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FOSTERING COMMERCIAL APPLICATION OF INVENTIONS,
ACCESS TO FINANCING, MARKETING

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DANISH INVENTION CENTRE - A SHORT DESCRIPTION

This paper represents the viewpoint of the Danish Invention Centre (DIC) at the Danish Technological Institute in Copenhagen.

DIC is a private, not for profit institution set up in 1972 with the aim of promoting the utilisation of inventions from private inventors, universities and companies. DIC offers counselling and active involvement in the technology transfer process. The major part of DIC's budget comes from national schemes.

In DIC we believe that creativity can be learned, and on market conditions we provide training in the various aspects of creativity ranging from creativity in administration, management and negotiation to hard-core creative inventive techniques.

Another source of income is various international projects, which DIC runs either alone or in collaboration with sister organisations mainly in Europe. DIC also assists in setting up infrastructures related to technology transfer and business start-up in developing countries and in countries that reorganise their infrastructure.

Today, DIC holds a staff of 20. DIC provides advisory service to private individuals, scientists and companies in more than 3000 cases per year. During the last 5 years DIC has negotiated and mediated the signing of more than 150 agreements on commercialisation of inventions and research results, mainly patent license contracts.

DIC is based in Denmark, which has 5.5 million inhabitants, 11 universities and approx. 5,000 scientists within natural, technical, agricultural, medical and veterinary science.

The industrial sector is dominated by small enterprises; Denmark has less than 100 companies employing more than 500 people. Some Danish companies are highly specialised and hold a fair share of the world market within very narrow niches (e.g., hearing aids, and insulin).

WHY SHOULD COMMERCIALISATION OF INVENTIONS BE FOSTERED?

It is often said that if inventions are so valuable as the inventors and their organisations claim, then why not leave it to the private initiative and the market to see to it that they are commercialised - why do we need to foster the commercial application?

There are several reasons why this is necessary. The most important reasons are that

- there is a need for a general advisory service to inventors regarding the overall process
- there is a need for specific consultancy in the various stages of the commercialisation process
- there is a need for money to finance the necessary stages

General advisory service

The commercialisation process consists of a number of activities that are specific to this professional area. Knowledge about the international IP system and how to use it in a cost-efficient way, prototype design, secrecy agreements, patent license agreements and all the issues related to starting up your own company can not be considered common knowledge.

Therefore, before an inventor even starts the commercialisation process, he should have at least a superficial knowledge about all the steps involved - and not least the consequences for himself as an individual. Examples of inventors that have lost their property - and sometimes even their marriage - are numerous and scaring.

The aim of a general advisory service for inventors is to provide knowledge about all the steps involved on a “need to know”-basis. In addition check-lists, “do's and don'ts” etc. can be very helpful

It is important not to strive after e.g. providing a very deep knowledge regarding IPR - because the subject is so complex that it will take years to achieve a comprehensive knowledge. Instead the inventor should know enough about the subject to ask the right questions to the real experts.

Good ways of providing general advisory service is using a combination of Internet based tools, booklets, thematic pamphlets, courses and person-to-person counselling - either at a meeting or by phone.

Most centres in support of inventors - and even a number of inventors' associations now have Internet homepages containing general advisory service. In this context the Internet has a number of benefits: Once you have the equipment and knowledge the costs of providing a lot of information are limited, and it is relatively easy to build up a hierarchy starting with the basic knowledge - and then going more and more into details. The user himself decides at what level he will stop. In this context the hierarchical structure is easier to use than reading a book, because you only see what you need.

Another important advantage of Internet based information is that it is much easier and cheaper to update than e.g. a brochure. And you always know that what you see is the last update.

One important drawback of the Internet is, of course, that you have to have access to a computer to use it. But even today where on a world basis only few people have access to a computer the Internet can play an important role, because local information centres in a country that do have an Internet access can provide the necessary information to those who need it.

Specific consultancy

Even if the inventor knows his way through the process there is a need for a specific consultancy. The main reasons are:

- there is in most cases a need for completing and fine-tuning the intellectual bases of the invention, the idea
- there is always a need for financing the activities that are necessary for the commercialisation. If the inventor himself is not able to find the means (which he rarely is) then there is a need for advice and activities that will lead to - and open - the necessary financial sources.
- in most cases the invention can not be commercialised unless specific experts can be called upon

Completion and fine-tuning

At the Danish Invention Centre we believe that good ideas are created as a consequence of a mixture of innate gifts and acquired skills. We believe that creativity can be learned, and that certain techniques can be helpful.

In most cases when we provide advice to inventors we try to go behind the idea, reconsider and use targeted creativity in order to perhaps improve the idea. In many cases the inventor has discovered a need (which is often referred to as having made half the way to an invention) and a good solution. But problems often have many solutions, and in the process of creating the idea one has to do away with some solutions and focus on the selected ones.

