

## **Managing the Innovation Process: Patents and Utility Models**

### **The Importance of Small and Medium Enterprises**

European Union recognized in the June 2000 meeting of the Heads of State or Government the importance of small enterprises. (<http://europa.eu.int>). Many of these items are related to technology, IPR, innovations and entrepreneurship. The main lines of action include:

- Education and training for entrepreneurship
- Cheaper and faster start-up
- Better legislation and regulation
- Availability of skills
- Improving online access
- More out of the single market
- Taxation and financial matters
- Strengthen the technological capacity of small enterprises
- Successful e-business models and top-class small business support
- Develop stronger, more effective representation of small enterprises' interests at Union and national level.

Innovations and success in an enterprise depend greatly on the ability to develop, acquire and apply new scientific knowledge and know-how. Research and development within the enterprise, along with the existing and developing expertise of its personnel, provide a basis for the propagation, development and exploitation of competitive inventions. In a recent study conducted by Statistics Finland profitability in firms active in research and development was found to be on a clearly higher level than in non-R&D firms. Also cooperation with universities brings added value to the work. Information and know-how turn into a strategic resource for the enterprise. Often new enterprises are established based on potential and interesting invention, which may become a successful invention.

### **Innovative enterprises**

Successful enterprises know why they should and how to invest in research and development which brings results. Although small and medium-sized companies often suffer from lack of resources, know-how and innovative environment, they also manage to produce inventions and patents. The result is evident in the form of new products, improved competitiveness and success.

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In an innovative organisation, there should be

- An innovation strategy and goals
- Team work and networks
- Creativity training
- A positive and competitive atmosphere
- Strength to allow mistakes and reward for achievements
- Feedback and information systems.

Innovativeness and creativity are excellent qualities in people and businesses. However, an invention needs a home – in practice a business enterprise – where it will be developed. Corporate management skills often play a key role in the success of products. When evaluating the competitiveness and likelihood of success of a business, especially a start-up business, one focuses on factors such as:

1. Management, entrepreneurship and commitment.
2. Demand for products, market conditions, and potential for increased production.
3. Patents on innovative products, development resources, quality and significance of patents, and potential for increased production.
4. Well-rounded totality.
5. Finances and business operations.

In any organization, the innovations and their success depend greatly on the organization's ability to develop, acquire and apply new scientific knowledge and know-how. Mostly these depend on the human resources, their education, skills and activities. Research and development programs with possible cooperation activities, along with the existing and developing expertise of the personnel, provide a basis to reach research results and to make competitive inventions. Also information sources and know-how have turned into strategic assets for the organizations.

### **A Patent and a Utility Model**

A patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem. ( [www.wipo.int](http://www.wipo.int) )

A patent provides protection for the invention to the owner of the patent. The protection is granted for a limited period, generally for 20 years. Patent protection means that the invention cannot be commercially made, used, distributed or sold without the patent owner's consent. These patent rights are usually enforced in a court, which, in most systems, holds the authority to stop patent infringement. Conversely, a court can also declare a patent invalid upon a successful challenge by a third party.

A utility model is an exclusive right granted for an invention, which allows the right holder to prevent others from commercially using the protected invention, without his authorization, for a limited period of time. Utility models are sometimes referred to as "petty patents". The

requirements for acquiring a utility model are less stringent than for patents. While the requirement of "novelty" is always to be met, that of "inventive step" or "non-obviousness" may be much lower or absent altogether. In practice, protection for utility models is often sought for innovations of a rather incremental character which may not meet the patentability criteria. The term of protection for utility models is shorter than for patents and the utility models are much cheaper to obtain and to maintain.

Utility models are considered particularly suited for SMEs that make "minor" improvements to , and adaptations of, existing products. Utility models are primarily used for mechanical innovations.

### **Advantages of Patenting**

A patent and a utility model give the inventor the right to decide the fate of his or her invention. The inventor may manufacture and sell the product himself or may assign his rights to someone else. A patent is a right granted and published for any device, substance, method or process, which is new, involves an inventive step and can be used industrially.

The legal protection afforded to intellectual property has commercial significance to the owner since the owner may, for instance, preclude others from taking advantage of the protected intellectual property in their business. Businesses – manufacturers, merchants, etc. – need to, in fact, establish a name or brand for their products so that customers can tell them apart from other products. Likewise, an inventor must secure an exclusive right to his invention, a patent, so that not just anyone can exploit the invention in his or her business.

In a Finnish research study, businesses gave the following reasons as the most important rationales for their patent interest:

- Securing the basis for continued manufacturing operations
- Utilizing patent publications in product development
- Pre-empting competitive market entry
- Using a patent in marketing
- Monitoring competitors by following patent publications
- Avoiding patent infringements and disputes
- Evaluating the level of technology in an industry
- Using patents as a medium of exchange
- Licensing agreements.

Components of the benefit – usually economic – derived from important patents include:

- Pre-eminent market position
- Pre-empting competitive entries
- Pricing flexibility with new technologies
- Quick payback period for investments
- International expansion
- Strategic patent alliances
- Patent ownership as an advantageous negotiating tool
- Breathing space afforded by patent protection
- Favorable image.

