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ASSESSMENT AND VALUATION OF INVENTIONS AND RESEARCH RESULTS FOR  
THEIR USE AND COMMERCIALIZATION

HOW TO TRANSFORM AN IDEA OR R&D RESULTS INTO  
A COMMERCIAL SUCCESS STORY

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## DESTINATION - SUCCESS

Assessment and valuation of inventions strongly depends on the scientific, technologic, legislative and cultural environment of a country (i.e.: the Hindu fishermen used the telephone bell/ringer which once dropped under water attracted more fish thus increased the fishermen's income, while the same effect is being used in the United States as a gadget for sport fishing).

Even if the theoretical concepts are the same, the reality and the parameters are different in each country. The contrast strongly increases, between industrial and developing countries.

Notwithstanding the social value of inventions, all inventors, university researchers or individual creators, want to know how much money or benefits their invention could generate.

So, the real goal is to valorize inventions: in other words transform inventions into valuable innovation. And, whatever path you will choose in your journey to success, the road is long and risky. It has to be taken step by step or it can easily become a costly monster.

In the R&D field, two types of risk are recognized: the technological uncertainty and the market venture. Notably, for the university researchers the first uncertainty is represented by the technological hypothesis. For the individual inventor the first uncertainty is represented by the idea to develop with regard to solving a precise problem. Both approaches will result in the discovery of a solution: the invention.

In most industrial countries, governmental programs foster R&D valorization, prototyping, industrial scaling, but the private and venture capital mostly assume commercialization development.

My presentation will concern all stages of this market venture. But now, I would like to make a comment on the technological uncertainty related to prior art.

Frequently, researchers, or more commonly inventors, rely on their own knowledge of technology and the prior art to establish an R&D program or develop an invention. However, a study undertaken by the QUICKSAN action, an European program to help innovation, found that 57% of the inventions submitted for protection since 1996 were not new.

With the internationalization of R&D and technology, it is more than essential that inventors, including the university researchers, properly document the prior art at the earliest stage of a research program, notably by exploring patents data banks mostly available these days on the Internet. This will save useless costly research expenses and will result in real invention, the subject I will now discuss.

## PRELIMINARY INFORMATION

Few inventions are commercially viable, but it could be the way towards financial independence. You have to consider, at the very beginning of the process that a new product has to generate more money than it will cost you to develop it.

Even if you think that your invention will be the invention of the millennium, you have to keep in mind the concept of destination success, which means making profit.

You should know that:

- only ten ideas out of one hundred have the potential of commercial development;
- not more than three are commercially viable and profitable;
- finally, only one idea out of one thousand could really change your world.

To avoid a nightmare, you need to be informed on how to make a commercial success from an idea or an R& D result.

Books, the Internet, schools and universities, intellectual property (IP) offices, governmental organizations, inventors' associations, patent attorneys and non-profit or community organizations are some sources to consult for preliminary information before taking the big plunge.

A study published by L'École Polytechnique of Montreal (Canada) under the title "Entrepreneurship Technologique" concludes that the two main factors of success for the start-up of an innovative enterprise are:

- the knowledge of technology acquired by the promoter (entrepreneur);
- the knowledge of the business and the market.

Assuming that you make the decision to continue, we are now ready to start this potentially profitable adventure.

Now, we will see an overview of the presentation. We will consider two stages with multiple steps:

- **the first stage:** the valorization stage which consists of transforming an idea or an R&D result into an intellectual property asset;
- **the second stage:** the commercialization stage, which consists of transforming an intellectual property asset into a commercial success.

## 1. THE VALORIZATION STAGE

### Step 1: PRELIMINARY EVALUATION

The objective of preliminary evaluation is to demonstrate the expected revenues, which will result from the licensing or the commercialization of your invention and will generate enough profits to justify the investments.

The questions you have to answer are numerous and could be examined later on, in the question and answer period.

Even if you are able to do so by yourself, I strongly suggest that you obtain independent opinions on your project. And, to prevent any deception, you should deal with well-known people or organizations. This step could take up to three months and cost you a few hundreds to some thousands of dollars.

Usually, you have to finance this step with your own assets or “love money” from your family or social relations, even if your community offers financial programs to promote entrepreneurship or technological development. Most of the time, neither government nor financial institutions will finance your project, if the promoters themselves do not participate in the funding at the level of 15 to 25%.

During all the valuation process you have always to be aware of confidentiality considerations. If you make a success, be sure that a pack of wolves, usually your competitors who want to copy and gain your market, will search any public disclosure, sales or offer to sell your invention before you have requested legal protection.

### Step 2: THE PRIOR ART

Today, over 35,000,000 patented documents exist in the database collections of national patent offices all around the world. 70 per cent (70%) of technology described in these documents will be published after 5 years but 50% will never be published in scientific publications. This is the major reason why the European QUIKSCAN program has shown that 57 % of newly submitted inventions were already known or even patented.