In this process it has proven helpful to work with a trained sparring partner. In most cases the inventor will do nearly all the work and provide most of the ideas - he just has to be challenged in a controlled way. Examples are numerous how fair ideas have been turned into brilliant ideas leading to successful products.

Finding and opening financial sources

In most countries there is in one form or the other a financial scheme for financing the commercialisation of inventions. They are very different, but they have one thing in common: You have to apply for the money. And in most cases it is not enough just to present an idea. Those who are willing to finance an invention have a number of key questions - and they want good and complete answers.

This is actually a schism, because before you can achieve money, you have to find answers to the questions - which costs money. Therefore the specific advisory service regarding financing should have access to a limited amount of money in each case - to investigate and clarify a few key factors (such as novelty, market and technology) on a very basic level.

Specific experts

Most inventors can do a lot of the necessary work on the way from an idea to a successful product - but there are things that are best left with people who do little else in their professional lives.

An inventor can make a fair novelty search at the Internet or in a patent library, and he can make a fair draft patent application. But if it is a potentially valuable invention, then it is worthwhile to call on experts to draw up the patent application.

Likewise it not advisable for the average inventor to negotiate the conditions for a patent license agreement regarding his own invention, not to speak about formulating the agreement itself.

And in most cases the commercialisation process involves a number of other specific activities such as prototype building, testing or approval by authorities. Each of these activities can only be accomplished if experts can be called upon

ACCESS TO FINANCING

There are various attitudes as to how the necessary steps in the commercialisation process should be financed. Some attitudes that illustrate a rather broad spectrum are:

- Commercialisation of inventions should be financed on pure market conditions. If the invention is good enough, then it will also attract money.
- There is a need for publicly funded financial support, but the inventor himself must bear a fair share of the risk.
- Commercialisation of inventions is to the benefit of society and should be publicly financed

Before discussing the validity of these statements let us see what happens in one of the most common forms of commercialisation of inventions: The patent license agreement

In a patent license agreement the inventor sells the right to produce and market an invention covered by a patent to an existing company. It is common that the major part of the payment takes place in the form of a royalty.

A royalty is mostly calculated as a share of the turnover produced by the licensed product. Depending on the field of business it can vary from fractions of a percent up to 10-15 % or more. But in 9 out of 10 license agreements the royalty is between 3-5%.

People are mostly focussing on the inventor who is getting rich “without doing anything”. They tend to forget all the work and struggle which the inventor had to go through before he even reached the point where he could see some money. So there is a tendency that society considers an inventor a rich person who is only working for himself - and he should fully pay any investment necessary for the commercialisation.

But let us see what really happens as a consequence of a license contract - and who gets the big money.

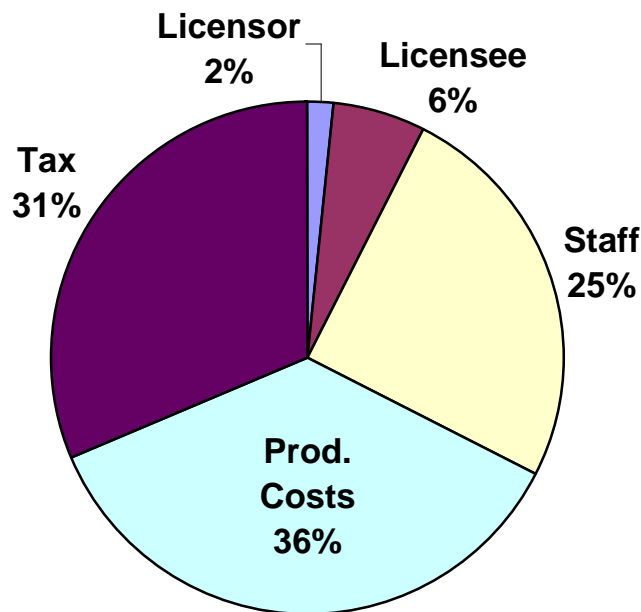
The inventor only receives his royalty provided a turnover is created - a turnover which would otherwise not have been realised.

But to create a turnover a lot of things must happen: People have to work, they will pay income taxes, and the company will (where applicable) pay tax as well. There are many sorts of taxes (the ministry of taxation is often the most creative of all ministries) and in the end we will see huge streams of money changing hands as a consequence of the license agreement - but the inventor will only see a very small fraction of it.

How small a fraction will depend on the local tax system. But in the case of Denmark which is a high-tax area the picture is as follows:

What happens to the tun over?