The protection afforded to the inventor or inventing organization by a patent is an indisputable advantage, which does, however, require some expenditure. A patent provides a head start on the competition, even from the secrecy point of view generally 18 months. Filed patent applications can also be used to intimidate competitors through, for instance, corporate communications. For example in Finland, the world's largest mobile phone manufacturer, Nokia, invests annually approximately 1 billion U.S. dollars and human resources of several thousands employees into research and product development. Nokia files some 500 patent applications each year. IBM is the leading U.S. patent applicant. Next in line in the U.S. are Canon, NEC, Motorola and Sony. Each day, two thousand patent applications are filed around the world. A patent alone, however, is not enough. The invention must be developed into a marketable product.

Patents serve as flexible instruments of trade through licensing and sublicensing and thereby open opportunities to earn substantial income and to expand internationally. In cases of disputes patents must be vigorously defended.

However, in some fields the intellectual property rights are problematic. Information and communications industries as well as biotechnology are examples of fields, which have developed, very strongly in recent years. Consequently, the ground rules for intellectual property rights and their exploitation have not kept pace with this development in many countries. Particular attention should be paid to rapid development of necessary legal protections in fields such as these. Now often many IT-companies compete in the markets with other means than the strong use of IPR.

### **The IPR specialists**

The IPR specialists are most commonly engineers in many fields (electricity, mechanical, chemistry, construction, materials etc.) or lawyers, who have, in addition to their basic university education specialized into IPR. Within IPR many of them additionally specialize to some field of IPR, for instance patents, trademarks, agreements, internationalization, etc. Their work may be domestic or many of them may have an international career. IPR professionals can have a large variety of careers, many of them as IPR specialists or in charge of IPR management in the companies.

The role of IPR has grown to larger and larger fields. New businesses can be found in addition to existing and routine use of IPR. This is the reason that in practice every engineer should have basic education in IPR and its possibilities. Later on in his/her work there may come out new business possibilities, licensing in alternatives or limitations because existing patents or copyright. Later on, as a business manager, also the importance of trademarks may come out in a new light and it may give new possibilities.

### **Some Current Trends in the Use of IPR**

In the fields of IPR, the following principles or trends can be seen:

1. The role of IPR deepens as an important measure of the level of knowledge of a nation
2. Innovations and IPR are an important source of international business, both in buying and selling
3. IPR will be more and more important in the international trade

4. The importance of IPR is understood and used wider and wider in the world
5. Copyright, trademarks and patents continue as the most important forms of IPR
6. There are continuously changes in the legislation, also related to IPR
7. Geographically, cooperation increases and for instance in Europe, the Community patent for the whole European Union area comes slowly (now EPC, covers most European countries)
8. The fields of patenting become larger (business methods, software, biotechnology), but it is not very suitable to some fields
9. Patentable inventions are smaller and smaller details
10. Patenting is considered to be expensive especially for private persons, university researchers and SME companies but on the other hand side the share of patenting costs in success products is minimal
11. Most of the inventions and patent applications do not lead to products or business and expectations are usually higher than real success
12. There are too high expectations to get earnings even from most inventions
13. The respect increases towards IPR of others.

### **Intellectual Property Strategy and Policy**

Technological and economic development worldwide leans heavily on new and competitive products. They can be classified on the basis of their significance at different levels of sophistication and in different sectors of the economy, from high-tech to everyday products. Some reach international success, while others are noted within their home region or country. Technology and inventions promote general welfare and also play an important role in the production of services.

In most industries, intellectual property rights, especially patents and their exploitation, hold key significance in the development and commercialization of new products. Businesses should have an intellectual property strategy as part of their corporate planning and strategy.

An intellectual property strategy defines the principles that intellectual property rights are designed to serve and how patent matters and other intellectual property matters are handled within the enterprise. The purpose of patent policy is to support the business operations of an enterprise. Neglecting patent matters may turn into a threat to development in an internationally expanding business.

The patent and intellectual property policy of a business should include, among others, a definition of intellectual property rights, the organization of corporate activity designed to protect intellectual property rights (or just patents), making and acquisition of inventions and available sources, instructions on how to secure and maintain adequate patent protection, instructions on acquiring, tracking and otherwise utilizing patent information, protecting corporate patents, licensing behavior and publication policies.

Corporate patent policies may be divided, for example, into low and high profile policies, aggressive patent policies of businesses involved in international markets, and patent policies followed by businesses engaged in the commercial exploitation of intellectual property rights or transfer of technology. The modest patent policies of diversified businesses can be classified as follows:

1. Get familiar to IPR and have an IPR specialist in house or an outside consultant

2. Build a patent portfolio commensurate with the scope of your operations and technological sophistication and exploit it in your business
3. Respect and avoid infringing on the patents and intellectual property rights of others
4. Enforce and protect your own intellectual property rights
5. Seek to enter into liberal cross-licensing arrangements and/or find an ally.

