the technical (patent) measures, but often fail to recognize the fact that there are also other opportunities. Strategic partnering is of increasing importance for these SMEs. The overall role of HRM in the knowledge management process is more mechanical, but according to our findings, it could be a natural contributor to the entire knowledge management process as the previous studies have indicated.

This study has certain limitations. The interviews were conducted among Finnish companies, and all the informants were Finns. The relatively small number of interviews affects the validity of the findings and it must

be kept in mind that the legal systems as well as business cultures are different in other countries. It must be acknowledged that in Finland both the national and international legislation hold IPRs in high regard and that the contract law and labour legislation are well known and respected.

The interviews were conducted separately by the authors, which offered a small opportunity for natural variation in the interview conduct. The interviewers paid attention to creating a good and objective rapport, but the nature of a personal interview as a data collection method cannot guarantee it fully. Only one informant was interviewed from each company, so the data may have been representative of individual perceptions rather than the company level. Despite these limitations, this research provides solid grounds for future research in the same area. Different industries should be added, and comparison between international counterparts is recommended.

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