	%	Inventor	Licensee	Salaries	Production costs	Taxes
Licensee's profit related to turnover, %	10					
Company tax, %	40					4
Licensee's profit after tax, %			6			
Salaries related to turnover, %	50					
Income tax related to income, %	50					25
Employees' income after tax				25		
Licensee's other production costs					36	
Royalty, % of turnover	4					
Income tax of royalty, %	60					2,4
Inventor's royalty income after tax		1,6				
Total		1,6	6	25	36	31,4



It is interesting to notice how in this example the tax authorities receive nearly 20 times as much money as the inventor, who receives the smallest fraction of all. And it is not because the licensee company has treated him in an unfair way - we are talking about a well balanced license agreement - at least well balanced between the company and the inventor. The company cannot afford to pay more and still make a decent profit.

From this example it appears to be quite unfair to ask the inventor who receives the smallest share of all to pay the necessary investments.

Likewise it appears that society is the true winner, and therefore society has an obvious interest in financing the commercialisation of inventions.

Experience from various schemes for financing the commercialisation of inventions have shown that a well functioning, efficient and fair system can be developed if it is based on the following principles:

- A strong financial entity (the state itself or a group of companies) provides the scheme
- The inventor must invest time and a certain amount of money himself. It must “hurt” a bit.
- The scheme must be willing to lose 10-40 % of its total investments over time
- The scheme must be patient. For the first 5-6 years only limited return on investments can be expected.

The financing of the first phases of the application of inventions is therefore only in very rare cases interesting for profit oriented financial or venture capital institutions.

A scheme for financing the commercialisation of inventions should rather be considered an infrastructure in line with transport, telecommunication and schools - structures that do not always generate a direct profit but are believed to provide such long term benefits for society that it would be difficult to imagine a world without them.

MARKETING OF INVENTIONS

An invention can be commercialised in basically two ways - either through licensing to an existing company - or by setting up a business dedicated to commercialise the invention.

The question: licensing or start-up is one of the most crucial decisions which an inventor has to make, because whatever he chooses, it will influence his life a lot.

Some of the questions to be asked - and their answers - are shown below. The corresponding answers in the boxes indicate if licensing or start-up should be preferred.

Question	Start-up	Licensing
Can a strong IPR protection be obtained?	yes/no	yes
Is a long and costly development time needed?	no	yes/no
Is a huge marketing organisation needed?	no	yes/no
Will the inventor be a good manager	yes	no
Will the inventor quit his present job?	yes	no
Is personal satisfaction important to the inventor?	yes	no

If the inventor chooses to start up a new company he will face a number of challenges, and gradually he will more feel like a businessman than as an inventor. Starting up a new company based on an invention after all does not differ that much from starting up a company based on a business idea which does not involve patent, utility model or design protection.

But if the inventor chooses to sell a patent license to an existing company the marketing issue becomes very different from the well known, and well described situation you have if you try to bring a product to the market.

In the case of finding a buyer to a patent license the IPR itself becomes “the product” and the licensee company becomes the customer. And you only need one customer (in the case of an exclusive license) or at least a very limited number of customers (in the case of non-exclusive licenses). In many cases the inventor will be better off selling the invention to one licensee exclusively - certainly a different situation from that of a company where more customers mean more success.

Marketing of inventions therefore is very different from marketing of products or services. The following statements are based on the experience of DIC:

- An exclusive license contract in most cases represents the optimal solution. You will have *one* buyer only - but it is crucial that you find the *right one*
- The IPR has higher value the less known it is!
- Marketing of inventions for licensing means finding buyers for IPR - not a physical product. The potential buyer must know - or get to know - what IPR is about.

From these statements it can be seen that

- It is counterproductive to start out going public and broadly announce that you have a specific invention for sale.
- Initial marketing should be done in concealment and should be based on networks and personal contacts.
- Even if a good patent application has been filed, then you should not say more about the invention than needed. Use secrecy agreements whenever possible.
- It is good ethics to involve only one company at a time - or to clearly indicate it if you go to more companies simultaneously. Good business ethics will keep you in business.
- You should be prepared to invest a lot of effort in presenting the invention and explaining about the IPR. Be even prepared to train the potential licensee in IPR and licensing matters
- Only if you fail finding the right licensee using “concealed marketing” you should go public. The type of invention and IPR will decide what media will be the best.
- Finding only one customer is not easier than finding many...

CONCLUSION

Inventions imply an important contribution to the development of society. They can be the basis for new knowledge-based companies or they can be an important basis for the product renewal in existing companies. But these benefits do not come by themselves. There must be a system which can add the necessary knowledge, counselling and not least be able to finance the process at fair conditions.

Marketing of inventions and IPR significantly differs from marketing of physical goods and services. Actually it is closer related to what you consider and what you do when you find your partner of your life. You have to make a serious decision which will have an important long term influence. In case you take the wrong decision it may cause you a lot of trouble - whereas the right decision will lead to a long lasting prosperity.

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