Even a modest patent policy including IPR management is vital also for smaller companies since their business is often based on only a few key products. The management for IPR matters means more than just protecting the inventions, trademarks, designs, or copyright. It also involves a company's ability to commercialize such inventions, market its brands, license its know-how, conclude joint ventures and other contractual agreements involving IP, and effectively monitor and enforce its intellectual property rights.

### **IPR Needs an Active Management**

The management of the organisation plays a central role in the development and utilization of intellectual resources. Cooperation and customer contacts are also important sources of inspiration, product ideas and new approaches to research and business as well as for the management.

The intellectual property in the company must be managed well to get the best use for the competitiveness of the company. In small companies somebody must have the responsibility of IPR matters, in bigger companies there is an IPR specialist and in big companies there is an IPR director and department. Very often the SME companies do not have resources of their own and thus it is a good practice to use the best available outside specialists. When somebody in the company invents something, the inventor makes a written invention document to the company and then the company or its outside specialist ( innovation center, patent attorney, consultant etc. ) evaluates the invention confidentially. After that the patenting and invention's other development work may start – or the idea is not accepted. The patent should be valid as long as it adds competitiveness to the company.

The management for IPR matters means the practical work following the innovation and IPR strategy. It is more than just protecting the inventions, trademarks, designs, or copyright and negotiations with the inventors, consultants and authorities. It also involves a company's ability to commercialize such inventions, market its brands, license its know-how, conclude joint ventures and other contractual agreements involving IP, and effectively monitor and enforce its intellectual property rights. The IPR management has to follow the budget in its activities.

An organization can view its know-how and quality through outside evaluations or through the eyes of a customer or an outside expert by identifying the key expertise in research and development and in the whole value-added chain where ideas are generated. Additionally, the management must also investigate where the need for development of know-how and training of personnel is the greatest.

The intellectual capital and as a part of them, the intellectual property rights, often form one important basis for the organization's development, quality, growth, competitiveness and international expansion. This applies to all intellectual property rights, but especially to patents and trademarks. A strong patent together with a good trademark play a central role in domestic and international business and trade based on them has grown strongly worldwide.

## **The Innovation Process**

Innovations start as ideas or inventions – inside the company or they are acquired to the company from outside. The process continues to first commercialization of the innovative products or processes and then continues as long as the product stays in the markets. All possibilities of IPR should be evaluated and used.

When developing the inventions from an idea to a marketable product for example the following phases and mean can be used:

- Patent, technical and marketing information related to the invention is collected and then the invention is evaluated.
- The results of the evaluation are reviewed.
- The owner of the invention submits a patent application and pays the fees to the Patent Office possibly with the assistance of a patent attorney, and the appropriate international patenting is dealt with in good time.
- A plan for implementing the project is drawn up.
- Product development, further research or a prototype is produced for further evaluation, testing and for the commercialization.
- The characteristics of the invention are tested (a check is made to see whether it meets, e.g., the quality and safety requirements set for the product) and new prototypes are made if necessary.
- A business plan is drawn up with the focus on the commercialization of the invention (market surveys, marketing material etc.) as well as on human and financial resources
- The invention can be manufactured and marketed either as the current or new company's own production or a license agreement on its commercialization can be concluded with a company in the sector.
- The marketing and manufacturing of the innovative product starts by different means to companies or other customers often first domestically and later on internationally.

It is good to remember that the management of the company as well as the buyers are generally more interested in the competition situation and commercial possibilities or success than in the idea itself.

The innovation process should be continuous, because new products are needed continuously.

## **How to Start to be Active in the Innovation Process and its Management**

If you or your company is already active in the field of inventions and in the use of IPR, you know what to do. If not, the following steps can be useful:

- Get familiar to the possibilities for your business of using patents, trademarks and other forms of IPR ( books, booklets, seminars, internet, experiences of others etc )
- Think by yourself or discuss in your company how the present products and their marketing could be improved and what kind of new ideas would be needed ( how can we be competitive during the next years ? )
- Arrange the organization of innovation and IPR matters in your company ( first somebody to be responsible, later on an IPR specialist to the company ). The IPR management in the

company will activate the personnel to introduce new ideas, which add the competitiveness and possibilities for success in your company

- Arrange information how new ideas and inventions inside your company will be encouraged, handled, evaluated and developed and how compensation is paid to the inventors ( make the rules and a budget – they are the first steps for the patent strategy )
- Get familiar to the services of authorities and financiers in the field of innovations ( Patent office, patent attorneys, innovation centers, universities and research institutes, financing and venture capital organisations or companies etc )
- Discuss with confidential specialists
- Be active and do not get disappointed with first problems or failures ( there are more failures than success stories, but everybody is interested in and proud of success – that is also your goal ! )

## **Conclusions**

The potential and capacity of enterprises for innovation does not only depend on technical and financial resources. Innovation requires expert know-how in many areas such as management, intellectual property rights, the innovation process, production, marketing and co-operation skills. Networking is often advantageous. Understanding and managing various parts of the process is essential for securing the development of innovation activity. The public sector promotes innovation activity in many ways, but the responsibility and capacity for success lie with the enterprise itself.

Further information: [www.wipo.int](http://www.wipo.int) , <http://europa.eu.int>