The two main objectives of this step are to establish, if:

- your invention already exists in the public domain or is protected by a patent;
- the problem that you will solve or the needs that you will meet are already solved by other patents (even if no commercial products do yet exist).

When you are making a prior art research, think in the terms of a solution rather than in the invention. The main questions to be answered to identify the limit of your invention are:

- has the problem or the need already been solved by other solutions?
- are these solutions more or less efficient than yours?
- what is already patented or in the public domain?
- what could be patented?
- are there any previous solutions that can help me progress with the development of my solution?

Consequently, these may be some solutions (inventions) that will help you to solve what you are trying to do or you can learn from such data and improve your own invention or an already existing solution.

If you discover that your invention already exists and that the improvement is not justified to continue, you limit the financial damage by leaving the process early.

N.B. You can possibly do a preliminary prior art search (or state of the art search) on the Internet, but you will need the help of a specialist to prepare a proper and reliable search.

### THE NEED FOR PATIENT CAPITAL

Now, you have good reasons to think that your invention has a commercial potential and you have to finance the next steps that are capital intensive.

According to the level of risk at this early stage of development, if you are not a public company, which can obtain public financing, you have to find investors.

The different sources of financing, depending on your particular case (inventor, SMEs, ...) could be:

- members of your family or relatives (known as “love capital”);
- professionals (such as engineers, accountants, lawyers, medical doctors, ...);
- potential suppliers or end users;
- investor's network;
- financial institutions or rarely the banks;
- governmental, community and non-profit or private organizations.

When you complete this step you are ready to develop your invention into a real product, but you still have one more step to complete before starting to work on the technical development.

### Step 3: THE MARKETING PROSPECTIVE STUDY

Now, you have to validate your concept by meeting the real needs of the market for your product. You will have to analyze the strengths and weaknesses of your product. To do so you have to:

- compare your future product with the market trends and the economic environment;
- develop a knowledge of the distribution networks and the sales practices;
- fix the price range;
- collect information to help the design of the product.

This step has to be prepared with specialists in marketing studies and can cost somewhere between hundreds to tens of thousands of dollars.

Sources of information or help are: stores, exhibitions, the Internet, universities, governmental and non-governmental organizations, but unless you are a marketing specialist, never forget that it is not economical to do these researches and studies alone, if you want to obtain a real chance of success.

#### Step 4: THE TECHNICAL R&D

As a result of your marketing prospective study, you have the necessary knowledge to make your invention a reality.

You have to take into consideration:

- the technical, environmental and legal constraints;
- the esthetical design trends;
- the market needs, and apply such knowledge into a feasible product, which matches also the expected price, the normalization rules, food and health standards, etc.

A design engineer who is able to conciliate all the constraints and choose the most efficient way to manufacture a product usually does this step.

When all these studies are completed and scale models or simulations are available, you can proceed in preparing a prototype.

#### PROTOTYPING & BENCHMARKING

Even if in the technical R&D step you have made scale models to check some specific points or aspects of the invention, with the prototype you realize for the first time, a real model that matches all your specifications.

When you realize this you will probably discover unpredictable surprises. At that stage, you may also decide to improve the appearance, the performance and adapt the product to any new realities. You have to also comply with all normalization needs for each country targeted for the commercialization.

The benchmarking of your prototypes will be the last step before jumping into the management of the intellectual property rights.

#### Step 5: THE INTELLECTUAL PROPERTY (IP) STRATEGY

Now you have in hand a real invention and you are satisfied by the characteristics of this product and confident that it meets most of your previsions and goals.

This is the time to prepare your IP strategy.

IP protection is a highly professional process, and depending on the number of countries where you seek protection, can be expensive and cost you from \$1,000 to \$100,000. To avoid unnecessary expenses and frustration, professionals should be used to help you to realize your IP strategy.

Do it carefully because this is a very strategic step, and the way you will protect your invention or innovation will definitively influence its commercial potential.

When you prepare your IP strategy, a consultation with a patent attorney is an investment not an expense.

### PROTECTING INTELLECTUAL PROPERTY: CONFIDENTIALITY

As already discussed, confidentiality is an important strategic and legal question, that you need to deal with from the very beginning of your discovery through the commercialization and even thereafter and:

- you have to be sure that nobody will infringe your invention or obtain a patent for your idea;
- you do not want to lose your right to obtain a patent because your invention suffers from a previous public disclosure, before your first filing. Disclosure by a third party with whom you did not have confidentiality or a non-disclosure agreement is equivalent to a public disclosure;
- you could decide to protect your invention in part or in total as a trade secret or a combination of patent and secret. In fact, more know-how is needed to manufacture an invention, stronger is the patent.

The best way to protect your idea or invention is to limit your communications with any third party and when you are obliged to share information for business or development purposes, protect yourself by asking your partners to sign a confidentiality agreement.

### THE NON-DISCLOSURE AGREEMENT

When you prepare a non-disclosure agreement with your counselor, the most common articles included are:

- statement of purpose of the exchange of information;
- description of materials and information to be designated confidential, including all future information;
- term or duration of the obligation of confidentiality;
- exceptions to the confidentiality obligation;
- confirmation that the agreement does not convey a license for the use of any intellectual property beyond the limited purpose of the confidentiality agreement;
- surrendering of material at the termination of the agreement;
- remedies in the event of breach of the confidentiality agreement.

### RECORD KEEPING TO PROTECT INTELLECTUAL PROPERTY RIGHTS



The best way to keep track of the development of your invention, while protecting your intellectual property assets before a patent is granted to you, is to log all pertinent actions and communications with credible record.

In the United States of America (USA), the record keeping activity is fundamental with respect to particularities in the US patent law.

Effectively worldwide, the right to patent an invention is accorded to the first person that files an application, but in United States of America (USA), the right to file is accorded to the first inventor or inventors.

You presently know the importance of record keeping when the USA is one of your targeted countries to obtain a patent.

To conclude, the first part of my presentation, your idea or result of R&D is a valuable patented invention or innovation. The stage of development is over and you have to choose the way you will obtain a return on your investment.

We will now develop the commercialization stage of an invention or R&D results.

## 2. COMMERCIALIZATION STAGE

You will have at least two ways to commercialize your patented invention:

- by licensing a third party that will pay royalties in return for the exclusive use of your patent under certain conditions.

Advantages: You do not need any extra financing; a third party will assume the risk of the commercialization. You will receive royalties according to the agreement you negotiate.

Disadvantages: You lose control of the commercialization and you become dependant on the performances of the licensee. But licensing could also be energy consuming especially if you keep through the license agreement a control of the commercialization.

- By manufacturing the invention or the innovation.

Advantage: You can influence and even control the commercialization process and you will certainly receive a better return on your primary investment.

Disadvantages: You have to assume the risk of extra financing and have to be ready to invest your time and support a higher level of stress. You have to be ready to balance your time, which could interfere with your family and social life.

I will now develop the commercialization strategy from the entrepreneurial point of view.

Step One: THE BUSINESS PLAN

The business plan is the essential piece of your commercialization process. It will help you to stay in control but also convince third parties, suppliers and investors of your ability to direct an enterprise to make a profit.

You will not obtain financing from a third party without a clear and convincing business plan.

Generally a business plan explains:

- the mission and the objectives of the enterprise;
- the proposed or already existing structure of the enterprise;
- an evaluation of the projected market;
- a pro-forma budget and the need of financing;
- the projected sales for at least the first years and usually a three year prevision;
- the qualifications of the management and their experience (needed for financing purposes only).

You have to pay great attention to the preparation of the business plan because it will be the basis of your future as an entrepreneur.

#### THE NEED FOR VENTURE CAPITAL

Before the next steps, which are capital intensive and according to your business plan, you need to secure your assets or find a new financing. Only a public company can obtain financing through the stock market exchange. So unless you already have enough resources, you need to find sources of financing.

There are many venture capital sources available from private financing networks to institutional or community organizations or the banks.

Your business plan will be the key to open the door to those financing sources.

Naturally, tenders of venture capital very often ask to be represented at the management level of your company to secure their investment.

#### Step 2: PRE-PRODUCTION

Now you are ready to start the pre-production phase of the new product. First, you have to modify or create the environment to manufacture it and after choosing the convenient location, you need to:

- acquire, adapt and make adjustments to the equipment;
- negotiate with the third parties involved in the production who are subcontractors and suppliers;

- finally, you have to implement a quality program to meet and maintain the quality of your product at the lowest possible production cost.

Step 3: MARKETING STRATEGY & MARKET SURVEY

According to the results of your marketing plan (refer back to step 1.4), it is now time to define your marketing strategy to be sure you make your business a profitable one.

Now, you have to test, in a controlled environment, the reaction of the consumers, while compiling the results of these tests, and making the final adjustments to the product or the commercialization strategy before starting the commercial production.

You learned from your survey the last needed adjustments to adapt your product to the market needs. Now, you are ready to be in business.

Step 4: COMMERCIAL PRODUCTION, DISTRIBUTION AND SALES

You will start manufacturing the product and the distribution network or direct sales approach is ready to be brought into the market.

You already have transformed an idea into a potentially-profitable business.

But one last point: you have to think about the way to generate and to receive feedback from the market, to continuously improve your product, your intellectual property assets and even have a new great idea because successful business grows and survives as a result of continuous innovation...

**CONCLUSION**

This concludes the journey through the process of valorization of ideas or R&D results.

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